



Project **CREATE**
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Project website: **www.create-mobility.eu**

D4.2 - Technical reports for Stage 3 cities

Work Package 4 “Qualitative analysis of Transport policy developments”

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1 Introduction to deliverable D4.2 “technical reports for stage 3 cities”

How to reduce road congestion in large cities in Europe and the Euro-Med? How to encourage a switch from cars to more sustainable transport modes? Historically, rapid urban growth has led to a growth in car ownership and use, and consequential increases in urban road traffic levels. These increases, in turn, are associated with a range of negative impacts, including traffic congestion, traffic collisions, social exclusion and dangerous levels of air and noise pollution.

Recently, some European cities (Berlin, Copenhagen, London, Paris, Vienna) appear to have been successful in decoupling economic growth from traffic growth – and in the process, have been able to offer urban living environments that are cleaner and less congested, while maintaining increases in living standards. Why have these cities been able to achieve this turnaround, and what lessons can be drawn for other parts of Europe and the Euro-Med?

To answer this fundamental question, the CREATE project (Congestion Reduction in Europe, Advancing Transport Efficiency) brings together a team of international analysts in order to explore historical patterns of urban road traffic and car use, to identify success factors in encouraging modal shift and lessons learnt in Western European capital cities, and to work with Eastern Europe and Euro-med city partners (Adana, Amman, Bucharest, Skopje and Tallinn) to assist them in developing sustainable strategies.

Further information available on the CREATE Website: <http://www.create-mobility.eu/>

1.1 About Work Package 4 in the CREATE Project

How to account for the shift away from car-oriented policies towards sustainable urban transport policies?

As part of the CREATE project, the primary goal of Work Package 4 (WP4) is to analyse the historical ‘Transport Policy Evolution Cycle’ processes in Stage 3 cities, i.e. five Western European capitals (Berlin, Copenhagen, London, Paris and Vienna): Can we identify similar qualitative drivers of change across European cities? What are the main differences between cities and how to account for them? To what extent does the analysis of policy developments over time helps us make sense of recent policy choices and deadlocks? This is done by identifying the qualitative and contextual drivers that have enabled – or hindered – a shift from Stage 1 “urban congestion growth” to Stage 3 “encouraging sustainable mobility and liveable cities” policies. It also contributes to highlighting lessons to be learnt in order to speedup these processes in Stage 1 cities.

The work done as part of WP4 is coordinated by Dr. Charlotte Halpern, at Sciences Po, Centre d’études européennes et de politique comparée (CEE), CNRS, Paris.

1.2 About these documents, D4.2 technical reports for stage 3 cities

These documents, **D4.2 technical reports for stage 3 cities**, reflect the work produced as part of WP4 during Task 3, “Qualitative analysis of transport policy development cycle processes in the five Stage 3 cities during the Shift from Stage 1 to Stage 3”. Paying attention to case-specific contextual factors, policy instruments and programmes and involved stakeholders, **this case-study approach unveils the processes and the main drivers for change¹**.

D4.2 reports contribute to understanding the shift away from car-oriented policies towards alternative transport policies in different city contexts. Each report seeks to develop a comprehensive qualitative analysis of the historical development of policies relating to traffic congestion and car use over the past four decades. It investigates the ways in which transport policies are designed and implemented in the five Stage 3 cities, how they have evolved over time, which policy mix has been favoured at different times, their intended/unexpected effects, and how coordination has been ensured.

Each report draws on the following datasets:

¹ For more information, see D4.2 reports and technical notes.

- The work done in Tasks 1 and 2, as introduced in the 1st WP4 Technical report. This first technical report developed the common analytic framework, methodology and data collection strategy that is applied in WP4, provided a first assessment of the spatial and chronological perimeter it targets, and a brief mapping out of multi-level institutional and transport governance settings in the five Stage 3 cities, including a chronology of the shift from Stage 1 to Stage 3. Data sources include policy documents, proposed and passed measures, yearly budgets, and expert interviews with key policy actors.
- The dataset that were constituted as part of the WP4 database, interviews, workshops and site visits. This provided invaluable support for analyzing dynamics of change in each city and understanding the discrepancy we found between policy objectives and effective change.

Drawing on the common outline developed during Task 4.1, a case study analysis was developed for each stage-3 city in order to identify major factors of change and provide a detailed analysis of transport policy developments. The list of case study writers is provided here. We are thankful to Charles Buckingham (TfL) for his support in editing these reports and for his comments and suggestions for change.

List of case study writers for D4.2 reports

Stage 3 city	Case study writers
Berlin	Charlotte Halpern and Ann-Kathrin Bersch
Copenhagen and its region	Charlotte Halpern and Alessandra Carollo
Greater London	Dr. Caralambo Focas (on behalf of TfL)
Paris and Île-de-France region	Charlotte Halpern and Alessandro Maggioni
Vienna	Charlotte Halpern and Nicole Badstuber (UCL)

More precisely, these case studies assess the relevance of the 3 stages approach, characterize dynamics of transport policy change (incremental versus disruptive), and highlight factors of policy change (e.g., institutional and political, organizational, social movements, politics etc.).

More precisely, each D4.2. report includes the following information:

- A short summary
- Context: socio-demographic changes, major evolutions in urban development
- Institutional and political arrangements
- The governance of transport
- The organization of transport, including the transport offer
- Main policies, measures, or projects
- A brief conclusion about the 3 stages approach
- References, including grey literature and major policy reports, main publications about urban governance and transport.

The work achieved as part of WP4 is complementary to other work produced as part of the CREATE project. Particularly noteworthy is the work done as part of WP3 and D3.2 reports, which introduce transport supply data and policies influencing travel demand in each city. When relevant, specific sections from D3.2 reports are referred to. This will be done systematically during Task 4, and as part of WP5.

These reports are not in themselves a definitive synthesis of transport policy evolutions and their causes, but rather it is a compendium of resources, with some basic interpretation, to feed into this further analysis. It is complementary to the work produced as part of WP3, which reviews transport supply data and policies influencing travel demand in the city.

These reports only reflect the authors' view. Where opinions are expressed about the causes of change or the significance of specific aspects, these are with the sole intention of guiding further analysis under the CREATE programme and to act as a starting point for that further analysis.

1.3 Summary findings for D4.2 reports

For each of these report, the Sciences Po team (C. Halpern and C. Orlandi) produced a technical note, which content will be available on the project website as part the CREATE project's technical notes series – TN 6 to 9. These six-pages notes are meant to reach out to a wider audience. They highlight key drivers and processes explanatory of the shift towards stage 3, current and future challenges, as well as a discussion of the relevance of the stage-1-to-3 approach. This will reach out to a wider audience. We are thankful to Charles Buckingham, Radu Gaspar and the EIP team for their support in editing the final version of the Technical notes.



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D4.2 - Technical report for Stage 3 city: Copenhagen

Work Package 4 “Qualitative analysis of Transport policy developments”

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1.1 Brief reminder about the CREATE project

How to reduce road congestion in large cities in Europe and the Euro-Med? How to encourage a switch from cars to more sustainable transport modes? Historically, rapid urban growth has led to a growth in car ownership and use, and consequential increases in urban road traffic levels. These increases, in turn, are associated with a range of negative impacts, including traffic congestion, traffic collisions, social exclusion and dangerous levels of air and noise pollution.

Recently, some European cities (Berlin, Copenhagen, London, Paris, Vienna) appear to have been successful in decoupling economic growth from traffic growth – and in the process, have been able to offer urban living environments that are cleaner and less congested, while maintaining increases in living standards. Why have these cities been able to achieve this turnaround, and what lessons can be drawn for other parts of Europe and the Euro-Med?

To answer this fundamental question, the CREATE project (Congestion Reduction in Europe, Advancing Transport Efficiency) brings together a team of international analysts in order to explore historical patterns of urban road traffic and car use, to identify success factors in encouraging modal shift and lessons learnt in Western European capital cities, and to work with Eastern Europe and Euro-med city partners (Adana, Amman, Bucharest, Skopje and Tallinn) to assist them in developing sustainable strategies.

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1.1 About Work Package 4 in the CREATE Project

How to account for the shift away from car-oriented policies towards sustainable urban transport policies?

As part of the CREATE project, the primary goal of Work Package 4 (WP4) is to analyse the historical 'Transport Policy Evolution Cycle' processes in Stage 3 cities, i.e. five Western European capitals (Berlin, Copenhagen, London, Paris and Vienna): Can we identify similar qualitative drivers of change across European cities? What are the main differences between cities and how to account for them? To what extent does the analysis of policy developments over time helps us make sense of recent policy choices and deadlocks? This is done by identifying the qualitative drivers that have enabled – or hindered – a shift from Stage 1 “urban congestion growth” to Stage 3 “encouraging sustainable mobility and liveable cities” policies. It also contributes to highlighting lessons to be learnt in order to speedup these processes in Stage 1 cities.

The work done as part of WP4 is coordinated by Dr. Charlotte Halpern, at Sciences Po, Centre d'études européennes et de politique comparée (CEE), CNRS, Paris.

This document, **D4.2 Copenhagen report**, is part of the second series of technical reports produced as part of WP4 during Task 3, “Qualitative analysis of transport policy development cycle processes in the five Stage 3 cities during the Shift from Stage 1 to Stage 3”. It seeks to develop a comprehensive qualitative analysis of the historical development of anti-congestion policies and car use over the past four decades. It investigates the ways in which transport policies are designed and implemented in the five Stage 3 cities, how they have evolved over time, which policy mix has been favoured at different times, their intended/unexpected effects, and how coordination has been ensured.

By highlighting discrepancies between policy choices and policy results, D4.2 reports contribute to understanding the shift away from car-oriented policies towards alternative transport policies in different city contexts.

This is done across the 5 cities as follows:

- Explore urban sustainable policy dynamics by looking at three policy dimensions:
 1. policy objectives (i.e. Which are the main policy documents? How are the power and resources distributed among different levels of government? Major policy reforms? Proposed, passed and failed measures?),
 2. policy structures (i.e. what are the main resources: legal, financial, organisational? Evolution of budgets? Organisation charts? Creation of new agencies?)
 3. policy instruments (i.e. regulatory/legislative, economic/fiscal, agreement-/incentive-based, informative/communication-based).
- Map out the evolution over time since the policy shift began by explaining dynamics of issue salience, institutional and political changes, as well as changes in the governance of transport.
- Understand how controversies regarding urban sustainability policies were resolved by looking at policy results (failed/accepted measures).

The completion of Task 3 draws on the work done in Tasks 1 and 2, as introduced in the 1st WP4 Technical report. It developed the common analytic framework, methodology and data collection strategy that is applied in WP4, provided a first assessment of the spatial and chronological perimeter it targets, and a brief mapping out of multi-level institutional and transport governance settings in the five Stage 3 cities, including a chronology of the shift from Stage 1 to Stage 3. Data sources include policy documents, proposed and passed measures, yearly budgets, and expert interviews with key policy actors.

The work achieved as part of WP4 is complementary to other work produced as part of the CREATE project. Particularly noteworthy is the work done as part of WP3 and D3.2 reports, which introduces transport supply data and policies influencing travel demand in each city. When relevant, specific sections from D3.2 reports are referred to. This will be done systematically during Task 4, and as part of WP5.

1.2 About this document, D4.2 Copenhagen report

This D4.2 Copenhagen report develops a case study of this specific Stage 3 city. A preliminary draft was produced by Alessandra Carollo in November 2016. It was then completed by Dr. Charlotte Halpern (Sciences Po) (January 2018) in order to develop an analysis of transport policy developments in Copenhagen and its region. It provides key data and high-level interpretations for this case to feed into the wider cross-city analysis of transport policy evolutions being undertaken for Work Package 4 of the CREATE project.

More precisely, each D4.2. report includes the following information:

- A short summary
- Context: socio-demographic changes, major evolutions in urban development
- Institutional and political arrangements
- The governance of transport
- The organization of transport, including the transport offer
- Main policies, measures, or projects
- A brief conclusion about the 3 stages approach
- References, including grey literature and major policy reports, main publications about urban governance and transport.

This D4.2 Copenhagen report is not of itself a definitive synthesis of transport policy evolutions and their causes in Copenhagen but rather, a compendium of resources, with some basic interpretation, to feed into this further analysis. It is complementary to the work produced by CREATE partners in Copenhagen, as part of WP3, which reviews transport supply data and policies influencing travel demand in the city.

This report only reflects the authors' view. Where opinions are expressed about the causes of change or the significance of specific aspects, these are with the sole intention of guiding further analysis under the CREATE programme and to act as a starting point for that further qualitative analysis.

1.3 Short summary of D4.2 Copenhagen report

When, why and how was Copenhagen able to (re-)invent itself successfully into "the bicycle city"? To what extent are these developments replicable in other cities in CREATE and beyond? This report both highlights and accounts for the process of gradual yet transformative change, which has characterized transport policy developments in Copenhagen and its metropolitan area over the past four decades. It provides some explanation as to why and how a sustainable urban transport agenda emerged as a major political priority and flagship initiative. It also suggests that the situation is not as clear-cut as suggested by political discourses: pro-car policies and car use have not been completely abandoned in Copenhagen, and similarly, sustainable mobility policies are being strengthened beyond the city's limits.

In this perspective, the analytical framework developed as part of WP4, which combines the public policy approach with the urban governance approach (see WP4 D4.1 report), proved particularly useful in order to examine the ambiguous relationship between policy discourses on the one hand, and policy outcomes on the other hand. More than in any other cases studied in WP4, the Copenhagen case confirms the need to examine policy implementation dynamics in order to make sense of the choice and selection of policy instruments, including the role attributed from an early stage on to communication-based policy tools.

Two main findings are highlighted as a result of the historical analysis of transport policy developments in Copenhagen and its metropolitan region.

First it shows that **the shift towards urban sustainable transport was not achieved through a unidirectional transition from stage 1 to stage 3¹**. As in other stage 3 cities in CREATE, this process has been more incremental than abrupt. Yet in Copenhagen, incrementalism is particularly pronounced and primarily explained by high levels of competition between competing urban development models. Sustainable transport policies were introduced in the inner-city area from the late 1960s onwards, which is far sooner than in any Stage 3 city in CREATE, and continuously strengthened ever since, with a specific focus on cycling. Such early beginnings are closely related to the city's humble past: in a context in which the city was losing inhabitants and lacking the means to plan ambitious transport infrastructures and policies, this transport mode was considered the most affordable option for a majority of its inhabitants. It was only in the mid-2000's that cycling was promoted as a showcase for the liveable city model. The city actively contributed to promoting its sustainable transport model region-, nation- and worldwide. In parallel, neighbouring municipalities as well as national policies promote the development of car use as well as rapid transit public transport in order to increase accessibility to and from the capital city inner-area thus leading to some major transport controversies about the Nordhaven tunnel and the congestion ring.

Second, the report highlights the role of three drivers of change: 1) institutional competition and the city's search for increased autonomy in designing and implementing its own policy agenda, 2) low levels of institutional coordination in transport at regional level, 3) place-making as a preferred urban regeneration strategy in a context of deep socioeconomic crisis. More specifically, the role of horizontal and vertical competition between levels of government emerges as a major explanatory factor for the ambiguity referred to earlier to account for historical transport policy developments. Similarly to other cities in WP4, the development of an ambitious sustainable transport agenda in the city of Copenhagen is closely related to the city's struggle to compete with other metropolises worldwide and retain its autonomy vis-à-vis the Danish state and its hinterland. The report explores into details the Municipality's pioneering and active role in promoting Stage 3 policies, while other stakeholders – levels of government, transport companies, private actors, etc. – still tend to prioritize car-oriented (Stage 1) and/or traffic mitigation (Stage 2) policies and urban development models. It also provides some explanation for the persistence of strong differentiation dynamics between the city of Copenhagen, where sustainable urban transport measures and investments are concentrated and developed under the city's leadership², and the greater metropolitan area, where fragmented leadership and spatial development growth models have prevented a definite shift towards a regional sustainable transport agenda. All in all, a combination of all three types of transport policies coexists in Copenhagen, thus raising some issues of coordination between policy types – Stage 1, 2 or 3 –, and between levels of government.

In the final section, **the report discusses current challenges in transport policy developments in Copenhagen**. Expected demographic growth in the region shows the limits of the Copenhagen model and the need to promote its expansion beyond the city's borders as well as to introduce some adjustments in order to take into account current capacity investments in rapid public transit systems. The report also highlights the disconnect between political discourses and policy developments. Traffic congestion in the capital-city region have led to vivid controversies about transport policy goals both in Copenhagen and in the region. A combination of car-oriented and traffic mitigation policy measures has been suggested with the support of pro-car interest groups as well as politicians from across levels of government, including social democrats in Copenhagen. At national level, there is some growing concern regarding the status of the Copenhagen model: is it a showcase for promoting the Danish way of life or an exception that should remain confined to the centre of the capital-city? To what extent, how and through what levels of investments should the state support and fund transport policy initiatives in Copenhagen, as they sometimes compete with the capital city-region's role as the national powerhouse? In this respect, the report confirms strong convergence dynamics with recent transport policy developments in other cities in CREATE.

¹ For a discussion of the Transport Policy Development Cycle approach, see the CREATE D2.1 and D4.1 reports.

² See CREATE D3.2 Copenhagen report.

2 Introduction to the Copenhagen case study

Much has been written on transport policy developments in Copenhagen and to this day, this city is considered the 'gold standard' of the liveable city. It has gained a worldwide reputation as the "Bicycle city", and has been the recipient of a number of awards and labels such as the C40 Climate Leadership (2013) and the European Green Capital (2014) Awards. It has become a source of inspiration for other cities wishing to emulate this ambitious sustainable urban transport agenda and to "Copenhagenize" their cities by implementing a large-scale "place-making" and "planning for people" approach. Nevertheless, Copenhagen also constitutes an outlying case within the CREATE project when considering other dimensions of transport policy developments: the public transport supply was less developed until the recent period, few formal mechanisms of institutional cooperation have been introduced between the city and its hinterland, and the strong and enduring disconnect between the city and the region when considering transport policy developments and outputs over time has regularly been highlighted in the literature (Naess et al., 2009).

Such levels of differentiation have often justified examining separately the changes taking place in the city of Copenhagen and in its hinterland. Moreover, Copenhagen's fame as the "Bicycle city" often justified the preference for monographs or most-similar comparative studies, with Amsterdam for example. Yet the work done in CREATE offers an opportunity to examine possible convergence patterns with transport policy developments underway in other Stage 3 cities. By contrast, **this report examines the shift away from car-oriented policies in both the city and the region.**

Taking a long-term view on transport policy developments in Copenhagen and the wider metropolitan area, **the report's main objective is both contextual and explanatory at the same time.** More precisely, it contributes to the understanding of historical transport policy developments in Copenhagen in three different ways. First, it offers a detailed overview of major developments in transport over time by looking at the evolution of policy objectives, tools and resources. Second it provides some explanation for such policy changes by examining various drivers – or combination of drivers – that might have exerted an influence on the process as well as accelerated or strengthened it. Third, it suggests going beyond cultural explanations in order to make sense of dynamics of change as well as to consider all forms of mobility, not just cycling³, in order to account for transport policy developments in Copenhagen and the wider region.

Area selection and data availability

The area under study in WP4 is the city of Copenhagen and its Greater urban area. It differs slightly from the choices made in WP3 in so far as no distinction is made, within the city, between the "inner city" and the "outer city". Unlike the choice made in the Paris Ile-de-France case, it has proven more difficult to account for changes taking place at regional level. The region's intermittent existence as an administrative unit⁴ and the lack of continuity in regional transport policies doesn't allow consistency in including this level of government into the analysis throughout the time period under study in CREATE. As suggested by the existing literature on sustainable mobility in Copenhagen (Naess et al, 2009), **we expected some profound differences between the Copenhagen region and the city in terms of the scope and rhythm of policy change, and forms of governance.** Moreover, we expected central-local relations to exert a critical role in shaping forms of cooperation between the capital-city, adjacent municipalities and regional authorities.

Nevertheless, when possible, we took into account transport developments outside the city of Copenhagen as well as all actors involved in the design and daily operation of transport in Copenhagen. This had some implications regarding data availability. Due to high degrees of institutional and political fragmentation, and in the absence of an integrated transport authority, each level of government and transport provider produced its own data management capacity. Moreover, joint policy initiatives and measures remain very rare. As a result, considering policy developments in the city and the greater Copenhagen area raises issues of data collection and method.

³ The study visit to Copenhagen with Sciences Po masters students in November 2014 proved particularly helpful as a first insight into the management of ecological transition processes across policy domains, including transport and mobility. An overview of the main findings are available on the Urban School's website, in the study trip report: http://www.sciencespo.fr/ecole-urbaine/sites/sciencespo.fr/ecole-urbaine/files/voyage_stu_copenhague.pdf. In addition, the critical work done by Naess et al (2009) proved particularly inspiring together with the thorough reading and discussion we did of that work together with Sciences Po masters students during the 2016 Fall semester.

⁴ The Capital Region (*Hovedstadsregionen*) was an administrative area consisting of the following local authorities: two municipalities (Copenhagen, Frederiksberg), three counties (Copenhagen, Frederiksborg and Roskilde). It was abolished in 2007 and replaced by the Capital Region of Denmark (*Region Hovedstaden*), which covers a slightly different area. The Capital Region is, however, still in use in the transport policy domain and responsible for local public traffic, as well as the planning and maintenance of roads and railways. This is addressed further on in the report.

Sources

In addition to the social sciences literature devoted to developments underway in Copenhagen since the early 1990s, the report benefited from the input provided by the Municipality of Copenhagen to WP4, including the WP4 Copenhagen city questionnaire (Hansen et al., 2016) and research support for accessing statistical data, public reports, archives and press archives. The report also benefited from the work done as part of WP3 (D3.2 Copenhagen report), presentations made during WP3 and WP6 workshops⁵ and study visits organized in Copenhagen.

As part of WP4, a number of interviews were conducted with a large variety of stakeholders. A group interview was organized together with CREATE partners in Copenhagen in February 2016⁶. This was completed by a series of face-to-face and telephone interviews organized by the Sciences Po, CEE team⁷.

Data collection was systematized as part of the completion of the WP4 database. This was achieved by the Sciences Po, CEE team (Alessandra Carollo, Charlotte Halpern, Simon Persico)⁸.

Report outline

This report is organized in two sections. It starts by providing a dynamic overview of demographic, socio-economic and institutional changes in the Copenhagen region. This also includes changes in transport organization. The following section explore the relationship between changes in context and transport policy developments. Four main phases are identified with some significant change in the type of policy goals, measures and projects that have been introduced in the capital-city region, including current challenges.

⁵ See the D3.2 Copenhagen report (Kayser et al., 2016). See also contributions to CREATE meetings, including the WP3 workshop (Sciences Po, Paris, 8-9 March 2017), CREATE consortium meetings and the WP6 scenario-building workshop (UCL, London, 21-22 February 2018).

⁶ This group interview was organized together with the Municipality of Copenhagen with some 10 participants. It took place in February 2016 in Copenhagen. See D4.1 WP4 report. We are thankful for the support provided by CREATE partners in Copenhagen.

⁷ Respectively in February 2016 and October 2016. See D4.1 WP4 report.

⁸ This case study has also benefited from the work done outside the CREATE project by the Sciences Po team. Charlotte Halpern organized a one-week study visit to Copenhagen with Sciences Po master students between November 11-14, 2014. The material gathered on this occasion proved particularly helpful as a first insight into forms of urban governance and policy-making in Copenhagen and its region. Our group met with leading representatives from the political, administrative and academic spheres. The study trip's report is available: https://www.sciencespo.fr/ecole-urbaine/sites/sciencespo.fr/ecole-urbaine/files/voyage_stu_copenhague.pdf

3 Major drivers of transport policy change in Copenhagen.

Copenhagen plays a unique role in the capital city region and Denmark. It clearly dominates the Danish urban system and holds some specific features that are closely related to its role as the country's political, economic and administrative centre. Within the region itself, there are some profound differences between the city of Copenhagen and its suburbs in terms of demographic and socio-economic dynamics, land use and urbanization patterns, as well as lifestyles and behaviours. This has an impact on mobility patterns and individual preferences, especially in a context of high institutional fragmentation and a low degree of institutionalized forms of horizontal and vertical cooperation between levels of government.

The aim, in this section, is to examine those factors that could have potentially shaped transport policy developments in the capital-city region. Drawing on the framework of analysis introduced in D4.1 and in complement to the CREATE D3.2 Copenhagen report, demographic, socioeconomic, political and administrative factors are examined successively.

3.1 The emergence of strong socio-spatial differentiation mechanisms

The assumption that cultural and lifestyle factors underlie change in travel behaviour takes a particular significance in discourses and studies about Copenhagen. In this section, we chose to focus on those drivers for policy change often highlighted in the literature on urban governance⁹. In doing so, we propose examining the extent to which demographic, urbanization and socioeconomic trends, politico-institutional arrangements, and the organization of transport have shaped policy changes over time. This also should help generate alternative explanations for understanding the relationship between lifestyles, transport demand and policy change which lies at the core of the transport policy evolution cycle approach.

3.1.1 Demographic and urbanization trends

The city of Copenhagen is the capital city of Denmark. In comparison to other cities in CREATE, it is a relatively small city, with some 580 000 inhabitants in the city itself and 1,8 million in the Greater urban area in 2015 (see Table 1). For historical reasons, the City of Frederiksberg retained its autonomy and never was amalgamated to the city of Copenhagen (see map 1b). The two municipalities are often referred to as "the two central cities", but in this report and unless otherwise mentioned, the term "city of Copenhagen" is used as a term embracing both municipalities.

The Copenhagen Greater area covers approximately some 9000 km² and 43 municipalities (see Map 1a). In this report, the two following areas will be referred to in the following terms:

- The metropolitan area, which includes the suburbs closest to the city's borders, and consists of 16 municipalities with high levels of density and high percentages of daily commuters to and from Copenhagen.
- The greater Copenhagen region, which includes suburbs located further outside the city borders. It includes 43 municipalities with some daily commuting.

Since the opening of the Øresund bridge, statistics about transport demand often include some reference to the city of Malmö and its surrounding area, as well as to the Øresund region (see Table 1a & Map 1).

Table 1a. Key figures about the Copenhagen region as of 2017 (source: Statistics Denmark)

	Population
City of Copenhagen + Frederiksberg	690 000 (of which 100 000 in Frederiksberg)
Copenhagen Metropolitan area	1,3 million
Capital Region of Denmark	1,99 million
City of Malmö	270 000
Greater Malmö region	600 000
Øresund Region (Copenhagen + Malmö)	3,8 million (of which 2,5 in Denmark)

⁹ See D4.1 report

Map 1a. Copenhagen Greater area



Source: Ministry of the Environment, 2015

Map 1b. The ten Copenhagen districts surrounding Frederiksberg.



Source: Wikipedia commons©

Demographic trends

Patterns of demographic growth over the past four decades show some differences when considering successively these three areas.

The **city of Copenhagen** is an old European city and a fully developed urban area, with little green recreational areas. Its population peaked in 1950 and declined in the 1970s and 1980s. It has been growing again since the 1990s, amounting to some 0.7 million inhabitants in 2014¹⁰ which corresponds to some 12 per cent of the total Danish population (5,7 million inhabitants).

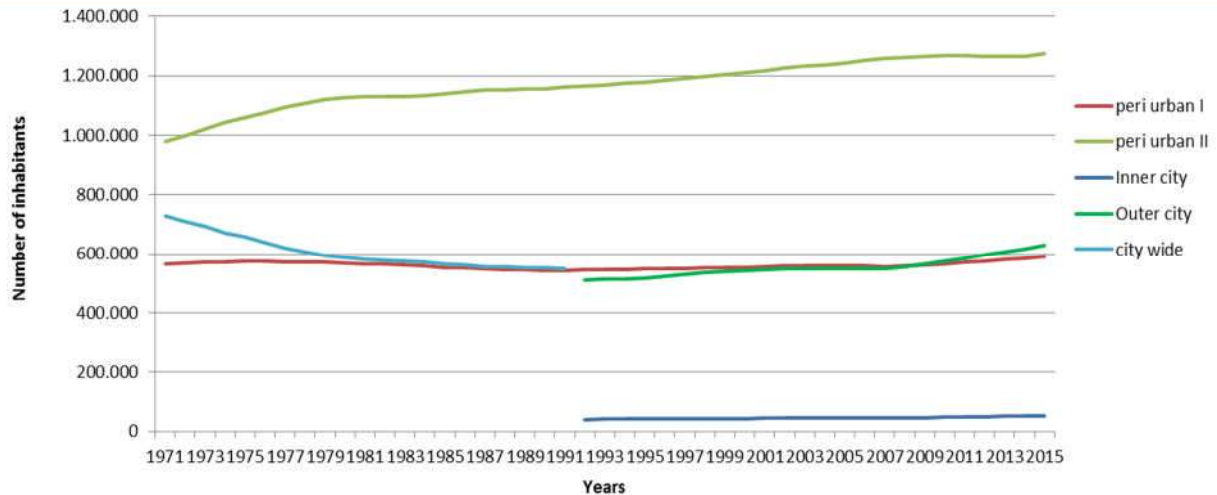
By contrast to the situation observed in the city, population has increased rapidly in the rest of the region throughout the entire period considered in WP4. Growth was achieved by developing agricultural land and municipal authorities played a pivotal role in this process¹¹. In **the metropolitan area (inner suburbs)**, population growth was particularly strong before the 1970s. Since then, it has shown similar patterns to those observed in the city of Copenhagen: a decline between 1976 and 1990, and renewed growth ever since. The largest share of manual workers that left the city of Copenhagen since the 1990s have settled in the western inner suburbs, which holds the largest share of subsidized social housing. It now amounts to some 0,6 million inhabitants and shows some signs of stabilization, mainly due to the reduction of new ownership housing.

¹⁰ These numbers include Frederiksberg Municipality with approx. 100,000 inhabitants.

¹¹ This is still the case today, with over 80 per cent of all new urban areas having been established on former agricultural land since 2000 (Fertner et al., 2012).

In the rest of the region (outer suburbs), continued growth was observed since the 1970s onwards, up to some 1.27 million in 2014. Up until the 1990s, this “spreading approach” (Valdemarra Pineda and Vogel, 2014) was fuelled by the increasing wealth of the population, much of which was spent on one family houses and private cars (Illiris, 2004, p.408). During this period, the average distance between new housing and the city centre reached some 23 km (Næss et al., 2009). This justified urban and infrastructural developments in the suburbs.

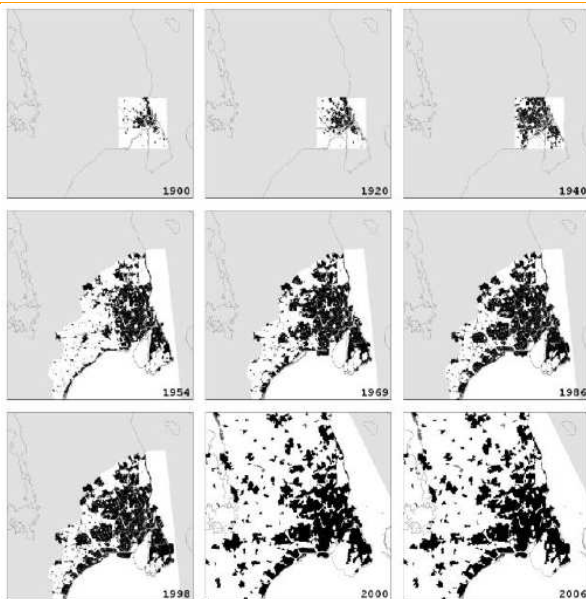
Graph 1a. Total number of inhabitants per area types (1971-2015)



NB: No data available for segregation of inhabitants in Inner and Outer City before 1992.

Sources: COWI, based on (Statistics Denmark, 2016a) and (City of Copenhagen, 2016a). Retrieved from D3.2 Copenhagen report, p.17.

Map 2. The urban morphology of Copenhagen (1900-2006)



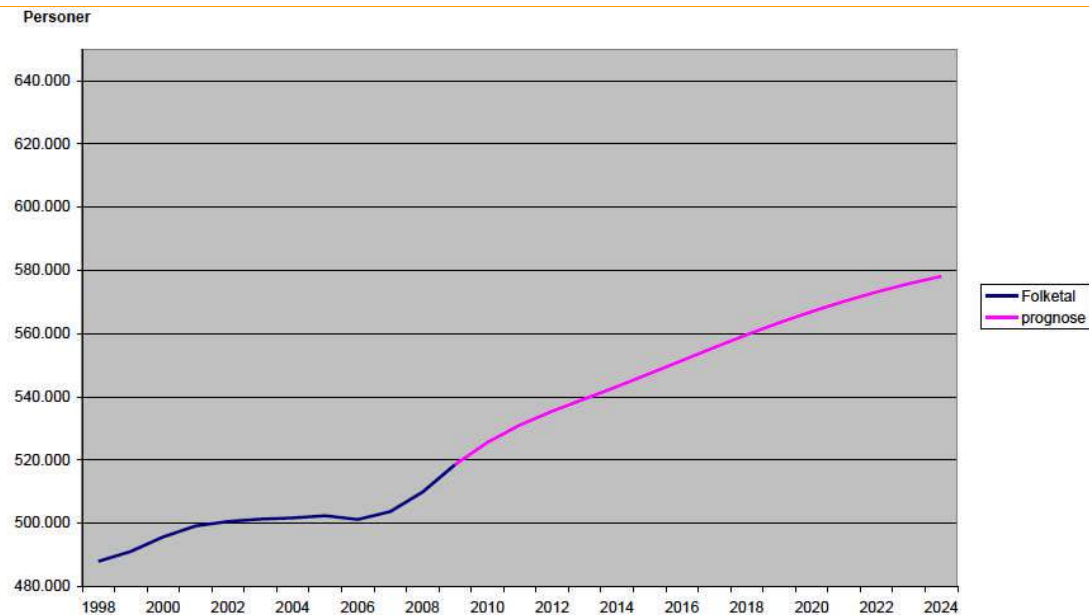
Source: Retrieved from Fertner (2012); Andersen (2014).

Notwithstanding the socio-economic impact of the 2008 crisis, which severely affected Denmark and Copenhagen more specifically, the city's population is growing again and estimates to 2030 have confirmed this trend¹² (see Graphs 1b & c). It plans for some additional 50.000 inhabitants by 2020 and some 45.000 new apartments by 2024. The city's population is expected to reach some 0,75 million residents by 2040. The growing demand for new housing, commercial space and recreational areas is primarily addressed by developing brownfields (Carlsberg, Valby), former harbour areas ("Sydhavnen" and "Nordhavnen"), and a recreational area in the south (Ørestaden). This growth is

¹² A detailed analysis is provided in D3.2 Copenhagen report (p.20-27), including educational level of inhabitants, employment status, number of jobs and workplaces, GDP and income per capita.

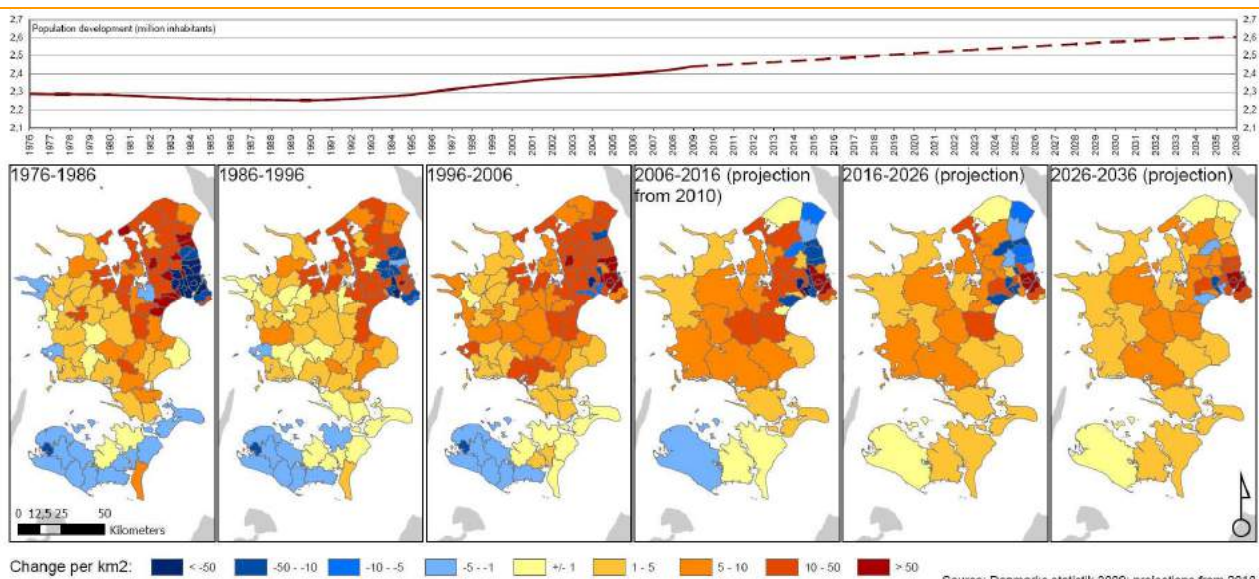
expected to benefit to the rest of the region, with an increase of 300.000 inhabitants and an additional 5000 ha of urban area (Fertner et al. 2012) over the next 30 years. Nowadays, demographic growth in outer suburbs continues almost exclusively in the counties of Roskilde and Frederiksborg.

Graph 1b. Population and population forecast for the city of Copenhagen, 1998-2024.



Source: Statistics Denmark, Presentation at CREATE WP3 Workshop, Paris, March 2017.

Graph 1c. Population and population forecast for the Copenhagen region by 2036: total (graph) and per km² at on municipal level (maps).



Source: Denmark statistics 2009, projections from 2010, The Economist.

All in all, urbanization dynamics in the Copenhagen region account for low levels of density in residential areas when compared to other large European cities¹³.

¹³ This is coherent with findings from WP3, see D3.2 Copenhagen report.

3.1.2 The spatial distribution of socioeconomic groups in the region

Demographic changes fuelled in some profound changes in the distribution of socioeconomic groups across the Copenhagen region¹⁴. In a context in which local authorities had the power to substantially influence the housing market – types of dwellings, whether or not to promote subsidized social housing – a large share of municipalities located in the inner and outer suburbs developed their own strategies in order to attract higher income groups.

Until the early 1990s, **Copenhagen was considered a poor city with a decreasing population** that is, a 40 per cent decrease between 1954 and 1992 (see Graph 1). It hosted a majority of low-income inhabitants in modest housing. Port activities were gradually dismantled, employment decreased sharply, and contributed over time to accelerating the impoverishment of working class areas. There was little interest among private investors and economic actors in renewing a declining city centre. Most of the major companies that had contributed to the city's heyday were reducing their activities in Copenhagen or relocating elsewhere (e.g., Carlsberg, A.P. Møller, etc.). The city of Copenhagen was not able to mobilize sufficient resources in order to influence policy developments outside its borders and to prevent the departure of its residents. Together, this contributed to the extension of the Copenhagen urban agglomeration (Andersen and Jörgensen, 1995; Andersen 1998). Wealthier social groups and young parents left their town apartments in order to build a single-family house further out in neighbouring towns or agricultural land. In those areas, rapidly developing road infrastructure allowed for daily commuting by car to and from the city. In these areas, the share of independent proprietors is overrepresented (Illiris 2004). By contrast, lower-income groups, including working classes, elderly people and students remained in the city, and were later joined by ethnic minorities and migrants.

Since the 1990s, and more decidedly during the 2000s, **a reverse phenomenon took place**. Similar to the situation observed in a number of other EU cities, urban life was considered fashionable again. In the case of Copenhagen, this change manifests itself through a continued increase in the number of students, young professionals and higher income groups. Apart from the southern and western inner-city area, where manual workers are still overrepresented today, together with unemployed persons and elderly people – retired from manual occupations – a large share of these socioeconomic groups has left the city centre and migrated towards the inner suburbs (see below).

These demographic and socioeconomic changes did not, however, emerge spontaneously but also resulted from and have fuelled major differences in terms of policy preferences at both an individual and a collective level. In Copenhagen, urban regeneration programmes since the 1990s onwards have increased the attractiveness of residential and commercial spaces in the city in conjunction with large urban development projects aimed at transforming former industrial and recreational areas. Workplaces are increasingly concentrated in the city of Copenhagen and dwellings have now become more affordable in the outer suburbs. When compared with other municipalities in the region, the city of Copenhagen still actively seeks to maintain an important stock of cheap housing, in addition to the old stock of flats where legislation kept prices low. Nevertheless, their share has been reduced since the 1990s as a result, on the one hand, of urban renewal policies, and on the other hand, of possibilities of converting rented flats to occupied ownership. Over time, so-called “Gentrification policies” have led, in close relationship with the development of the metro system, to regenerating the built environment by enlarging the size of dwellings, transforming courtyards into gardens and recreational areas and increasing the number of public spaces (Interview Metro, February 2016). In this context, the city of Copenhagen's inner-city area became one of the most expensive places to live in Denmark (Andersen, Winther, 2010)¹⁵.

By contrast, municipal authorities outside Copenhagen have developed aggressive attractiveness policies across policy domains (e.g., housing, green areas, transport and mobility, etc.) in order to compete with the city of Copenhagen's renewed attractiveness and claim to have become “the best place to live”.

3.1.3 Persistent differences in political behaviours and policy preferences across the region

Together, demographic and socioeconomic differences within the region still shape political behaviours and municipal strategies across a number of policy areas, including transport. These differences are strongly related to municipal strategies in terms of urban planning and housing.

¹⁴ Changes in age groups are examined in D3.2 Copenhagen report.

¹⁵ See also Interview with Hans Thor Andersen, Copenhagen, February 2016 and the presentation given as part of the study trip of Sciences Po master students to Copenhagen (November 14, 2014): “A brief introduction to Copenhagen: recent developments and governance structures”.

Socio-spatial and urbanization dynamics are reflected in political discourses, which refer to the city's uniqueness in order to criticize its insularity or praise its advantages. They account for the city of Copenhagen being a "red city" in which **the Social Democratic Party has enjoyed a comfortable majority for seven decades**. The recurring politicization of housing and transport often shows a clear distinction between the city and the rest and the region, and to a lesser extent, to right and left leaning governments. Housing and transport are particularly representative of such political and spatial divisions. At regional level, demographic and socioeconomic trends have contributed to a political dichotomy between, on the one hand, right leaning local governments in the region, and mainly to the north, with little cheap housing and a preference for car use, and on the other hand, left leaning local governments, in the city of Copenhagen and the western suburbs, where a larger stock of cheap and/or subsidized housing is actively maintained and with a preference for non-motorized mobility.

These political and spatial divisions also created **strong support for the emergence of an ambitious urban transport agenda** in the city centre in combination with aggressive communication strategies, whereas a pro-car approach is maintained – either directly or indirectly – beyond the city's borders. In addition to dealing with the situation inherited from the past, i.e., a low offer in public transport until the construction of the metro, local authorities in Copenhagen have supported the development of alternatives to car traffic, through pedestrianisation initiatives, low-speed measures and the reduction of car-space. This, in turn, has contributed to an exacerbation of its singular position within a car-centred region. Indeed, in the rest of the urban agglomeration, car use is still considered a dominant transport mode and other municipalities have been more reluctant to introduce ambitious sustainable mobility policies. Lower levels of density partly account for such choices, but in a majority of cases, this is first and foremost due to municipalities' aggressive urban development strategies in order to attract investments and commercial developments to the suburbs.

These differences are also reflected in commuting patterns to and from the City centre (see Graph 2b). They reflect above-mentioned political and spatial divisions, and confirm the close interrelationship between the location of housing, jobs and the transport offer within the regional context. The concentration of employment in Copenhagen and a form of development conducive to urban sprawl have both considerably increased transport demand within the metropolitan area. Different policy alternatives are being discussed in order to address the specific issue of daily commuters to and from central Copenhagen. This includes the management of traffic flows, the planning and maintenance of roads and railways, as well as the coordination of public transport provision. Since the opening of the Øresund Bridge, this also concerns daily commuting from Malmö (Knowles, 2006). Part of the regional transport demand in the Greater Copenhagen region is fuelled by demographic and socioeconomic changes taking place in Malmö and its regional area, across the Øresund bridge (see Table 1 above). Real estate prices on the Danish side have contributed to growing integration of this Euroregion's housing and employment markets. As a result, transport demand to and from the city of Copenhagen, including its airport, have consistently increased over the past decade.

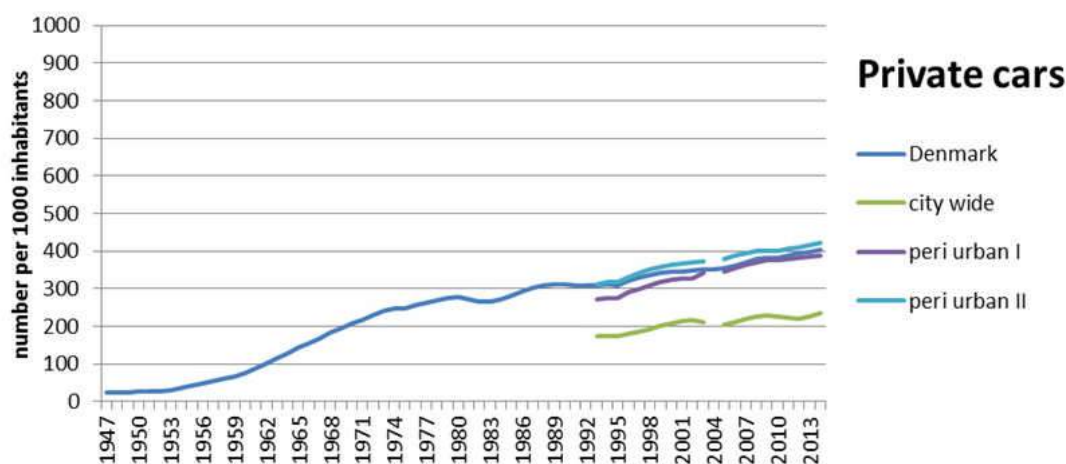
3.1.4 Urbanization dynamics and changes in transport behaviors and preferences

In this context, each mode of transport appears to have its own catchment area (see Graph 2b). This is particularly visible when considering the development of car use – dominant in the inner and outer suburbs – and that of active forms of mobility, such as cycling – dominant in the city centre. The city of Copenhagen was characterized throughout this time period by low level of car ownership – some two-thirds of the families do not have a car (see Graph 2a) – and for a majority of residents relying upon alternative forms of mobility, including bicycle, for their daily transport needs.

Public transport appears to be playing a secondary role throughout the region and remains unevenly developed¹⁶. In addition, it is also characterized by strong levels of segmentation with each network being closely related to its own catchment areas: the Metro in the city centre, buses in the inner suburban area and the S-tog mainly serving areas located further outside the city and alongside major corridors. Altogether, and when compared to other Stage 3 cities in CREATE, the use of public transport remains quite low. As a consequence, the region as a whole could be defined as *"a more transport-demanding and car-dependent urban structure"* (Næss et al., 2009).

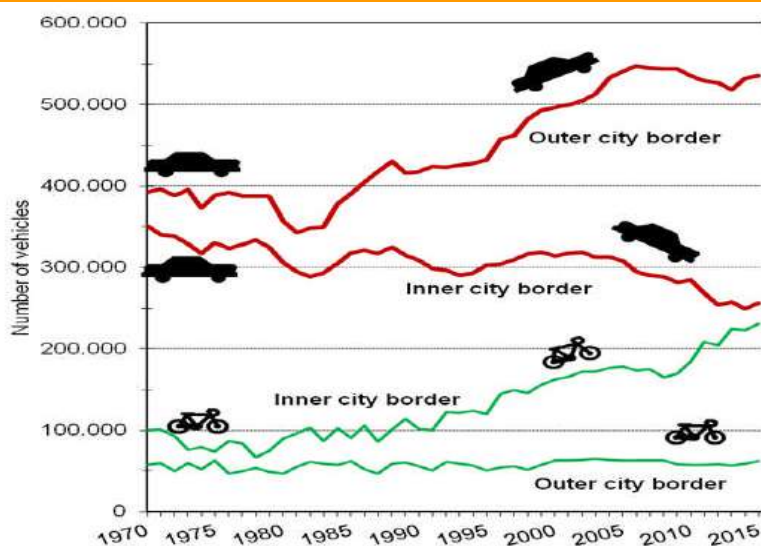
¹⁶ The percentage of public transport in Copenhagen remained low until the mid 2000s and the opening of the metro network.

Graph 2a. Development of the fleet of private cars, Denmark and Copenhagen compared (numbers per 1000 inhabitants).



Sources: COWI based on Vejdirektoratet, 2016 and Statistic Denmark 2016, extracted from D3.2 Copenhagen report, p.58.

Graph 2b. Average cross sectional road traffic volume (all motor vehicles) per workday between 07 and 18 hours. [Number of vehicles]



Source: City of Copenhagen, 2016

Yet, the work achieved as part of CREATE also suggests that **the situation is not as clear-cut as suggested** in political discourses and studies focusing on the city only: pro-car policies and car use have not been completely abandoned in Copenhagen, and similarly, sustainable mobility policies are being strengthened beyond the city's limits. Transport demand in the region is now addressed through a more integrated approach to mobility, which takes into account new urbanization trends in the suburbs. Due to real estate prices, a growing number of families with children have left the centre of the city of Copenhagen and brought a new way of thinking into the suburban cities, including a different approach to mobility and a strong interest in alternatives to car use. Similarly, the arrival of wealthier socio-economic groups in Copenhagen gave way to a rising demand for greater freedom of choice between transport modes, including car ownership and use. Recent controversies regarding urban access restriction and the development of the Nordhavn tunnel have confirmed the persistence of deeply rooted differences in terms of individual preferences for mobility as well as highlighting current changes resulting from the spatial redistribution of socio-economic groups within the region¹⁷. This will be further explored in the analysis of transport policy developments over time (see section 4).

¹⁷ Discussions during the CREATE workshop echoed such concerns for the long-term outcome of a rapidly changing socioeconomic environment in terms of transport and mobility demand. Some participants stuck to the classic dichotomy between the city and the region, but others highlighted an increased blurring of frontiers as well as persistent differences related to gender, education and income.

Over time, these urbanization dynamics have created **new needs for policy coordination and institutional cooperation between levels of government**, both horizontally (within the region) and vertically. Indeed, much of the current situation results from interinstitutional relations, and from the state's ambiguous approach to the role and function that its capital city should exert within the national economic development strategy.

3.2 The role of political, institutional and administrative factors

Transport policy developments are shaped by evolving central-local dynamics, and the ambiguous function attributed to the capital-city in national policies. In this section, we argue that **the state primarily relied on a “divide and rule” principle** in order to maintain its strong hold on major policy choices – a situation which is comparable in a number of ways with that of the Ile-de-France region¹⁸. Its ambiguous relationship to the capital-city's role as the national powerhouse is reflected in incessant revisions of its strategy, through administrative reforms, spatial planning or large infrastructure projects. This section also accounts for **the Capital region remaining a weak institutional actor** and the way by which for **the city of Copenhagen progressively strengthened its political capacities**. A list of major legislative and policy documents relevant to the analysis done in WP4 is provided below (Table 1b).

Table 1b. List of the main legislative and policy documents relevant to the analysis done in WP4.

1947 Finger Plan
1965 Copenhagen urban development plan
1970 Reform on decentralized governance
1974 Greater Copenhagen Council
1989 Regional Plan for Copenhagen Metropolitan Area
1990 Greater Copenhagen Council is abolished
1989 Copenhagen Municipal Plan
1989 Regional Spatial Development Plan
1992 Øresund Parliament Act
1993 Copenhagen Municipal Plan
1995 Copenhagen Transport Act
1997 Copenhagen Municipal Plan
1997 Traffic and Environmental plan
1999 Act of Parliament on Hovedstatens Udviklingsråd (HUR)
2001 Copenhagen Municipal Plan
2005 Regional plan for Copenhagen Metropolitan Area
2005 Copenhagen Municipal Plan
2007 Structural reform, suppression of HUR and creation of the Capital Region of Denmark
2007 National Spatial Plan – Finger Plan
2007 The eco-metropolis: our vision for Copenhagen 2015
2009 Copenhagen Municipal Plan
2009 Danish Transport strategy
2011 Copenhagen Municipal Plan
2014 Regional Development and Growth Strategy + 2015 Action plan
2015 Copenhagen Municipal Plan
2016 Parliament Act on the Ring 3 line

3.2.1 The Finger Plan, a cornerstone policy document with ambiguous outcomes

Spatial planning in the capital-city region is closely related to institutional competition between levels of governments and to the ambiguous legacy of the Finger Plan for Greater Copenhagen (*Fingerplanen*) or so-called Finger Plan. It was introduced in the post WWII context under the leadership of the central government. **Its aim was twofold.** First it was meant as an urban development programme, in order to prepare for a one million inhabitant metropolis. As such, it primarily drew on spatial planning tools as a way to structure and contain urban growth. Second, it also aimed at structuring spatial planning objectives in the region in combination with the creation of a metropolitan spatial planning authority. Until the late 2000s, Denmark was divided in some 270 municipalities and 14 counties with directly elected councils and collected taxes. Municipalities and counties were both required to prepare spatial plans. As such, they were considered major stakeholders in any attempts by central government to develop a national spatial planning strategy for the capital city region.

The Finger Plan was initially conceived as **a major opportunity to foster increased inter-municipal and state-local cooperation**. It did not stem from central government alone. Thematic working groups were established in cooperation with municipalities and counties in order to develop policy solutions and tools for the development of the capital region. Regrouped as part of the short-lived Regional planning office, three counties, 22 municipalities and some

¹⁸ See D4.2 report on Paris Ile de France

additional stakeholders gathered on a voluntary basis and developed the 1947 Finger Plan with the financial support of the largest municipalities and central government (Danish Ministry of the Environment, 2015). In addition to its organizational dimension, the Finger Plan laid out some key principles that have, ever since, dominated spatial and urban development in the capital-city region: to concentrate urban development alongside major railway axes (fingers of a hand) that stretched out from the city of Copenhagen (palm) toward suburban areas¹⁹.

The Finger Plan's legacy has been the object of many discussions among planners and transport experts (see Fertner 2012). On the one hand, the principles that were discussed as part of its elaboration have exerted **a massive, long-term impact** on policy discourses, representations and objectives about growth in the capital-city region. It remains as such a major reference in all subsequent planning documents (laws, directives, plans etc.) and still very much shapes current visions about urban and regional development, as well as policy preferences in a number of areas, including transport planning. But on the other hand, its impact on urbanization was limited and **it did not succeed in fostering institutionalized forms of cooperation** in the region. This is primarily explained due to its legal status – a report only, and no legally binding measures. This is also explained due to the inability to create a joint metropolitan planning authority. The regional planning office was abolished in 1950 and, in 1958, the state created the Regional planning secretariat, with the aim of adapting the Finger Plan in order to promote a multi-polar development approach. In the absence of a common vision, either at national nor at local levels, of the role and function to be attributed to the city of Copenhagen and to these emerging poles, subsequent planning documents - Principle draft for a regional plan (1960), First-step regional plan (1963) – opened large room for manoeuvre for inter-institutional competition.

Over time, the city of Copenhagen's role and function became less and less clear in the regional context, and it was unable, due to the numerous challenges it faced, to attract national investments until the early 1990s. This also due to the fact that the regional authority has remained a weak level of government.

3.2.2 The capital-city region: a weak level of government.

The formal recognition of the Copenhagen capital-city region and its status in the Danish administrative system has been a hotly debated topic since the early 1970s. This is due to continued tensions between centralization versus decentralization logics at national level and to the resistance from the large majority of municipal authorities to relinquish some of their powers and autonomy for the benefit of a metropolitan or regional authority. Over the past four decades, two-tier and three-tier administrative systems were introduced alternatively in a metropolitan area that was already long existing from a functional – if not an institutional – point of view. Such frequent changes account for the low degree of formal forms of cooperation between stakeholders at regional level.

A succession of temporary organizations

In view of the growing competition between municipalities, the municipalities of Copenhagen and Frederiksberg, in cooperation with the counties of Copenhagen, Frederiksberg and Roskilde, established the **Regional Planning Council** in 1967. This council was formally acknowledged by the state as part of the 1970 reform on decentralized governance, which did not take into account the specificity of the capital-city region.

The council was granted additional powers and renamed the **Greater Copenhagen Council** in 1974. This *de facto* 4th level of government relied upon indirectly elected representatives. In spite of internal dissensions and of the resistances from both municipalities and the central government to recognize its authority, these regional bodies were instrumental in fostering the development of joint initiatives at the regional scale and promoting an integrated approach to regional growth that drew on both spatial planning and transport planning objectives. It was, however, dismantled in 1989 (see below) as part of the Government's attempts to simplify decision-making procedures and reduce the number of local civil officers.

The creation of the **Greater Copenhagen Authority (HUR)** in 2001 is considered another milestone in the development of joint spatial planning strategy and policies at regional level, especially in the field of transport where it was instrumental in achieving higher levels of coordination in transport. Together with the municipalities of Copenhagen and Frederiksberg, 9 other counties developed joint initiatives in the field of transport planning, regional cooperation and economic development. In the field of transport, this also allowed the joint exertion of responsibility over public transport companies.

¹⁹ This is further developed in Section 4.1

HUR was eventually abolished in 2007 as part of the 2007 national administrative reform and replaced by the **Capital Region of Denmark (*Region Hovedstaden*)**, which covers a slightly different area. Most of the Greater Copenhagen area is now located in the "Capital Region of Denmark", whereas the outer part of peri-urban area II is located in "Region Zealand". Similar to the 4 other administrative regions that were created on this occasion, the Capital Region acts as a functional level of government and enjoys limited responsibilities in health, including hospitals, environmental protection, research and regional development. The Capital Region of Denmark only plays a limited role in transport and economic development as part of its competences in regional development. In its latest regional spatial development plan (2012-2016), transport policy goals focus primarily on large infrastructures that ensure direct connections with Malmö (Sweden) through the Øresund Bridge, Hamburg (Germany) through the Fehmarn fixed-link and other international and European connections through the airport. Some policy goals for mobility within the region were also introduced, such as the development of the public transport offer on the one hand, and the development of electric automobility on the other hand.

The 2007 national administrative reform in the context of the capital-city region

The 2007 reform is considered a major turning point in central-local relationships and a major step back in this process of strengthening the regional level. Both the central and the municipal levels now enjoy strategic powers and resources across a number of policy areas, including the competences formerly held by HUR in spatial planning.

The reform's main rationale was to ensure increased efficiency in the management of health policies and to drastically reduce the number of municipalities down to 98. In effect, it led to the weakening of formal mechanisms of regional coordination, allowed the state to intervene again in regional developments through its spatial planning agency, and favoured local responsibilities, by transferring more power to municipalities at the reform implementation phase. As stated in the 2009 OECD territorial review, the OECD observed, after this reform, that "*regions do not have many instruments to stimulate municipalities to co-operate in implementing one vision for the region*" (OECD, 2009).

Regional coordination was weakened whereas municipal authorities gained considerable planning and fiscal autonomy. Municipalities – including the city of Copenhagen – account for over 60 per cent of government spending (OECD, 2009). They enjoy the privileges of local self-government, having the obligation of collecting municipal taxes²⁰. In addition, they receive an annual block grant from the national government, which is negotiated annually by Local Government Denmark (the national federation of municipalities) and the national ministry of Finance. Since the 2007 reform, municipalities have also gained additional responsibilities in setting the agenda for regional development and growth, as well as for environmental sustainability. Municipal powers in spatial planning are now shared with the central state, namely the Danish ministry of Environment, as part of two-tier planning system.

3.2.3 What role for the capital-city region in the national context? The role of the State

The state's strategy in the capital city-region has not been continuous over the time span considered in this report. Since the adoption of the Finger Plan in 1947, it produced a number of transport and regional spatial planning policy documents. Their main goal was to ensure coherence between spatial planning objectives across municipal borders (e.g. urban development) and with national policy goals across sectors, including transport in terms of planning, capacity investments and policy resources. As a result, it is assumed that **the national state maintains a strong hold on transport policy developments** in the capital-city region through a number of policy tools and resources. This is further developed in this section by looking successively at administrative reforms, spatial planning and transport policy goals.

Maximising national economic growth by promoting municipalities over regions

Since the early 2000s and even more so following the 2008 crisis, the main concern has been to promote a more balanced economic development strategy nationwide by limiting urban sprawl and population growth in the capital-city region. The 2007 National Spatial Plan reflects this concern by stating that "*All regions should contribute to maximizing national economic growth*". National priorities and investments were redefined according these policy objectives. Political debates about the administrative organization of the capital-city region, the national spatial planning

²⁰ See also Section 3.2

strategy and the national transport strategy also reflected the growing concern of rural areas and other regions in Denmark for a more balanced approach to spatial development²¹.

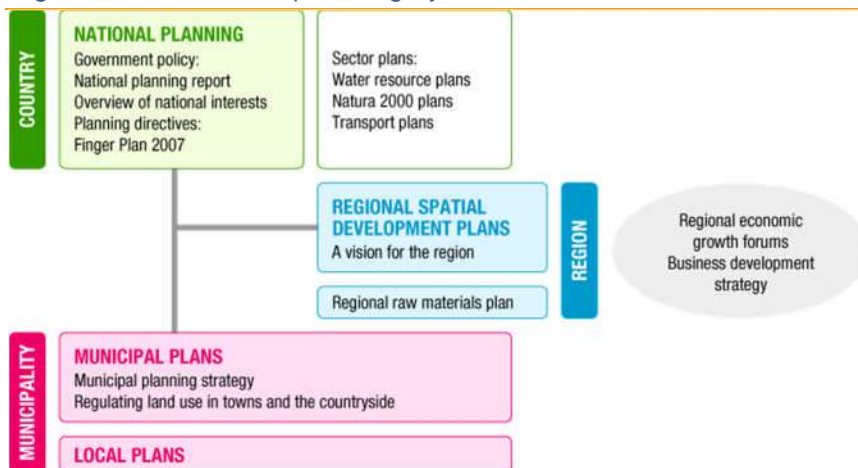
The National Urban Agenda, published during the same period, seeks to strengthen a number of cities and to counterbalance the dominant role played by Copenhagen and the capital-city region. Unlike the previous period (1990-2012), during which the city of Copenhagen benefited from unprecedented levels of national investment across policy areas, including transport, the state's support shifted towards the capital-city region – with the exception of the city of Copenhagen – and to other regions or cities in Denmark. It also sought to shape the slow process of urbanization taking place in the region and resulting in low-density settlements and a growing mismatch between the location of housing and workplaces ²². In transport, this raised increased issues in terms of commuting and traffic congestion.

In this context, the 2007 administrative reform can also be understood **as an attempt to strengthen national policy capacities and resources**.

Before 2007, and in a context of a three-tiers administrative system, three levels of spatial planning co-existed. National planning strategies were formulated by central government, regional plans were drawn up by regional planning authorities (10 counties, Greater Copenhagen authority, and the regional municipal council of Bornholm), and each municipality prepared a local development plan (*Lokalplan*) and a municipal plan (*kommuneplan*)²³. Since 2000, these are completed with a mandatory municipal strategy, which should be revised during the first part of every mandate. This ensures increased coordination between planning priorities and political strategies. Each plan was meant not to contradict the planning decisions of upper levels. When a change was brought to plans at the upper levels, all plans at lower levels had to be revised accordingly.

Since the 2007 administrative reform, **a two-tier administrative system was introduced**. Only two levels of spatial planning coexist with the ministry of Environment being designated as the main coordinating organization (see Figure below). This administration was put in charge of establishing the general framework for regional spatial development and municipal plans. It held veto powers in order to ensure that municipal plans were consistent with overall national interests. A new series of tools were introduced in order to ensure coordination between levels of government and the consultation of a large number of stakeholders: national planning reports and directives, consultation processes, etc.

Figure 1. The Danish planning system since 2007



Source: Ministry of the Environment (2007) "Spatial Planning in Denmark"

Revising the Finger Plan under the leadership of the Ministry of Environment: 2007 and 2013

In addition to the changes brought to the Danish planning system, this administration also benefited from an unprecedented momentum to revise the 1947 capital region spatial plan (Finger Plan) according to the state's current

²¹ This will be further explored as part of the analysis of transport policy developments in section 4.

²² For a comprehensive approach to metropolization processes in the Copenhagen region, see Fertner (2012).

²³ Additional planning tools may be used in order to develop more detailed plans: framework, conservation and project detailed plans.

spatial planning strategy and interests. This initiative was meant as an attempt to strengthen cooperation horizontally, both at state (between national administrations, agencies, policies) and regional level.

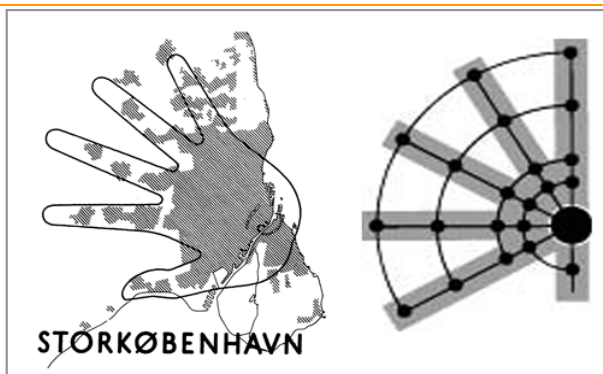
The 2007 spatial development directive (*Fingerplan 2007*) refers specifically to the original plan and reframes into the regional context. The need to adopt a specific spatial development plan for the Copenhagen region was justified accordingly: “Greater Copenhagen is one cohesive residential area and labour market across municipal borders. Therefore, this area has special regulations for planning”²⁴.

To this date, the 2007 Finger Plan remains the major planning guideline for the metropolitan area of Copenhagen (see Figures 2 a & b)²⁵. Unlike its predecessor, this document draws its legitimacy from being formally adopted as part of the 2007 national planning act. The 2007 Finger Plan is therefore considered a legally binding document in all 34 municipalities covered by the plan. It also includes both a procedural and a substantial dimension. This document further specifies the concrete ways through which urban development can be achieved while at the same time aiming at limiting traffic congestion and urban sprawl. It identifies four different types of areas:

- the core urban region (palm), where urban development and regeneration is to take place in existing urban zones in relationship with opportunities for improving public transport services;
- the peripheral urban region (fingers), where new developments and activities can be located taking into account existing and planned infrastructure as well as in relationship with opportunities for improving public transport services;
- green wedges between and across fingers, which should not be used for urban development or recreational activities
- and remaining areas, between urban fingers

It stipulates that future urban developments should be concentrated in the two first types of areas, and within a 600m radius from train stations (station proximity principle).

Figure 2a. Finger Plan 1947

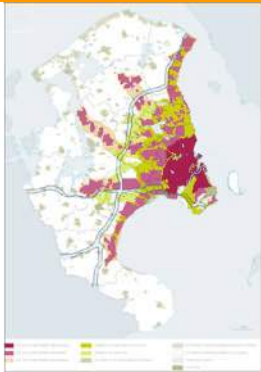


Source: Danish Ministry of Environment, 2012.

²⁴ Danish Nature Agency, <http://eng.naturstyrelsen.dk/planning/planning-in-citiestowns/> (last consulted in December 2017).

²⁵ See also Danish Ministry of the Environment, Nature Agency, 2012, Spatial planning in Denmark: https://danishbusinessauthority.dk/sites/default/files/media/2012_planning_eng_guide.pdf

Figure 2b. Finger Plan 2007

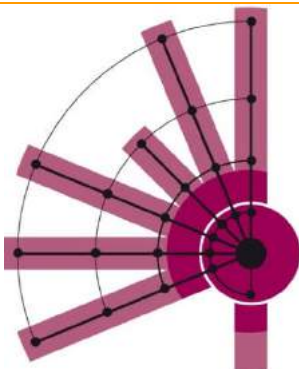


Source: Danish Ministry of Environment, 2012.

This revised planning document also led to **unwanted outcomes, notably in terms of policy coordination**²⁶. This is partly due to the fact that it was introduced concomitantly with the 2007 administrative reform and the dismantling of powers at regional level, which would have ensured effective coordination at implementation stage both between levels of government (vertical coordination) and within levels of government (horizontal coordination). Municipalities took over those responsibilities formally associated with the county level. Regional spatial development plans were given overall strategic, guiding functions but no binding power over municipal plans. Second, municipalities also enjoyed more discretionary powers at implementation stage, including much of the authority for the planning and maintenance of roads, public transport and cycling lanes.

In the absence of strong coordination mechanisms, the 2007 Finger Plan's effectiveness remained limited. This justified launching a new revision process in 2013 as part of a more general debate regarding the Danish spatial planning system. A number of suggestions were made in order to address both the 1947 Finger Plan's long-term unintended effects, the challenges identified at implementation stage since 2007, as well as new challenges. **In transport, the major challenge was to accommodate growing demand for daily commuting to and from the city of Copenhagen**, that is some 170.000 people coming into Copenhagen and some 107.000 passengers travelling out of Copenhagen in the morning peak period. The proposed revision acknowledged the need to develop three types of connections: connections further out in the region, between fingers as well as around the core urban area. Two "fingers" were added to the original Finger Plan in order to adapt to current urbanization patterns (see Figure 2c). Some missing links were identified in the existing S-train network, especially in terms of radial connections between the main rail axes (the fingers in the Finger plan). Moreover, the new plan recognized that additional capacity was needed altogether in the capital-city region, thus feeding into the work done by the Danish Commission on Congestion in 2013²⁷. Several capacity investments were launched in transport as a result of these discussions, including two major public transport infrastructure projects: the city ring in the inner-city area (metro system, expected in 2019) and the Ring 3 in the suburbs (light rail, expected in 2023/2024). Both projects aim at improving the quality of public transport in the region and reducing journey times through more direct routes. Discussions also involved major roads projects, such as the Nordhavn tunnel²⁸.

Figure 2c. Proposed Finger Plan 2013



Source: Danish ministry of Environment, 2013.

²⁶ Interview representative from Denmark capital region, November 2016.

²⁷ See Section 4.4

²⁸ See Section 4.5

The 2013 proposed spatial planning document has not, until this date, been adopted. The reform of the planning system was a hotly debated political topic during the 2015 legislative elections campaign, with the newly elected government transferring responsibility over the revision of the Danish planning Act to the Ministry of Business and Growth, together with its executive state authority, the Danish Business Authority. The main political rationale has been to simplify the overall procedure and further strengthen municipal planning rights, in order to encourage local initiatives and growth²⁹. As stipulated by the Danish Business Authority³⁰: “*The Danish Planning Act allocates the responsibility for planning in Denmark between the Danish Minister for Industry, Business and Financial Affairs, the five regional councils and the 98 municipal councils*”. Nevertheless, **some of the choices and decisions made during the 2013 Finger Plan revision process were maintained**. This was the case in transport, and this is very much explained due to the ability of major stakeholders to frame issues related to transport in the capital-city region as a major dimension of the government's economic growth agenda.

National transport policy objectives: a growing interest for rail-based solutions since the 2000s

Despite continued attempts to further coordinate national policy goals as part of the spatial planning reform, a number of policy domains, such as transport, retain high levels of planning autonomy within the Danish political and administrative system. Indeed, a large share of transport and infrastructure planning is defined under the authority of the Ministry of Transport as part of the national transport strategy. As a result, **coordination between spatial and infrastructure planning remains low and context-dependent** (OECD, 2009). Some tensions are regularly observed during transport policy design and implementation due to competing leadership claims between the ministries of environment and transport. Similarly, influence-seeking strategies are primarily organized in silos and benefit from high levels of political competition within the Danish political system. Joint national policy initiatives are rare. Organizational competition is further exacerbated by political competition between members of the ruling coalition. In the current context, similar tensions are observed with the Ministry of Business and growth, and that of Finances.

National transport policy objectives have thus been adopted following a rationale that may differ from that dominating spatial planning goals. Since 1962, Denmark had been constructing the main axes of national arterial railways and roads as part of the “Big H” strategy in order to increase connexions with Nordic countries and Mainland Europe on the one hand, and between Copenhagen and Mainland Denmark on the other hand (see Map 2³¹). Apart from the Fehmarn Belt Fixed Link with Germany, most of these connexions have been developed up until the former planning period. National capacity investments in national roads and highways to and from Copenhagen and the capital-city region also fit under this broader goal.

Map 2. Putting an end to Denmark's insularity through bridges.



Source: The Economist, 09/08/2007, “Crossing the waters”: <http://www.economist.com/node/9622190>

Similarly to the changes observed in spatial planning and territorial reforms, a shift was observed during the late 2000s in the national transport strategy. The 2009 Danish Transport Strategy confirms a shift away from developing international connections. New policy priorities were identified, with increased attention given to connections within Denmark as well as a growing interest for promoting urban transport across Danish medium-sized cities as well as

²⁹ This was made public in the “Overview of state interest in municipal planning 2017”, published by the Ministry of Business and Growth in 2015.

³⁰ See Danish Business Authority's website: <https://danishbusinessauthority.dk/danish-spatial-planning-system> (last consulted 15 December 2017).

³¹ See also Map 4 in Section 4.3

cycling. For railways, this is achieved through the so-called “one-hour” model, which seeks to reduce travel time by train between main Danish cities down to one hour, and the development of metro systems. In the case of roads, the reduction of congestion on the road network justifies the development of new road and public transport infrastructure that will allow increased connections to and from the country’s main hub. Also, the general framework for passenger transport differentiates between road usages.

A full integration of transport modes has not been achieved yet and only a few formal and institutionalized mechanisms were introduced across levels of government in order to overcome levels of segmentation. This does not mean that no coordination between modes takes place in transport planning, but it needs to be constantly renegotiated and remains, as such, context-dependent. Joint initiatives and measures are developed on a case-by-case basis.

In this context, we assume that **transport planning remains hierarchically organized**, with central government keeping a right to veto regional and municipal plans. Political consensus is either achieved within Parliament or *ad hoc* commissions in which economic, civil society and local interests are represented. This also applies to policy-making in the city of Copenhagen, in spite of its unique political and administrative status.

3.2.4 The city of Copenhagen: a unique administrative status

Within this national and regional administrative setting, the city of Copenhagen enjoys a specific status, including some responsibilities in spatial planning, transport and economic development. In addition to considerable municipal powers, the city’s strength also lies in a high level of political continuity, with the Social Democratic Party retaining the political majority for more than 60 years.

Political leadership was considerably enhanced in Copenhagen as in other large cities in Denmark following the 1998 reform. It induced a shift from magistracies (*magistratstyre*) to an intermediate government system (*mellemformstyre*), or the so-called “mini-mayor” system. In this institutional setting, the ruling party appoints the Lord Mayor, but the city council elects, from varying parties, a cabinet of several “mayors per expertise,” such as a technical and environmental mayor. While a mixed-party cabinet can lead to mayors with different priorities, it can also increase the incentive to collaborate and produce policies that enjoy widespread support and survive beyond the term of a single mayor (Katz, Noring, 2016). In addition, the focus on strong local capacity is reinforced through the city government’s ability to establish publicly owned corporations with specialized areas of responsibility and authority. This is not, however, the case in transport (see below).

The 1998 reform was instrumental in two different ways. To begin with, **it accelerated within-party transformations in the local Social Democratic Party** in Copenhagen. This Party has been dominant in Copenhagen politics since the pre-World War II period. Yet from the late 1980s onwards, a new generation of mayors emerged within majority parties and increasingly differentiated themselves from “old politics” by supporting alternative policy issues (e.g., culture, sustainable development, quality of life, etc.) and by drawing on alternative support within local societies and economies. In Copenhagen, leaders from the Social Democratic Party developed new relations with economic actors, universities and civil society organizations while at the same time, they were somewhat reconsidering historical relations with unions and representatives of the public sector on the one hand, and renegotiating relationships with central government on the other hand. In addition to within-party transformations, new alliances were made with political parties (e.g., the Greens, the Liberals) that had grown stronger over the years and increasingly challenged the Social Democratic leadership over local politics.

The 1998 reform and the shift towards the “mini-mayor” system was also instrumental in **redefining common policy goals** across a larger part of the political spectrum and achieving consensus. First, the reform had an impact on the allocation of portfolios between political parties. On the one hand, it contributed to the specialization of those political representatives in charge of traffic planning and transport, and on the other hand, it allowed for smaller parties within the ruling coalition to take leadership over traffic planning. Second, this reform offered an opportunity for reorganizing the municipal administration and mainstreaming strategic policy goals across municipal departments. Until then, responsibilities over traffic planning had been split between two different administrations:

- The Magistrate’s 4th Department – or so-called “technical mayor” or the “City Development Mayor” - was responsible for technical functions and infrastructure, roads, parks and city development.
- The Magistrate’s 5th Department – or so called “tram mayor”, “traffic mayor” and later “environmental mayor” – had been responsible since 1917 onwards for the administration of Copenhagen tram ways and, later, the city environment.

After the 1998 reform, housing was prioritized on the municipal political agenda and led to the creation of the “Housing and technical Department”, and it was only a few years later, due to the growing role of environmental issues on the political agenda, that it was renamed as the “Technical and Environment Magistrate”. Table 2 offers a detailed

overview of this organizational evolution. Today, this administration counts among the city's 7 administrations and corresponding committees. It is *"responsible for the city's environmental and climate activities, development of the traffic area, development of new urban areas and for a number of authoritative functions. ... In addition, [it] is in charge of the city's green areas. The activities portfolio covers operation and construction activities in relation to roads and parks, parking facilities, operation of cemeteries and cleaning services. Also, the administration is in charge of the implementation of strategic plans, such as the CPH 2025 Climate Plan and policies for vulnerable urban areas"*³². In 2017, it draws on considerable policy resources, including some 2.200 employees and a budget of DKK 1.8 billion (some €240 million).

These organizational changes in the city of Copenhagen are expected to have **strengthened municipal policy capacities** both vis-à-vis central government and neighbouring municipalities.

Table 2. List of Copenhagen's Lord and technical mayors per political party since 1938³³.

Lord Mayor	Technical mayor or the city development mayor (4rth Department)	Tram mayor or traffic mayor, later environmental mayor (5th Department)	Housing and technical mayors (since 1998)	Technical and environment mayors (since 2006)
V. Christensen, (S, Social Democratic Party), 1938-1946		H.P. Sorensen, SD, 1943-1946		
H.P. Sorensen, (S, Social Democratic Party), 1946-1956	J. Hansen, (The Communist Party, later a part of Ø), 1946-1954	A. Sundbo, (S, Social Democratic Party), 1946-1954		
S. Munk, (S, Social Democratic Party), 1956-1962	L. Estrup, (C – Conservative Party), 1954-1962	I. Dahl (S, Social Democratic Party), 1954-1962		
U. Hansen, (S, Social Democratic Party), 1962-1976	A.W. Joergensen (C – Conservative Party), 1962-1978	W. Brauer (SF – Socialist Party), 1962-1970 A. Gutterman (RV – Social Liberal Party), 4 month in 1970 L. Helveg Petersen, (RV – Social Liberal Party) 1970-1978		
E. Weidekamp, (S, Social Democratic Party), 1976-1989	V. Sigurdsson (VS, later part of Ø), 1978-1986 G. Starck (VS, later part of Ø), 1986-1989	I. Hansen, (The Communist Party, later a part of Ø), 1978-1981		
J. Kramer Mikkelsen, (S, Social Democratic Party), 1989-2004	L. Engberg, SD, 1992-1994 P. Martinussen, SD, 1992-1993 B. Frost, (V–Libertarian Party): 1994-1997	C. Ammundsen (SF – Socialist Party): 1982-1997	S. Pind (V– Libertarian Party), 1998-2005	
L. Engberg, (S, Social Democratic Party), 2004-2005				K. Bondam (RV – Social Liberal Party), 2006-2009
R. Bjerregaard, (S, Social Democratic Party), 2006-2009				B.A. Kjelgaard (SF – Socialist Party), 2010-2011
F. Jensen, (S, Social Democratic Party), since 2010				A. Baykal (SF – Socialist Party), 2011-2013 M. Kabell (Red-Green alliance). 2014-2017

³² Its core activities are: Local development planning and architecture, environment, traffic, parking, parks and recreational areas, urban renewal, neighbourhood improvement, cleaning and maintenance of outdoor areas, construction cases, cemeteries. See this administration's website: <https://international.kk.dk/artikel/technical-and-environmental-administration>

³³ Sources: <https://bibliotek.kk.dk/raadhusbibliotekets-online-resurser/borgerrepraesentationen/borgmestre>; http://static.sdu.dk/mediafiles/Files/Om_SDU/Institutter/Statskundskab/Publikationer/Kap1.pdf

				N. Hedeager Olsen (Ø) since 2017
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Source: compiled with TMF Copenhagen: <https://bibliotek.kk.dk/raadhusbibliotekets-online-resurser/borgerrepraesentationen/borgmestre>; and http://static.sdu.dk/mediafiles//Files/Om_SDU/Institutter/Statskundskab/Publikationer/Kap1.pdf

3.2.5 Concluding remarks

Several lessons can be drawn from this section. In the absence of a formal metropolitan or regional functional authority or level of government, we assume that **interinstitutional competition constitutes a dominant mode of governance in the Copenhagen capital-city region**. Over the time period considered in this report, some functional arrangements were introduced in order to increase cooperation between municipalities and between levels of government. Additional measures were taken in order to ensure greater levels of coordination between transport and spatial planning policy objectives. Yet they were limited in time or only exerted a limited impact.

As a result, we expect interinstitutional competition to have a strong impact on transport policy developments in the capital-city region, and to account for the city's capacities to plan and develop initiatives and investments in the absence of institutionalized forms of cooperation at regional level. Moreover, it confirms that transport policy developments should be analysed in a broader regional context in order to take into account regional and urban development dynamics. The pivotal role of competition as a dominant mode of governance is further exacerbated due to high levels of fragmentation in the organization of transport in the capital-city region.

3.3 The organization of transport in the Copenhagen region

The organization of transport in Copenhagen is characterized by high levels of fragmentation. The 2001-2007 period, during which the Greater Copenhagen Authority (HUR) enjoyed an overall planning responsibility for the capital area, including public transport, is considered an exception. Since the 2007 reform, municipalities and central government share most competences in spatial planning and transport. The region, despite some responsibilities on environment and transport, remains a weak level of government. In this context, the lack of common interests can only be overcome by strong political or institutional leadership.

We expect **forms of cooperation to remain context-dependent and submitted to evolving power relations between levels of government**. We also expect joint projects and policy initiatives to be negotiated on a case-by-case basis, through the creation of *ad hoc* mechanisms of cooperation (or the so-called pragmatic approach). Finally, we expect this situation to be particularly exacerbated in public transport, where institutional fragmentation is superimposed over organizational fragmentation. A summary is introduced in Table 3, and more details are given below about each transport mode. A more comprehensive description of transport supply is available in the D3.2 Copenhagen report (p.29 and beyond), and we chose to focus in this report on those aspects that would account for evolving forms of governance.

Table 3a. An overview of the transport network (as of 2015)

Copenhagen (city of)	
Roads	
Road network	1.020 km
Cycle lanes & paths	250 km, incl. 50 km in its own layout
Motorisation (cars / per 1000 inhabitants)	225
Public transport	
Railway (regional)	170 km, incl. S-trains and regional trains, 7 lines (6 lines going through Copenhagen)
Metro	21 km, 2 lines (in Copenhagen)
Bus	47 routes (9 lines in Copenhagen)
Planned infrastructure projects	
	Cityringen (metro), 17 stops by 2019 and line 4 (metro) with the Nordhavn segment by 2019 and the Sydhavn segment by.
	New light rail system in the region.
	6 road projects, either extension or new infrastructure.
	14 cycle superhighways by 2020 (7 achieved, 7 underway).

3.3.1 The road network: accommodating multiple users

The division of tasks between levels of government was clarified following the 2007 administrative reform: before 2007, counties owned regional roads. Roads are now owned either by the state or by municipalities:

- State roads are administrated by the Danish Road Directorate and consist mainly of motorways with some principal main roads. All Danish motorways are state roads. In the metropolitan area, the road network is divided in such a way that the state owns highways and a few regional main roads
- Municipalities own the largest share of the local street network. They enjoy much of the authority for planning and maintaining roads and cycle lanes.

Some further details are given below about municipal roads and the development of cycling.

Municipal roads

Albeit with some minor differences, the local street network is usually divided into different road classes, but not necessarily using the same terminology across municipal borders. However, road networks across municipalities share the following distinction:

- **Traffic roads** serving car traffic between towns and urban areas and between areas / districts with towns and urban areas. These roads are planned, designed and maintained in order to ensure a good traffic flow. Yet a number of these roads may also include speed calming measures, right-of way bus lanes, etc. The majority of roads include a clearly demarcated cycling lane.
- **Local roads** only serving local traffic and ensuring the connexion between traffic roads.

In addition to these widely shared features, an additional distinction should be made between public- and private-owned streets. Yet policies and regulations vary considerably across cities.

In the city of Copenhagen, the total length of the public-owned network is of 562 kilometres, with an increase by some 24 per cent since 1998³⁴. This growth mainly occurred on minor roads and resulted from the development of former industrial areas into new residential areas. Private-owned streets are minor roads, primarily in residential areas, and do not have the same influence on the overall car traffic. In principle, ownership depends on the ability to cover construction and maintenance costs, as well as complying with parking regulations. Public access is guaranteed on these roads, but the municipality is legally bound to take over these roads or to cover for any investment seeking to reduce traffic, if the traffic passing through constitutes more than 50 per cent of the overall traffic on these roads³⁵. In other words, the municipality cannot export the traffic to the private-owned streets. Privately-owned roads add some 400 kilometres to the total road network.

Unlike the situation observed in other municipalities, **there are no highways in the city of Copenhagen. All of them end at the city's border, thus allowing for strong traffic management within the city's administrative borders.** The primary radial roads are, however, owned by the national government, while the signal regulation is monitored by the city of Copenhagen. This division of tasks have been criticized for reducing the scope for joint traffic management, such as the possibility to ensure 'green waves' when crossing municipal borders and leaving / entering the city's road network. Since 2011 the city of Copenhagen and the national Road Directorate have developed a joint traffic-monitoring centre in order to manage incidents across administrative borders and provide drivers with some network-wide information about traffic.

The development of cycling in Copenhagen and the Capital-city region

- In Copenhagen:

As regards to cycling and the amount of resources devoted to its development in the city of Copenhagen, the number of municipal staff dedicated to its growth has increased significantly over the years. **The cycling network is one of the largest and most developed worldwide.** The first cycling plan was introduced in 1981, and a large comprehensive cycling strategy was first introduced in 2002. Cycling policies have primarily sought to provide road and parking space for cycling: cycling lanes were enlarged and extended, additional bicycle parking spaces were developed, and elevated bicycle tracks were introduced on all major roads in Copenhagen. Some € 100 million was invested in cycling infrastructure between 2006 and 2010.

³⁴ For an estimate of the present road network length in rest of the capital-city region, see D3.2 Copenhagen report, p.32.

³⁵ See D3.2 Copenhagen report for precise numbers about increases in the road network (p.30-31), for the way in which statistics reflect differences between public- and private-owned roads, and how it has evolved over time

Since 2011, the latest action plan “**Good, Better, Best: The city of Copenhagen's Bicycle strategy 2011-2025**” was introduced in combination a revised Cycle track priority plan up until 2016. Some additional measures were introduced in support of the city's cycling strategy, including green waves through traffic signals (at 20 km/h), the development of a public-hire bike system, significant infrastructure developments, such as short cuts in the harbour area, a bike bridge and an extended network of green bicycle routes free from car traffic.

Following the introduction of the **Bicycle Path Prioritisation Plan 2017-2025**, the city now puts increased emphasis on mainstreaming cycling policy objectives and unexpected effects, such as traffic congestion on the cycling network. It is expected to cost between DKK 1.1 and 1.8 billion (€ 147 and 241 million)³⁶ and has the following goals:

- Increase the share of cycling in commuting trips from 40% to 50%
- Capacity extension on existing lanes, with an increase from 25% to 80% of the number of bike lanes with 3 lanes
- Increase the quality of the journey: comfort, safety and speed
- In the region:

Since 2009, 23 municipalities in the Copenhagen region jointly developed the **Cycle Superhighway project as part of a partnership** that also includes the Capital Region of Denmark. The network will eventually consist of 28 Cycle Superhighways of a total length of 500 km³⁷. In addition to this framework agreement, each route requires the municipalities concerned to sign a joint agreement in order to specify their level of commitment and the concrete ways through which they will ensure similar travel conditions alongside the route (e.g., lighting, pump stations, green wave technology, minimum width, etc.). The network's completion is expected to amount to a total of €55 and 117 million (DKK 413 and 875 million). It benefited from direct funding support from the Capital Region of Denmark and that of the state. A joint secretariat was created in order to develop additional information and communication tools about the project (e.g., website, apps, maps, etc.). So far, 7 routes have opened and a total of 14 are planned by 2020:

- Copenhagen – Albertslund, 18 km distance west of the city, since 2012,
- Copenhagen – Farum, 22 km in the northwestern end of the metropolitan area in 2013
- Copenhagen to Ishøj, 14 km line in 2016
- 3 additional routes connecting Copenhagen to other municipalities in the region opened in 2017: Allerød, Frederikssund, Værløse
- 2 ring lines have opened in 2017: one connecting Copenhagen with Frederiksberg (Indre Ring, 14 km) and another one, connecting municipalities outside the densest parts of the metropolitan area (Ring-4, 15,7 km)

³⁶ CPH Post online, 24th February 2017. This article also mentions the following estimates for the division of space between road users: 7 per cent for cyclists, 26 per cent for pedestrians, 54 per cent for cars and 12 per cent for parking.

³⁷ See the project's website (English version): <http://supercykelstier.dk/english/> (last consulted 15 december 2017)

Map 3a. The Super Cycle Highway network (as of March 2018)



3.3.2 Public transport: planning and organizing the network.

When it comes to public transport, institutional fragmentation is superimposed over organizational fragmentation. It should also be noted that Copenhagen stands out among other cases studied in WP4 as a region in which public transport appears to have received less attention and resources over the time span considered in this report. This is partly due to above-mentioned demographic, socio-economic and institutional features³⁸: In the city of Copenhagen, the lack of resources prevented capacity investments in public transport until the 1990s, and in the region, investment in S-Trains remained dependent upon the state's investment while car use dominated capacity investment until the 2010s.

Yet we argue that this is also due to **a number of structural barriers as well as to inter-organizational competition**, which, over time, prevented the emergence of a pro-public transport coalition – as observed in other cities in CREATE – and lessened this transport mode's attractiveness vis-à-vis car use in the suburbs and cycling in the city centres. In this section, we briefly review failed attempts to introduce a joint regional transport authority, before successively examining public transport systems.

How to achieve integrated transport planning in the absence of a joint transport authority at regional level?

Two periods in time clearly stand out when it comes to initiatives aimed at increasing integration in public transport. Between 1974 and 1990, the need to effectively regulate urban and car growth had led to the creation of a joint transport authority and operator, which only lasted until 1990, a year after the Greater Copenhagen Council (or Capital Council) was abolished (see section 4.2). This constituted an unprecedented attempt to better integrate public transport services across the capital region. The short-lived HUR was another milestone in successive attempts to further integrate major responsibilities in public transport within a single regional organization.

³⁸ This is further discussed throughout section 4. See also the work done as part of WP3.

But apart from these two sequences, **the planning and organization of public transport remains highly fragmented**. As part of the changes brought to the regional governance in 2007 and the development of new public transport services and systems, a new attempt had been made in order to further integrate public transport organization and planning in the Greater Copenhagen area. It did not, however, led to the creation of joint regional transport authority, nor did it allow the development of institutionalized forms of regional cooperation in this field, as repeatedly highlighted in the interviews done as part of WP4. **The state and the single municipalities are both responsible for transport and infrastructure but operators and authorities do not share a common public transport plan or strategy**. Transport planning and provision is split between three different companies, whose ownership structure, interests and catchment area differ from one another, and in some cases, overlap. Joint initiatives remain rare. Single operators work with municipalities in order to plan public transport services and develop their respective networks. In terms of integrated public transport planning it is often the most flexible network, i.e., buses, that have to adapt to more structured networks (e.g. the Metro). Table 4 and Map 4 provide an overall summary of the main transport companies (see also below).

Table 4. Who does what in the Copenhagen metropolitan area?

Political authority	Region	Municipality		State (Government)	
Transport planning	Movia		Metro	Transport Ministry	Danish Transport
Transport operator	Privat-Baner (local rail)	Bus operator	Ansaldo	DSB / DSB S-trains	Øresund-trains

Map 4a. Public transport systems in Copenhagen area.



Source: DOT, 2017

Regional trains: DSB

Railways in Copenhagen and the wider region are owned and operated by **DSB**, the national train company, which is an independent public corporation owned by the Danish Ministry of Transport. DSB is responsible for the national and regional train lines in Copenhagen, and the S-train system in Greater Copenhagen. S-trains have been in operation on 3 different lines (A, B, F) since 1934. Additional S-Train lines were developed in the 1940s (C, Frederikssund), in the 1960s (H, Koge – Hillerod). The last S-Train line was developed southwards between 1972 and 1983 (H, Frederikssund – Osterport) alongside one of the original “fingers” in order to service municipalities in the inner- and outer suburban areas. Apart from line F (circular), all lines go through Copenhagen main station.

Today, this electrified commuter rail network connects the city centre of Copenhagen with its suburban areas. The system has a total length of 170 km and consists of 7 lines and 84 stations (see map below). The operation is carried out by the state-owned company DSB, while tracks, signals, etc. are owned by **Banedanmark**. This state-owned company was created in 1997 as responsible for the maintenance and traffic control. Since 2010, it is a government agency under the Ministry of Transport.

Since the 1980s, the economic regulation of S-train services is characterized by a series of adjustments that reflect disagreements between this state-owned company and local authorities. Until the abolition of the HUR in 2007, a division of revenues between busses and trains corresponding to the partners’ contribution was in place.

Map 4b. The S-train network



Source: DSB S-Tog, 2017

The Bus network: Movia

Movia is a public transport company that was created as part of the 2007 structural reform and the Traffic Companies Act. It is responsible for 570 bus services and 9 railway services in the City of Copenhagen and the wider region. It meets the daily needs of some 2,4 million inhabitants.

The company is owned by the Capital Region, Region Zealand and 45 municipalities, Bornholm excluded. The city of Copenhagen, which provides the largest grant, as well as the 2 regions each hold a permanent seat on the company's board, whereas the remaining 44 municipalities elect 6 board members³⁹. The company brings together three pre-existing transit agencies from the former capital region area and is now responsible for public transport throughout the region of Zealand. Each agency had its own integrated fare system, which have been continued as three different "fare areas" since the creation of Movia. Till this date, it is considered to have developed the strongest regional interest.

Each year a service agreement is established with each municipality⁴⁰. These annual agreements allow adapting the bus service to the municipalities' new needs (e.g. new residential districts, new schools to serve, etc.) and funding solutions to prevent congestion, particularly in the densest central area. In Copenhagen for example, the bus network and services were profoundly transformed as part of the planning of the metro network, with the introduction of a primary bus network – A-Buses – and a higher speed network – S-Buses. This included the opening of new bus services, higher frequencies and segregated bus lanes⁴¹ as a way to ensure higher levels of reliability. *"Since then, the A-Bus system can be considered as a substitute of the tramway network"* (CREATE workshop, February 2016).

³⁹ Each member elects a representative from its municipal council, and the final selection takes place from this assembly.

⁴⁰ Interview Movia, October 2016

⁴¹ In the city of Copenhagen, bus lanes were introduced in 1973.

Map 4c. Movia's transport zone map



Source: ESRI, MOVIA

There also are some major differences in terms of levels of service – and levels of funding – between partners. The level of funding depends from the proportional distribution of grants stemming from the partners. The level of service is negotiated with the 47 partners who directly fund Movia depending on the hours of bus services driven. There is little debate about bus services running within a given municipality's borders, but inter-municipal routes are often a source of controversy and inter-municipal negotiations. The latter case concerns some 200 bus services in the region: each of them are owned and financed by the municipalities, but each of them relies upon a different funding agreement between municipalities and with Movia (interview with a transport planning expert, February 2016). Another interviewee mentioned this situation being detrimental to the overall system: *“Every municipality pays for the lines that serve its territory. If one municipality pays less, it's more expensive for the others”* (interview cycling expert, February 2016).

In the case of Copenhagen, 47 bus lines serve its territory: 9 are located within the city's borders, and others in cooperation with 29 adjacent municipalities. Passengers pay 64 per cent of the cost and the Municipality pays 36 per cent (DKK 350 mio, that is € 47 mio).

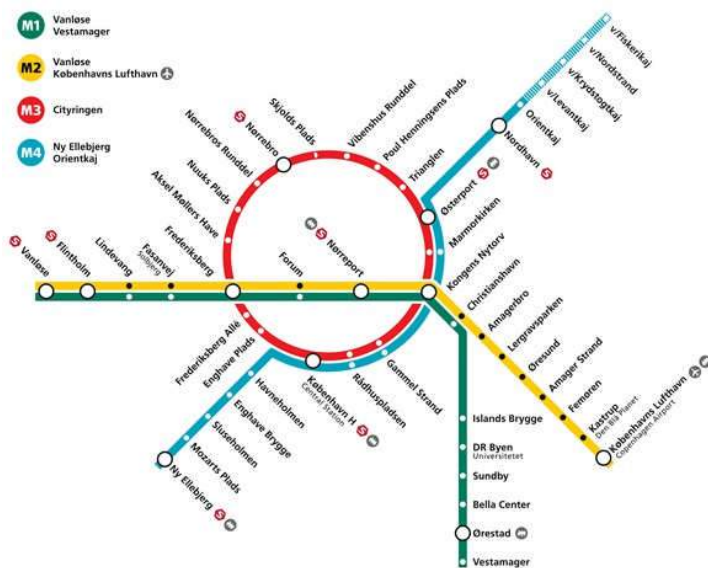
The Metro system

The development of the Metro system since 1994 has led to the creation of **Metro Company** (Metroselskabet). It was officially created in 2007 as a transport, development and construction company. It exerts overall responsibility over the operation of the Copenhagen Metro. The Metro Company is owned by City of Copenhagen (50 per cent), City of Frederiksberg and the state through the ministry of Transport. Ansaldo operates the metro system.

The metro system, which has a total length of some 20 kilometres (2 lines, 22 stops), was built *“out of nothing”* between 2002 and 2007. It is primarily located in the “two cities” but partly extends to the inner suburb area. It is currently being extended with the inner-city ring project (expected in 2019, line 3, 17 stops, see Map 4d). A further extension is planned towards Nordhavn by 2020, a new urban area under development in the northern part of the city, and towards Sydhavn by 2023. This project represents by far the largest capacity investment underway in the City of Copenhagen and introduces a major shift away from decades of low investments in rail networks and systems⁴². Together with the Ring 3 project, which also aims at developing circular connections, it is expected to radically change the radial structure that was introduced in the Finger Plan.

⁴² CREATE workshop, February 2016

Map 4d. The metro project under expansion



Source: Metro

The Ring 3 Light rail system

As of late, a newcomer was introduced in the transport governance system: the Ring 3 Letbane I/S, created in 2013 and renamed Hovedstadens Letbane (Greater Copenhagen Light Rail) after the Parliament formally adopted the project in 2016. This public-owned company has 13 owners: the state through the ministry of transport (40 per cent), 11 Municipalities (34 per cent) and Capital Region of Denmark (26 per cent)⁴³. It is in charge of planning and developing the Ring 3 light railway project, a 28-kilometre-long dual-track light rail is expected to run alongside the Ring 3 Motorway Road (between Ishøj in the south and Lundtofte in the north) and the Ishøj Cycle superhighway route. It will link suburban centres with one another by cutting across existing railway corridors (fingers). It will also provide increased accessibility to existing S-train lines, and to major regional economic, education and health centres in the region, including DTU and large hospitals (see Map 4e)⁴⁴. Its opening is expected by 2023 and the total infrastructure costs are estimated at €590 mio (DKK 4,4 billion)⁴⁵.

⁴³ According to the Greater Copenhagen Light Rail company's estimates, trains will travel at an average speed of 30km/h (maximum speed of 70km/h) covering the 27km stretch in 55 minutes. The line is expected to carry 43,000 passengers a day and up to 14 million passengers a year. See the company's website and annual reports: <http://www.dinletbane.dk/> (last consulted on 16 December 2017)

⁴⁴ 29 stations are expected to be built.

⁴⁵ Consultant firms have already been selected in order to work on the project's phases: preparatory works (COWI, Parsons Brinckerhoff, NIRAS, SYSTRA and Tetra Plan), Environmental Impact Assessment report and associated technical assessments (Ramboll Denmark), conceptual design and subsequent tender for building, operating and maintaining the future infrastructure (Ramboll Denmark and Arup), and station design and landscape integration (Gottlieb Paludan Architects).

Future challenges in public transport

- The shape of the regional rail network accounts for the network's saturation at peak hour, when all lines converge towards and away from the City of Copenhagen (Interview Metro, February 2016). High levels of investments would be needed in order to increase the service offer and quality (e.g., infrastructure, rolling, planning, etc.) (interview Capital region, November 2016).
- The strengthening of public transport would require increased forms of institutional and organizational cooperation among stakeholders, as well as new compromises about spatial planning objectives, and power distribution between levels of government. This also includes the need to revise funding arrangements in order to generate alternative resources and reduce uncertainty⁴⁶.

The preference given to *ad hoc*, case-by-case solution over an institutional one also results from the lessons learned from the 2001-2007 period. By reducing the inconvenience of high levels of fragmentation, this pragmatic approach seeks to **increase the attractiveness of public transport by providing stakeholders and users with an operational solution**, “*a sort of umbrella organization*” (interview transport expert, February 5, 2016).



3.3.3 Transport funding and financing

Since the 1970 reform on decentralized governance, a decentralized financial system was introduced at national level. Municipalities are increasingly dependent on tax income for planning and developing policies and services, including transport. All taxes and fees charged while purchasing and using cars go to the national government, and contribute to capacity investments in roads and car fleet renewal. Municipalities may solely rely on parking fees as a way to regulate parking demand. Municipal taxes cover for road maintenance.

Current public transport funding arrangements in the capital city area were first developed for the S-train network and later extended to other public transport services. The joint fare system and the revenue division in the capital area are largely inherited from the pre-2007 period, and a joint committee between the three companies was established in order to ensure a common strategy towards users. Yet in the absence of a sufficiently binding coordination mechanism, individual companies continued developing their own services and traffic rules. In Copenhagen, the metro project was developed through revenues from land value capture and through state's subsidies.

3.4 Concluding remarks about drivers for transport policy change

The work done as part of WP4 suggests that demographic, urbanization and socioeconomic trends are not the only drivers for change to be considered when it comes to understanding transport policy developments in the Copenhagen region. These macro factors are profoundly shaped by political, institutional, administrative and organizational arrangements. Over the time span considered in WP4, these factors jointly account for **strong differentiation dynamics between the city, the metropolitan area and the wider region**, and to some profound differences between these areas. Such differences are deeply rooted in political behaviours and individual preferences. In addition, differentiation dynamics are fuelled in by evolving state-local relationships and interinstitutional competition. This also confirms the need, when examining transport governance and policy developments in Copenhagen, to go beyond the city itself in order to take into account developments underway in the region, as well as the role played by the state through its policies and investments in the capital city region.

Moreover, in a context in which **transport planning remains hierarchically organized**, with central government keeping a right to veto regional and municipal plans, municipalities still face a number of constraints in order to shape transport policy developments, let alone develop joint initiatives. This also applies to policy-making in the city of Copenhagen, in spite of its unique political and administrative status. Yet, the work done in this section also suggests that **the situation is not as clear-cut as suggested** in political discourses and studies focusing on the city only: pro-car policies and car use have not been completely abandoned in Copenhagen, and similarly, sustainable mobility policies are being strengthened beyond the city's limits. This is further explored in the following section by analysing historical transport developments since the 1960s.

4 Historical transport policy developments: policy objectives, resources and measures

This section examines the concrete way through which specific combinations of above-mentioned drivers of change shaped transport policy developments in the Copenhagen region. This is done by analysing a selection of policy objectives, resources and measures over six decades.

This section also discusses transport policy developments in the context of the “Transport Policy Evolution Cycle”. We address **the following paradox**: even though Planning for city life (Stage 3) policy measures have been introduced from the 1970s onwards, Stage 3 thinking only became dominant in political discourses and policy objectives in the late 2000s in Copenhagen, and Planning for people (Stage 2) policies only recently developed in the region. Moreover, due to continued inter-institutional competition between the city and the state on the one hand, and between the city and its hinterland on the other hand, different types of policies constantly overlap, thus suggesting **the blurring of frontiers between the 3 stages and for the shift away from the car-oriented city neither being unidirectional nor evenly spread in the region**.

Four main phases were introduced in transport policy developments, corresponding to major changes in forms of urban and regional governance: during Phase 1 (1954-1970), state-local relations in combination with strong differentiation mechanisms between the city and the region contribute to shaping the development of car-oriented policies in the post WWII context; during Phase 2 (1971-1990) mitigation policies are introduced throughout the region, including cycling as the only affordable transport policy alternative in the city centre, in a context of rapid and uncontrolled urbanization dynamics in the region and urban decline in the city; during Phase 3 (1991-2009), and in a context of unprecedented state-city cooperation, sustainable transport is increasingly favoured as part of the city’s political agenda – urban growth and later on, climate change – while transport policy goals at the regional and national levels remain ambiguous. During the final Phase (since 2007), we observe a growing disconnect between, on the one hand, the emergence of the Bicycle city model and its rapid diffusion worldwide, and on the other hand, a series of major transport controversies that highlighted the need to collectively address mobility futures in the regional context.

4.1 The golden age of the car-oriented city (Phase 1, 1954-1972)

Transport policy developments between 1954 and 1972 are characterized by the emergence of strong differentiation dynamics between the city of Copenhagen and the rest of the region. Above-mentioned processes of suburbanisation on the one hand, and the impoverishment of the city of Copenhagen on the other hand, contributed to growing differences in transport demand and behaviours. In this context, the way in which transport is planned and developed across municipalities in the region primarily results from residents’ preferences in terms of housing and the wish to settle in areas offering direct access to green spaces. In the absence of strongly developed public transport networks at regional level, private motorization is considered instrumental in order to ensure daily access to the city of Copenhagen and major business and employment centres.

Throughout this sequence, and although some differences are observed between municipal authorities in the region in the ability to make transport policy objectives material, car-oriented visions play a dominant role in transport policy developments.

4.1.1 The pre-war legacy and the premises of the modern city

Much of Copenhagen’s urban development took place during the late 19th and the pre-WW II period. Together with the rapid development of the port industry, major infrastructure and networks were built in order to allow the Danish capital city to compete with its main Nordic counterparts.

Transport systems and networks were developed in order to ensure mobility within the city and towards neighbouring green and leisure areas. The horse-driven tram network dating from the 1860s was replaced in 1880s by a network of steam-powered and electrical tramways, as part of a first extension plan. In addition, as part of the city’s attempt to regulate the development of networked utilities and industries, and to increase coordination between the large numbers of private companies that were operating various urban services, it took over the tram network right before WWI. The first separate bicycle paths were established in Copenhagen around the Lakes in 1910, and bridle paths was converted into isolated Cycle ways in order to secure the heavy growth of cycles on the road network. Before WWI, some 50 km of cycling lanes were already in service.

A modern urban rail network of electrified city-trains (S-trains) was developed during the 1930s under the leadership of the national railways company (DSB). This was achieved with the support of the Electrification Commission and by electrifying the pre-existing local railway network. This large infrastructure development project was achieved as part of a national policy aiming at increasing rail capacity throughout the country. Similarly to other S-train networks in Vienna or Berlin, the Copenhagen S-train network connects the city centre to the inner and outer boroughs, including the 'bridge quarters', and suburbs. It is meant as complementary to other urban transport systems and modes. The first line was opened in 1934 - Klampenborg-Copenhagen H-Vanløse-Frederiksberg - with more lines soon after. Most lines were converted from steam-operated railways to electric, metro-like operation and stations. In total, the system has four main lines that are still operated today.

Figure 3a. The development of the S-train network in Greater Copenhagen

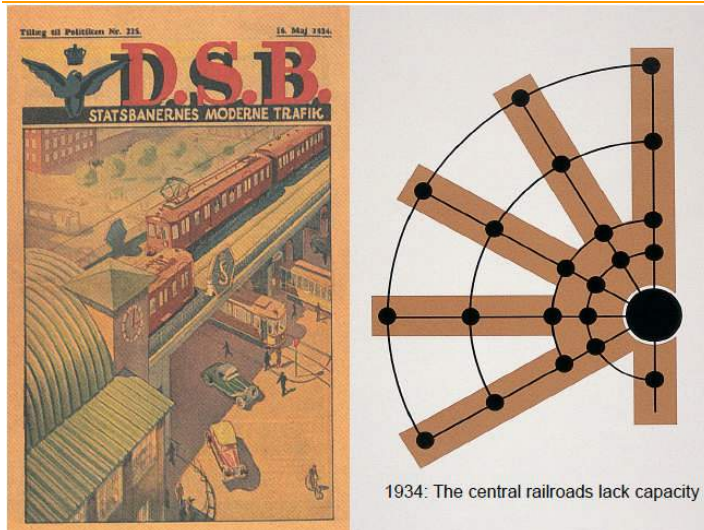
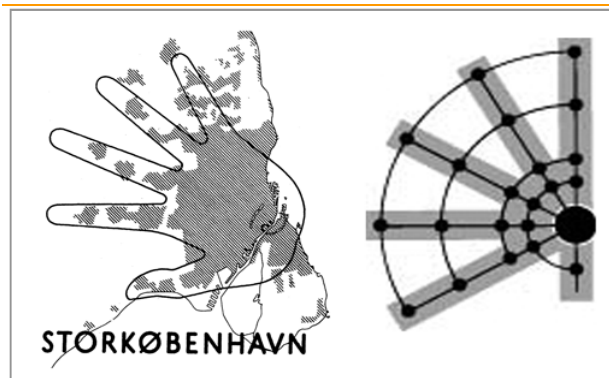


Figure 3b. The Finger Plan 1947's principles



Source: Fingerplan

4.1.2 Accounting for spatial differentiation in the region: the Finger Plan's paradoxical legacy

At the end of WW II and the occupation period, the city relied upon a decent network of public transport, including tramways, buses and regional trains. Cycling and walking were considered the most commonly used means of transport in a context in which almost two-thirds of the inhabitants of the metropolitan area lived in central Copenhagen and Frederiksberg. Car ownership remained marginal. This situation evolved rapidly in a context of urban and economic growth and justified launching the 1947 Finger plan as part of the National growth strategy⁴⁷. It is considered the first attempt at designing and implementing spatial planning objectives through

⁴⁷ See Section 3.3

regional cooperation. Its main goal was to boost and contain urban growth in the capital-city region through spatial planning tools as well as capacity investments in housing and transport. Urban development was to be concentrated alongside five major transport axes (fingers), which drew from the pre-war layout of the S-train network. Open spaces in between were to be preserved (green wedges). In the meantime, the city of Copenhagen represented the undisputed centre of the capital-city region and the heart of the future one million-large metropolis (palm).

The Finger plan exerted a long-term impact on subsequent plans, strategies and infrastructure development projects in the Copenhagen region. Its implementation drew on state-led transport investments and policies in order to develop both rail and road infrastructures. In the original plan, fast, cheap public transport networks were to ensure rapid connections between the City of Copenhagen and the suburbs. All five fingers combined a railway line (main railway or S-train) and a major road (mostly motorways) in order to ensure rapid-transit connection with the city of Copenhagen. In Copenhagen, growing urban transport demand was mainly accommodated by developing S-train and road networks. By contrast, the areas between traffic axes were preserved as open spaces (green wedges).

Making the Danish dream come true

Nevertheless, as the Danish economy underwent a rapid growth, the Finger Plan only had a limited effect on urbanization dynamics. In the two decades that followed its introduction, the Copenhagen region witnessed a growing differentiation between developments taking place in the city and those taking place in the suburbs. The lack of modern housing in the inner-city area fuelled the flow of departures towards the suburbs, where people who could afford a car and a single house were settling *en masse*, thus leaving behind lower-income social groups who could only afford cheaper modes of transport. In the meantime, population growth and transport demand in the suburbs led to a dramatic expansion of car ownership and traffic. Due to the city - and its inhabitants' - poor economic and fiscal conditions, it was unable to prevent the departure of its residents nor was it able to mobilize sufficient resources in order to influence policy developments outside its borders.

In their attempt to make the new "Danish dream" come true, national political elites also contributed to promoting a way of living in which single-family houses were inextricably linked to car ownership. As a result, suburbanisation processes cannot only be understood as the result of individual choices and lifestyles - preference for living in the suburbs. This growing disconnect between urbanization dynamics in the city and in the region also results from planning choices and policy objectives. They are first and foremost strongly related to the choices made by public authorities across levels of government to pursue their main interest – attract wealthy social groups, promote growth in the region, etc. – and their ability to make these choices material. While local (municipal and regional) policies aimed at guiding urban expansion – or in some cases, at following unplanned developments – national policies sought to increase accessibility to and from the capital-city region by developing a major national hub. Growing transport demand justified the rapid development of large motorways alongside existing railway axis and as part of the Finger Plan's implementation.

The car-oriented model as an unexpected outcome of the Finger Plan?

Although seeking to better integrated transport and spatial planning, the Finger Plan's legacy is critically addressed as a possible driver for the shift towards the car-oriented model and policies. Several explanations were mentioned in the literature and interviews in order to account for this paradox.

First, the Finger Plan was only published as a report and was in no way legally binding.

Nevertheless, it did remain a major reference in subsequent policy and planning documents across levels of government, which would tend to confirm some level of commitment across stakeholders to its core principles. Its role as a major reference across levels of government and across time appears to be connected with its core principles' ambiguity. As stated by one of our interviewees in order to underline the Finger Plan's ambiguous legacy, what had been designed as a public transport development plan also could be considered a road development plan: *"The Finger Plan 1947 can be considered as a good example of the state of mind after World War II: that plan was both a car plan and a plan for public transport. As people moved out to the suburbs, the Danish state built the S-trains. There were longer and longer journeys as people were moving out and the S-trains helped reduce these journeys"* (CREATE workshop, February 2016). More precisely, it offered a large room for manoeuvre for stakeholders to redefine and reinterpret these policy objectives as they saw fit as long as they committed to the principle of integrated spatial planning. Its implementation was guided by different

understandings of its core principles and different visions about the region's future. In the City of Copenhagen, the so-called "centred growth approach" prevailed (Valdemarra Pineda, Vogel, 2014). In the region however, the Finger Plan's implementation led to a *de facto* multi-polar regional development, in which the City of Copenhagen was considered as one of regional centres with no particular relevance in terms of infrastructure developments and priorities.

Second, **the focus on roads was coherent with the national policy agenda in spatial planning and transport.** A new generation of traffic engineers emerged as part of the training programmes provided at the Technical University of Denmark (DTU). It had been created in 1933, and directly contributed, through its research and education activities, to the diffusion of traffic planning ideas and models that drew on a functionalist approach to city planning. This approach to city planning and urban development also received strong political support from local political elites in Copenhagen, and more specifically from the Social Democratic Party and its main leaders. The creation of DTU played an influential and strategic role in shaping representations about spatial and transport planning among generations of policy-makers. The development of traffic planning as an autonomous area of knowledge and expertise also contributed to further demarcating transport and traffic planning administrations from urban planning departments. More generally it was conducive to increased autonomy of traffic planning departments within the politico-administrative system. In the case of traffic planning in Copenhagen, responsibilities were split between two Magistrate departments (see above). The diffusion of such expert knowledge and planning models account for the fact that, until the late 1960s, urban and transport planners, policy makers and politicians from across levels of government were first and foremost inspired by the car-oriented city model

In the City of Copenhagen, there was either no – or only little – opposition to the private car. **In this regard, findings from WP4 shed new light on the reasons why car ownership remained low within the city.** As explained during the Copenhagen WP4 workshop (February 2016): *"Everybody was convinced that a car city should be developed, with more roads. There were plans for huge motorway systems, which would give access to towers and offices. At that time, there was low car traffic. Nobody could imagine how fast the car traffic would be developing. It overtook the planners' imagination"*. A general plan for the city's development was launched in 1954. Acknowledging the rapid social and economic transformations underway, it suggested developing a broad network of primary roads with connections to the 'City fingers'. These roads were primarily meant as a way to accommodate car traffic and service new urban development areas in the outer districts of Copenhagen, where new building complexes were built in order to accommodate the housing demand. Yet it was soon considered insufficient and the original network of primary roads was redesigned into a highway network, according to a model that was directly inspired from the United States.

Third, and in addition to professional knowledge and dominant urban planning references and models, **some institutional and legal factors can be highlighted** in order to account for the Finger Plan's ambiguous outcomes, among which competing municipal strategies and national infrastructure-led policies in a context of economic growth. In the absence of a joint planning authority, competing municipal strategies fuelled suburbanization processes and supported the aspirations of wealthier income groups for one-family dwellings and access to green spaces. Local governments were able to draw on a number of policy tools and resources in order to attract them. This was achieved through land use plans, in order to open the development of agriculture land in order to influence the housing market. This was also achieved through aggressive tax competition strategies: in a context in which municipalities directly collect income taxes, attracting high income taxpayers held a clear advantage⁴⁸.

The dominant role of the car-oriented city model can be observed by examining transport policy objectives and measures.

4.1.3 Putting the car-oriented city model into practice: policy objectives and measures

To some extent, the diffusion of the car-oriented planning model is strongly related to evolving transport policy preferences at national level. Central government intervened directly in transport planning and

⁴⁸ "At that time, you found municipalities trying to lower income taxes in order to attract taxpayers. There was something like a race to the bottom" (Copenhagen workshop, February 2016).

infrastructure development in central Copenhagen by **setting policy priorities, preferred policy solutions and the allocation of capital investment.**

The priority given to infrastructure-led transport policy initiatives

This was first achieved as part of the 1962 National transport strategy. Its main rationale was to develop **a national arterial railway and motorway network (the so-called Big H)**, in order to increase the connections to and from Denmark that is from Nordic countries and Mainland Europe, as well as to and from Copenhagen, in that case Mainland Denmark. In addition, national legislation on passenger transport laid down the main principals and rules for the provision of transport services. As road transport became more prominent, investments in railways and resources available for alternative transport modes were constantly reduced up until the early 2000s. This shift in policy priorities also contributed to drastically reduce funding opportunities for alternative transport modes at regional and local level, all the more so since central government was considered the main source of funding in transport infrastructure development across the country until the 1970 administrative reform. Together, these choices account for the weak role played by public transport in the Copenhagen transport system until the recent period.

During this phase, **two main types of transport policies were developed in the region under the state's leadership, with the support of municipal authorities:** first, infrastructure-led policies aiming at further developing major transport axes in the region through railways and roads; second, addressing urban transport demand within Central Copenhagen by developing the S-train and the road networks. This strategy contributed to further deepen above-mentioned highly differentiated urbanization dynamics. The largest share of national public investments in regional and local transport infrastructures and policies benefited the inner and outer suburbs rather than the city of Copenhagen. Infrastructure-led urban expansion and multi-polar spatial planning was justified, at national level, in order to prevent urban sprawl in the region. National capacity investments in railways were concentrated in developing the S-train network, with an additional line built during this time period as well as several extensions of existing lines in order to reach more distant suburbs. In a context of rising transport demand, continued urban expansion and growing car ownership in the suburbs justified the rapid development of motorways alongside rapid transit corridors.

The lack of radial connections between major corridors together with low-density urban development contributed to increasing car dependency and justified the development of outer ring roads under the leadership of the National Road Directorate. In this context, road infrastructures were planned alongside the main regional railway axes and emerged as the new regional structure's skeleton. In practice, these policy preferences and choices in capacity investments led to favouring densification strategies and the "compact city model" close to regional train stations but outside the city of Copenhagen. This was particularly the case for the development of commercial spaces and offices. Public services, other facilities and, more importantly, workplaces, were increasingly located in the suburbs, alongside major transport corridors and located in a number of poles. Moreover, outward urban expansion was also considered cheaper – and easier to pursue – as it required lower infrastructure costs and less constraints than in a dense urban context. From the political point of view, this approach favoured wealthier constituencies outside the city and fuelled suburbanization processes.

Strengthening Copenhagen's role and function as the main national transport hub

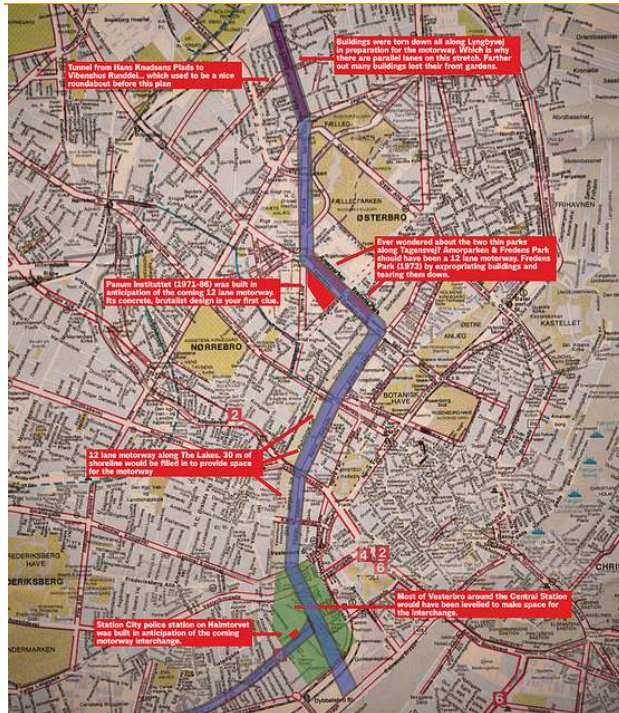
The distribution of capacity investments in transport was, in this respect, consistent with the state's and the national elites' approach to the role and function of the City of Copenhagen as the main national transport hub rather than a place in itself⁴⁹. Following the opening of the first Danish motorway "Hørsholmvejen" in 1956, which went up through the northern Copenhagen area, **the development of a network of primary roads** emerged as a preferred policy solution to growing traffic demand and car ownership in the Greater Copenhagen area. This large motorway development plan also included new expressways that were to cut through the City of Copenhagen. It was designed by the National Road Directorate, with the support of pro-roads interests within the state administration, political parties and economic groups, represented and the Danish Road Council.

Its planning was also done in close cooperation with and the support from the city of Copenhagen **as both a transport planning programme and a large-scale urban redevelopment programme.** The

⁴⁹ Interview National Road Directorate, February 2016.

development of highways justified the complete transformation of central Copenhagen, including a systematic demolition plan that would make room for new motorways, interchanges and junctions. A corresponding widespread urban renewal programme was developed, such as the City Plan Vest in the Vesterbro district⁵⁰, including the demolition of apartment buildings dating back to the 19th century in old archetypical working-class districts.

Picture 1a. Søringen - The Lake Ring (1964)



Source: © Copenhagenize

Picture 1b. The half-finished Bispeengbuén express way



Source : Stadsingeniørens direktorat, Modernissimo Blogpost, April 2015.

In addition, existing public transport networks and services – buses and trams – were reduced. Tram lines were in operation till 1972 but only a minimum level of maintenance was ensured after WWII and the dismantling of the tram network was planned by the City of Copenhagen from 1962 onwards and carried out within a decade. This choice was justified in the name of the transport policy developments taking place in other large European cities at that time, and in order to increase road space capacity. In the absence of segregated tram lines, safety issues justified replacing tram systems by bus systems. In a context of growing financial constraints, only some limited funding could be made available for public transport and in a context in which state funding prioritized regional trains in the suburbs or motorways, the proposed metro system was abandoned in 1965, due to the lack of consensus between the municipality of Copenhagen and the state about funding.

⁵⁰ This followed the example set by developments in Stockholm (Norrmalm area).

Accounting for low levels of implementation for Stage 1 policies in Copenhagen

In spite of the large support from political elites in favour of these infrastructure-led policies at both National and Local levels, only a very limited number of infrastructures were effectively built in the city of Copenhagen during this sequence – mainly due to the city's lack of financial autonomy. In addition, the level of car ownership and use remained low in comparison with the changes underway in the suburbs and in other European cities. During those years, the city faced a number of challenges, summarized as follow by Andersen and Winther (2010): *“de-industrialisation, high unemployment rates, strong segregation, polarization and poverty, job losses, loss of high-income families, an ageing population, a rise in the number of students and low-income singles, high welfare costs and cheap but dated housing stock”*. Only a small minority of Copenhagen residents could afford to buy and own a car, due to the introduction of high level of taxes on car ownership and use at the national level⁵¹. Following the 1970 reform on decentralized governance, state funding came to an end and municipalities became increasingly dependent on tax incomes. In a context of profound financial crisis, the City of Copenhagen was not able to pursue this project on its own due to its financial constraints⁵². In this context, unequal access to car ownership among individuals and unequal ability to fund and develop road infrastructure in the case of local authorities were the main factors prevented the private car's rapid development in the City of Copenhagen. Successive mayors and urban elites had little opportunity to plan and develop new infrastructures, and mostly focused on managing decline – a tendency that lasted until the early 1990s.

Together, these factors account for cheap and/or inherited transport modes being preferred – buses over trams, bicycles over cars, walking over all other modes etc. Nevertheless, in a context in which policy-makers and transport planners in Copenhagen remained primarily influenced by the car-oriented city model, this should rather be considered as a default choice rather than a deliberate wish to maintain alternatives to car transport. This is reflected in the selection of concrete policy measures. Traffic regulation measures were considered particularly instrumental due to their limited costs and their ability to make more room available for car traffic. Previous plans aiming at dismantling or reducing public transport networks were accelerated, as observed in the case of the tramway network. Similarly, due to the lack of financial resources, the large and dense pre-existing network of bike lanes was not entirely dismantled, only gradually reduced throughout the 1960s: *“we were lucky. We did not remove the cycle tracks, but we shortened them”* (CREATE workshop, February 2016). This contributed to maintaining the biking tradition, something that turns out to be crucial for the next periods (Interview cycling expert, op.cit.). Finally, the urban structure in the densest part of the inner city area also exerted a third type of constraint on the development of additional road capacity. Preparations for the Copenhagen 800 years' jubilee in 1967 justified urban renewal programmes in the core inner city centre. Parts of the inner-city road network were pedestrianized in order to create a car-free shopping district around “Strøget”, a major commercial street, in 1962. At first, these measures raised the local population's scepticism⁵³, but in view of its success, local authorities slowly began increasing the number of streets and other public spaces (e.g. parking areas) to be pedestrianized.

In addition to financial constraints, urban authorities also faced massive demonstrations against road infrastructure projects in the city. This was the case of the Søringen project or lake ring project, a north-south urban motorway that was to cut through the city. Only some segments of it were developed, such as the Bispeengbuen, which opened in 1972. This 6-lanes express way that was built through a densely populated residential area on the border between the municipalities of Copenhagen and Frederiksberg. Following the local housing associations' demands, it was planned on a bridge in order not to cut through the area. Nevertheless, this infrastructure project launched massive protest from local residents, opposition from the local media as well as the mobilization of the students and the environmental movements (see picture 2). Starting in 1968, these protests reached their peak between 1970 and 1972, after state funding came to an end. While it focused the Bispeengbuen segment at first, it rapidly expanded towards the entire Lake ring project, which would have transformed the central lakes area into a network of highways. As explained during the Copenhagen WP4 workshop: *“Things started to change in April 1968. People were starting to oppose plans for huge motorways. The city was supposed to be crossed by motorways. People started to wonder if this was a good idea. The front-page*

⁵¹ A registration tax and a weight-based tax had been introduced in 1910 in order to ensure that vehicle owners contributed to roads construction and maintenance.

⁵² A complex system of compensation was introduced between the City of Copenhagen and municipalities in the suburbs, to no effect in a context of economic recession.

⁵³ Little explanation was given in order to account for such reactions, apart from cultural factors, as expressed by Gehl and Gemzøe (1984): *“Danes are not Italians, the street will be empty if we will transform it into a pedestrian street”*.

of the biggest paper in Copenhagen put in question the idea of the motorways". The plans for a coherent network of highways was subsequently put on hold in 1972 and officially abandoned in the 1989 municipal plan.

Picture 2. Opposition to the Lake Ring in "Politiken", the leading local newspaper.



Source: Archives Politiken.

4.1.4 Concluding remarks, Phase 1

Several conclusions can be drawn from the analysis of transport policy developments in the Copenhagen region during this 1st phase. First, **the car-oriented city model emerged as a major reference for policy makers, planners and politicians across levels of government**. While the principles laid down in the Finger Plan emphasised the need for integrated spatial and transport planning, it did not prevent the road network's dominant role in shaping urban growth. Such policy preferences are particularly prominent in national policy objectives and initiatives: major rapid transit infrastructures – railways and motorways – are planned throughout the region, according to the principles laid out in the Finger Plan and the Big H strategy. This is done with the support of municipalities in the region and private economic groups. Successive attempts to introduce a joint planning authority at regional or metropolitan level failed due to the municipalities' wish to safeguard their autonomy and to the state's own strategy in the region.

Second, in the absence of a regional planning authority and due to the state's ambiguous approach towards the role and function of the city of Copenhagen, **regional expansion is increasingly shaped by spatial differentiation mechanisms** between, on the one hand, an impoverished city centre and on the other hand, booming suburbs. While demographic, socio-economic and cultural factors contributed to shaping individual behaviours and preferences, public authorities did contribute to accelerating suburbanization processes through their respective housing, economic growth and transport policies.

Third, when considering transport policy developments as such, **three main observations can be drawn from the changes taking place during this sequence**. In the absence of alternative transport modes – either by choice or by lack of financial means – pro-car policies and capacity investments became dominant across the region in terms of policy objectives, resources and measures. Investments in public transport alternatives decreased, the city of Copenhagen's tram network was dismantled, and whenever possible, additional road space was allocated to car traffic across networks (primary, secondary) with some dismantling of bicycle lanes. Some exceptions were observed, mainly in the city of Copenhagen, due to financial constraints and to a lesser extent, to mobilizations, with a few pedestrianisation initiatives and lower car ownership and use. At regional level, continued capacity investments were made in the S-trains network.

4.2 Transport planning in a context of spatially differentiated growth (Phase 2, 1972-1991)

This section examines transport policy developments during the 1972-1991 time period. It argues that they are very much part of the dynamics initiated during the previous period apart from the changes observed in the city of Copenhagen. It provides some explanation for the introduction of a myriad of small-scale initiatives across levels of government aimed at mitigating the impact of traffic growth (Stage 2 policies), among which were attempts at strengthening joint transport planning measures at metropolitan level, capacity investments in public transport infrastructures and traffic mitigation measures. It also discusses the role of strong differentiation

mechanisms in shaping transport policy developments in two different ways. First, traffic mitigation measures are mainly concentrated in the city of Copenhagen, while the development of the road network continued in the suburbs. Furthermore, 'Planning for life' type of policies (Stage 3) are also being developed on a small-scale basis in the urban core. Second, inter-institutional competition to attract wealthier social groups and families (local authorities) and promote regional growth (state) continues shaping the largest share of public investments and strategies in the region while at the same time, the previously mentioned the social, economic and political disconnect between the city of Copenhagen and the suburbs was exacerbated.

4.2.1 Making transport your own: planning for people as an alternative to car use

As car was growing to become a dominant transport mode in the region, the city of Copenhagen was most affected by its negative externalities due, on the one hand, to daily commuting and, on the other hand, due to its population impoverishment. This offered some opportunities to examine and develop alternative policy solutions.

Exacerbated discontinuities in car use between the city and the region

In 1970, car traffic in Copenhagen reached a level that would be maintained throughout the next 25 years. This stagnation in car traffic is mainly explained by continued economic recession and fiscal debt. The urban population continued to decrease, many workplaces moved to the suburbs. Levels of poverty were not reduced between 1970 and 1990, with the most vulnerable population being found among elderly people and the working class. Only those who could not afford to move out - senior citizens, low-income groups – remained in the city, thus resulting into low fiscal revenues and the growing impoverishment of the city of Copenhagen (Andersen, Jørgensen, 1995). The city heavily indebted itself to the government in order to close its budget deficit. In this context, only a small share of Copenhagen residents had access to car ownership and use⁵⁴. Also, there was a growing concern among the local population about the negative impacts of car traffic, and more specifically safety issues. In 1970, the number of pedestrian and cyclists' fatalities amounted to 120 per year. Moreover, noise pollution in the vicinity of large traffic arteries was increasingly denounced in view of their negative impacts on health and air pollution.

A last determining factor relates to the worsening of central-local relations during this period. In a context of deep economic recession, the focus of national spatial policy shifted from Copenhagen towards other parts of the country in support of a national economic development strategy. From 1970 onwards, and until the early 1990s, very few investments were made in Copenhagen in any type of transport policies, apart from minor upgrades in existing networks. The stagnation of car use in Copenhagen also justified the end of the state's investments in the road networks. In the meantime, high levels of investments in the motorway, and to some extent in the railway networks, were maintained in the surrounding municipalities. In a context in which incoming traffic from the region was growing, this decision contributed to the worsening of central-local relations and accelerated the search for alternative transport policy measures. Political discourses and the local media echoed this resentment by highlighting strong out-migration flows of wealthier families towards the suburbs while the city of Copenhagen was left with population decrease, economic recession and a near bankruptcy situation (Naess et al., 2009).

Opening the scope for alternative transport policy measures: political and social mobilizations

Such growing political and social debates regarding the distribution of policy resources led to some opportunities for a reshuffling of policy priorities, and to a growing competition between transport modes in order to attract the little resources that were available for transport policy initiatives.

This lack of funding implied that the city of Copenhagen was unable to develop big projects and infrastructure-led policies in transport in order to boost its economy, attract new investments and inhabitants. In this context, **the preference given at city level for road investments over any other transport modes was increasingly questioned** by a new generation of technicians and policy makers, socialist and green politicians, as well as civil society organizations that had emerged during the protest against the Lake ring project. Albeit with

⁵⁴ See section 3 and D3.2 Copenhagen report.

a strong level of political continuity in the municipal majority, some discussions were underway, between and within left wing political parties regarding transport. A traditional approach was very much influenced by the modern city planning ideals, including access to individual cars and good quality housing. Yet socioeconomic changes were slowly transforming voters' preferences, especially among younger generations.

Moreover, as car growth was generating an increasing number of negative externalities (traffic congestion, noise, pollution, safety issues for other road users, etc.), **it became a source of complaint and protest among local residents.** The most vulnerable road users (pedestrians, cyclists) saw motorized vehicles as a source of danger. In a context in which a large share of residents could not afford to own a car, incoming traffic from the region was increasingly targeted as a sign of strong urban identity as opposed to that of the suburbs. Yet apart from the above-mentioned protest against the Lake ring, these growing demands did not accelerate the emergence of anti-road or anti-car movements, as was the case in London for example. By contrast to the situation observed in other EU cities at that time, it led to original forms of social mobilizations such as the "White crosses" demonstrations (see Picture 3), which denounced the number of cyclists killed every year in Denmark. In Copenhagen, these demonstrations echoed the local population's growing discontent with commuting traffic from the region and with the priority given to road investment at the city level.

Picture 3. The white crosses initiative.



Source: © Copenhagenize

Such demonstrations remained occasional and their impact and strong visibility can only be explained in a context of low mobilisation and overall preference for non-disruptive action repertoires. **Moreover, they to prioritize cultural and social issues over political demands.** According to a former prominent cycling activist, this situation is representative of preferred action repertoire in the Danish context: *"this is linked to the so called 'Danish model', whatever it means. In Denmark, we consider ourselves as part of the system. You don't see 'the system' as being something external so you constantly need to think about how to act from within the system"* (Interview cycling activist, February 2016). This specific form of social mobilization should also be understood in relationship with the ambiguous attitude of the Social Democratic Party vis-à-vis transport issues and car traffic throughout this time period. Its political hegemony was undisputed, mainly due to the socioeconomic changes underway at regional level and to central-local relations and to the economic and financial context⁵⁵. But on the other hand, **this also contributed to channelling internal opposition and minimising social and political demands for alternative policies and models.** Indeed, traffic mitigation initiatives were not valued in political discourses nor were they officially developed or recognized as part of a coherent strategy against the negative externalities of car growth until the later part of the second stage. In those cases in which they arouse some controversy, these measures would be removed as observed in the case of cycling (see below) and pedestrianisation initiatives.

⁵⁵ "Socioeconomic changes also explain why there has been a stable Social Democratic Party leadership in Copenhagen. Those who stayed were, traditionally, social-democratic voters" (CREATE workshop, February 2016).

Increasing road safety through mitigation policies (Stage 2)

Together, these within-city sources of pressure led to the development of car traffic mitigation policies at the local level and also exerted increased pressure on national policies to take into account **issues related to safety on roads**: compulsory seat belts, speed limits and traffic calming measures, increased traffic regulation through additional traffic signals, traffic concentration on designated roads as opposed to traffic calming measures on smaller roads. While measures regarding traffic speed were introduced at national level, others such as the construction of new cycling lanes were introduced at municipal level. Together, these initiatives resulted into a significant decrease of road fatalities, i.e., a reduction of 90 per cent between 1970 and 1995.

Moreover, the city was able to strongly monitor these traffic calming measures' implementation, due to the division of tasks within the Danish administrative system: as national highways stopped at the city borders and transformed into traditional roads, local authorities were able to monitor the implementation and enforcement of traffic regulation within its borders. First it sought to **regulate the amount of car traffic crossing the city borders through "green light" traffic management and traffic calming measures**. These measures were mainly planned on a small-scale due to financial and political reasons and sought to better channel incoming car traffic from the region onto the city's road network. On the main road axes, which attracted the largest share of policy attention and resources available at city level, this was achieved by increasing road capacity to the detriment of (existing) bike lanes and public transport. The final dismantling of the tram network was particularly instrumental in this respect. Outside what was considered the primary urban road network, speed reduction measures were introduced and a larger scope for experimenting with traffic mitigation initiatives was possible, especially in those areas in which there were some supporting social demands. **Towards the end of this second phase, traffic mitigation initiatives developed into a more comprehensive strategy** and an active car reduction policy including parking management and traffic light control and coordination. The strategic use of innovative technologies and practices was justified by the need to reduce traffic congestion and to fluidize traffic in Central Copenhagen. As a result, average speed in the city at rush hour was maintained at 30 km/h, which is relatively high compared to other major cities (see D3.2 report).

4.2.2 Reclaiming road space for all users through urban design and politicization (Stage 3)

In addition to traffic mitigation initiatives, two other types of transport policy measures were developed in Copenhagen during the second phase. The first one stemmed outside the transport sector and is strongly connected with the work of Jan Gehl. The second one is linked with the rapid development of cycling. Both can be considered as belonging to 'Planning for city life policies' (Stage 3) and are, to this date, **considered major innovations worldwide and a distinctive feature of transport policy developments in Copenhagen**.

Urban planning and design: transforming Jan Gehl's ideas into practice

While car oriented city planning still dominated national transport policies, alternative models were being developed among urban planners and were developed in the ordinary city, outside the primary road network. In Copenhagen, J. Gehl – a trained architect and urban designer – was particularly influential in promoting a shift towards a city-planning model conducive to increased quality of life. In the book *Life between buildings*, published in 1971, he advocated a strategy grounded in urban design and the transformation of public spaces⁵⁶. Unlike the projects inspired by large urban development projects abroad, such as the City Plan Vest in the Vesterbro district, this approach was not conducive to grand gestures and iconic projects but **emphasized the need to map out existing public spaces and introduce incremental changes through "soft" interventions**. In those days, this approach was not conducive to a direct and obvious link to alternative transport policy initiative. Yet by making a number of policy areas more urban, and advocating the diffusion of urban design initiatives across policy areas, it opened a precedent to what was later developed as the integrated transport approach. It also contributed to an openly critical view on car traffic and use in public discourses, by addressing them as a driver for suburbanization processes and unplanned urban expansion - "*It is cars and the availability of cheap gasoline that created the suburban construction period*". Gehl's ideas directly contributed to the emergence of an alternative to the car-oriented city model and justified shifting attention towards alternative transport modes. Instead of maximising

⁵⁶ Jan Gehl's work in urban design and public space has become a major source of inspiration for a number of cities and policy makers worldwide. See below.

available space to the benefit of car traffic, he advocated transforming them into public spaces that could benefit a large diversity of users.

This changed perspective on the built environment and the role of city – public life instead of a being a major transport hub – **profoundly transformed the way of conceiving urban planning in Copenhagen and with that, the role of transport.** The diffusion of Gehl's ideas in Copenhagen proved particularly instrumental to urban planners – as opposed to traffic planners – and to those departments in charge of urban renewal that were left with little resources. Unlike public transport and road planning, the municipality of Copenhagen did not need to seek financial and political support from other public authorities in order to develop urban design initiatives. Urban design initiatives also received the support from a new generation of political elites from the Social Democratic Party⁵⁷, the socio-liberals and the greens, which traditionally dominated the 5th department (tram mayor or traffic mayor, later environmental mayor⁵⁸) as opposed to the so called “technical” resorts. **It provided them with an alternative to car-oriented planning, and in view of the lower costs attached to such small-scale initiatives, to public transport.** This proved particularly instrumental in a city in which little resources were available and space was vacant due to out-migration flows. Moreover, as issues related to safety on roads and incoming traffic flows from the region were increasingly politicized, urban design initiatives were considered less controversial and as such, the focus of less attention. In this regard also, this incremental process of change through the strategic use of urban design initiatives became politically feasible due low levels of car ownership among residents and to the lack of funding available for larger scale transport initiatives.

Urban planners began to systematically differentiating between road types in order to identify possible open spaces that could be reclaimed for “city life”, including a large variety of potential users. In order to avoid a major controversy over the allocation of urban space, and the dismantling of new developments, they started with the outer districts of Copenhagen instead of concentrating on the historic city centre. In these residential areas, local streets that were previously classified as “urban streets” in speed limit of 50 km/h applied were gradually re-classified as “calming streets” with a speed limit of 30 km/h, including living areas and play grounds with a speed limit of 15 km/h. The attenuation of speed contributed to the concentration of car traffic on the largest roads where traffic light management applied. Urban design initiatives also led to enhancing the quality of urban spaces across the city, and as such, to making cycling (and to a lesser extent, walking) increasingly comfortable and worthwhile using as a reliable transport mode. Existing pedestrian zones in the historic city-centre were continuously extended.

In addition, this approach also had **an impact on the availability of parking spaces in central Copenhagen.** Open spaces that lay “between buildings” were redesigned as public spaces instead of parking lots. This was increasingly planned in combination with parking management initiatives. The first parking meters were introduced in the inner parts of the city in 1965 and later evolved towards a parking management system that was introduced in 1990. Between 1970 and 1995, the number of parking spaces was drastically reduced: while some 100.000 employments were located in the city centre, only 15.000 all-day parking spaces were available for employees. Between 1972 and 1991, the number and the scale of urban design initiatives increased, so much so that by the end of the second phase, a reversal had taken place in the hierarchy established between different uses of public space, thus opening the way for a reshuffling of policy priorities.

The emergence of cycling as a transport mode

A second major change that took place during this time period concerned the growing role of cycling as a transport mode as opposed to being considered a leisure activity. There again, it went largely unnoticed at first and spontaneously emerged as a transport mode in a context in which little alternatives were available to Copenhageners. *“At the time, cycling was not discussed but everyone bought a good bicycle”* (interview with cycling expert, February 2016). Yet during this second sequence, it shifted from being considered a default choice, to being an alternative transport solution more compatible with city life.

This shift resulted from a combination of factors, including the fact that it took place in which the already widespread use of cycling. Even though a diffuse dismantling of cycling lanes had been taking place during the previous phase, the city did not possess the means to pursue this policy on a larger scale. In this context, it relied

⁵⁷ Including Jens Kramer Mikkelsen, who was later elected as Lord Mayor (see below)

⁵⁸ See section 3

upon a well-developed network of cycling lanes. As observed during the Copenhagen workshop: *“The amount of bikes remained high compared to other cities, and increased since the 1970s. In other cities, the tradition for biking was over, but not in Copenhagen. Bike lanes were built in Copenhagen since 1909. The continued tradition for biking helped the city. Indeed, the bicycles lanes were there in the 1970s”*. Nevertheless, this view was counterbalanced during the discussion by other participants to the workshop: *“there were bike lanes, but in no way comparable to the situation we enjoy nowadays. During the 1980s, there were small bicycle lanes. Shopkeepers said that if the parking areas in front of the shops were removed, customers would not come any longer. The political parties listened to their complaints and bike lanes were kept as narrow as possible”*.

In addition, **demonstrations against the Lake ring project had offered increasing opportunities for advocacy groups to promote cycling as an advantageous transport mode**, e.g., low cost, flexible, reliable and faster and healthier. Stemming mainly from the environmental movement, pro-cycling groups strengthened and developed additional capabilities to organize major social events. Similar to the choices made by the organizers of the white cross demonstrations, these events were primarily meant as an opportunity to make a specific lifestyle visible into the public space without necessarily linking it with specific political demands. This was summarized as follows in an interview: *“A lot of things started to happen. Cycling federations made huge demonstrations in town. Cycling was simply the way of living and transporting yourself. They didn’t dare writing that cycling would be more significant in the future. It was part of the continuous movement of 1968: if you were a left-wing person, you were cycling”* (interview cycling activist, February 2016). Yet the strengthening and professionalization of cycling federations, in combination with the development of the Green party, also led to **their growing capacity to articulate policy solutions and lobby public authorities across levels of government**. This was first observed in policy discourses and the emergence of new policy frames: cycling was increasingly promoted as a transport mode, as opposed to being restricted to leisure activities. Second, it led to the introduction of cycling policies: in Copenhagen, the first Bicycle plan was adopted in 1981, and at the National level, the 1983 Road Traffic Act formally recognized the need to take into consideration the growing diversity of road users in planning and managing road networks. In spite of such institutional recognition, a number of interviewees highlighted the symbolic dimension of such policy documents in the absence of resources and implementation tools being made available. No coherent implementation strategy was developed at national level, and in this context, the development of pro-cycling initiatives remained context-dependent and small-scale. In the case of Copenhagen, a comprehensive implementation strategy was only developed some 15 years later⁵⁹.

As a result, the use of cycling as a transport mode increased continuously in Copenhagen throughout this period. People who worked and lived in Copenhagen were increasingly travelling by bike, while those commuting on a daily basis from the suburbs switched to the S-train and regional train networks. While cycling had often been associated with poverty and pre-war mobility, it now embodied urban renewal and quality of life. Increasing demand for cycling also justified continued incremental improvements to the network, including in shopping streets in the historic city centre where bicycle parking spaces were gradually introduced by reducing car parking. There again, this was achieved gradually due to the mobilization of shop owners and through small-scale experiments. Together, these changes – network expansion, increased safety and streets’ reclassification – explain that bicycle traffic doubled between 1970 and 1995.

Nevertheless, the role of urban design and cycling initiatives during this second sequence should not be overestimated. To some observers, it is first and foremost explained by a combination between low capacity investments and the residents’ average income. This was summarized as follows during the Copenhagen CREATE workshop (February 2016): *“when the central government decided to stop financing road infrastructure in Copenhagen, it was considered as a sort of indifference of the state for the capital’s conditions. Nowadays it is rather considered a providential decision, that prevented Copenhagen to be overwhelmed by cars”*. These initiatives remained small-scale and were mainly achieved on a pragmatic, *ad hoc* basis without being acknowledged in policy objectives. **They did not prevent the largest share of transport policy resources invested in transport at city level still being prioritized for capacity extension on the road network**. As observed by one of our interviewees: *“during this period, the capacity of the road network was increased and street areas were taken-up by cars driven by rich people from the suburbs. So, you could say that we were very tolerant for many years. In the 1970s, we discovered we had accidents, air pollution, noise ... And we didn’t do anything. We mostly accepted the situation”* (Interview cycling activist, op.cit.). Traffic mitigation initiatives were only introduced as a case-by-case reaction to specific salient events, such as car accidents, and to the extent that they remained low visibility and were only introduced to the extent that they relied upon a minimum level of

⁵⁹ See below, section 4.3

policy resources. In addition, the efforts achieved at city level in order to mitigate car traffic were not able to reduce the overall amount of car traffic in the city due to incoming traffic from the outer region.

4.2.3 Institutional fragmentation and inter-organizational competition in public transport

Throughout this period, the share of public transport stagnated. In terms of the distribution of policy resources across transport modes, public transport was enhanced when it did not come into spatial competition with cars. To be sure, some improvements were brought to the bus and the regional train networks, as well as to transport services. The development of bus lanes, in combination with priority signals, contributed to improving bus traffic in the region and in Copenhagen. Capacity investment was made on the S-train networks across the region, including the City of Copenhagen, with the development of new lines and the expansion of existing ones. The last S-Train line was developed southwards between 1972 and 1983 (H, Frederikssund – Osterport) alongside one of the original “fingers”, but no further significant expansion of the network was planned. In Copenhagen, the tramway network was dismantled, and in the region, public investments in roads prevailed over public transport.

Weak levels of inter-institutional cooperation at regional level in combination with the dominant car-oriented policy paradigm at National and local level jointly account for public transport being an underdeveloped transport mode during this second sequence. As the planning and funding of public transport initiatives required some level of coordination at regional level and lobbying capacity at National level, existing mechanisms proved insufficient to overcome conflicting views and interests about spatial planning objectives. From a formal point of view, the principles laid out in the 1947 Finger Plan had been reiterated in subsequent policy documents, including the 1989 Regional Spatial Development Plan. City growth was to be concentrated around existing transport corridors. **Yet in practice, urban planning in the Greater Copenhagen area disregarded this principle.** To be sure, some open country areas have been preserved between the five fingers. But in the absence of strong regional coordination mechanisms, low-density urbanization was conducive to urban sprawl. In addition, the Finger Plan itself appeared somewhat out-dated in the context of the region’s rapid expansion since the post WWII period and underestimated the need to create radial axes and ring roads further out from central Copenhagen. While planning principles were conducive to increased traffic concentration within clearly defined corridors, the effective development of traffic showed increasing demand for more decentralized and dispersed transport services and networks. Within the city of Copenhagen itself, city busses were unable to compete with cycling, especially in the inner-city area, due to traffic speed and aging equipment. As the share of senior citizens and traditional working class was decreasing, younger people and students were not regular public transport users (Illeris, op.cit.).

Institutional and organizational change as an attempt to foster increased integration between transport modes

Faced with the need to effectively regulate urban growth and to take into account the specific needs of the capital-city region, an act was issued by the central government in 1974, giving the Greater Copenhagen Council (HR, *Hovedstadsrådet* or Capital Council) the responsibility for regional planning in the Greater Copenhagen area⁶⁰. Copenhagen Transport (HT) was established by law at the same time by merging twelve mainly public-owned transport companies. As both a transport authority and an operator, it constituted an unprecedented attempt to better integrate public transport services across the capital region. Its funding was based on the regional partners’ tax revenues and therefore detached from service provision.

In this context, **several public transport initiatives were developed.** In 1972, the introduction of the public transport common tickets was considered a major innovation and a decisive step towards increased inter-modality. In 1978, HT took over some responsibility for planning and funding the S-train network, with the direct financial support of central government. The main rationale behind this reform was to concentrate public transport planning across the capital region and to develop a joint tariff structure across networks. Yet the operation of S-trains was still carried out by DSB while HR only covered the expenses and planned new investments. From the passengers’ point of view, this initiative was considered a success, and the number of S-train passengers increased by 50 per cent between 1977 and 1981.

⁶⁰ See section 3.

Yet in terms of governance, this first attempt at better integrating public transport provision in the capital region failed: HR was dismantled in 1989, Copenhagen Transport was dismantled a year later and the responsibility over the S-train network was transferred back to DSB. This first attempt at increasing coordination between public transport networks' coordination at regional level also highlighted strong resistances within DSB against the creation of a single regional transport authority. The three partners – DSB, HR and HT – regularly stumbled against the division of responsibilities and funding. More precisely, **classic blame avoidance strategies were developed** in order to account for this failure: HR was accused of not having sufficiently invested in infrastructure maintenance, while DSB was accused of wanting to secure revenues from increased patronage. Following the dismantling of HT in 1990 - in accordance with the national law (and European legislation) on passenger transport – the operation of a large share of the bus network was transferred to private companies. The abolition of both the Capital council and Copenhagen Transport is also considered **the result of active lobbying at state level** from, on the one hand, local authorities (municipalities and counties) that resented the limitations to their autonomy in planning and developing transport initiatives, and on the other hand, DSB and transport companies. Since 1990 HT has remained the most important operating company, but it was deprived from its powers as transport regulator and now acts independently from the administration. Some years later, in 1995, it became the public transport authority (ATM 2001) with some responsibility on all public transport systems with the exception of S-trains, whose responsibility was transferred back to DSB.

While the absence of a metropolitan transport planning authority is often highlighted as a major barrier to the development of public transport initiatives and capacity investments in the region, the role played by the Capital Council (HT) and Copenhagen Transport (HR) is not considered an experience **that should be reproduced in the absence of a more profound redistribution of powers between levels of government and a clearer transport funding structure**. The establishment of these two organizations was not conducive to a reshuffling of policy priorities in spatial planning and transport policy objectives in the region. It is considered to have had a counter-productive impact on existing public transport network: increased coordination in transport planning at regional level and the creation of both HT and HR was indeed conducive to a loss in municipalities' responsibilities over the planning of the bus network. In this context, their ability to better link, at the local level, public transport planning with urban and commercial developments was weakened and justified the preference given to road investment.

Unlike the situation observed in other cities in CREATE, transport policy developments in the Copenhagen city-region thus highlight the absence of pro-public transport advocates or their ability to cooperate. At city and national level, the growing role of cycling federations also increased competition between transport modes on the political agenda and for the distribution of resources. When compared with road transport and cycling, which both relied upon strongly mobilized, well-organized interest groups; public transport benefited from little support.

4.2.4 Concluding remarks, Phase 2

Transport policy developments during this second sequence are strongly related to regional growth and low-density urban development, which now extend beyond metropolitan boundaries into the wider region. The car is confirmed as a dominant, attractive and almost indisputable mode of transport in the region. This is more particularly the case in those areas located between rapid transit corridors (fingers) as well as in the inner suburbs, where capacity investments underestimated the extent of population growth as well as the magnitude of daily commuting flows to and from the city of Copenhagen. Despite such rapid diffusion and growth, car traffic is increasingly highlighted as a source of negative externalities, e.g., safety issues, noise and congestion, especially in those areas where levels of congestion and traffic flows are densest, that is, the cities of Copenhagen and Frederiksberg, and, to a lesser extent, local authorities located in the inner suburbs.

Regarding the pioneering role of Copenhagen in the development of 'planning for life' policies (Stage 3), the analysis helps to make sense of somewhat contradictory dynamics. To some extent, it confirms the low explanatory role of cultural factors as the main factor explaining its development. Indeed, the public policy perspective highlights the continued dominant role of car use and the prevalence given to car traffic during the entire period. This is nicely expressed in the following quote: *"The only reason we haven't destroyed Copenhagen is because we couldn't afford it, we were lucky we were poor. All the rich people that could have paid for motorways left the city. They moved to other municipalities and the city of Copenhagen was left almost bankrupt"* (Interview with transport expert, February 2016). When considering the dynamics underway in the suburbs and in the city's primary road network, the car-oriented city model remains dominant and further expands. A similar conclusion can be drawn from the developments taking place in public transport, in comparison with other cities in

WP4 where strong public transport advocacy groups emerged during this second stage. Even though some strong cooperation mechanisms were introduced at metropolitan and regional levels, successive attempts to further integrate transport modes and planning failed due the mobilization of local authorities and transport companies.

Yet in Copenhagen, the changes taking place during this second sequence are also characterized by a **large number of small-scale initiatives and highly innovative policy solutions**, which, together, contribute to the city's distinctive features when compared with other cities in Europe at that time. While not necessarily stemming from the transport sector, they are considered instrumental by a wide range of stakeholders – politicians, engineers and planners – in their attempt to challenge dominant representations and interests. These policy initiatives echo the growing concern for car traffic's negative externalities and offer an alternative to reactive, symbolic measures as well as to traffic mitigation initiatives. Unlike the situation observed in other EU cities, where public transport was generally selected as the best possible alternative, policy makers in Copenhagen faced major budgetary constraints as well as a lack of political support in support of capacity investments. By drawing on Gehl's recommendations for city life, these stakeholders made the city their own and contributed to developing new policy frames and practices. The increasing role of urban design initiatives in transport planning eventually led to transforming professional practices from a technical (engineering) to a more integrated (urban) approach, and to the emergence of strong alternatives to motorized transport modes, and more fundamentally, to the car-oriented city model.

Together, these initiatives paved the way for the massive and profound changes that were introduced in a radically different context during the next phase.

4.3 Intensifying traffic mitigation policies in a context of regional growth (Phase 3, 1991-2007)

Following several decades of deep economic recession and conflicting state-local relationships, the new urban growth model that emerged in Copenhagen in the early 1990s contributed to strengthening traffic mitigation strategies. To a large extent, these developments very much followed up on the choices that were made during the second phase. Yet the main difference lies in the introduction of large-scale transport initiatives in public transport and roads, which, together, both strengthened and transformed the city's unique status in the context of the EU's enlargement to the Nordic states. This section mainly addresses the rapid extension of 'Planning for people' (Stage 2) policies in a context of strong regional growth.

First, it argues that the arrival of a new generation of political elites across political parties and levels of government fostered new forms of state-city cooperation. Whereas state policies and investments had been concentrated in the region outside Copenhagen, the redefinition of the Big H strategy led to a number of large state-led infrastructure projects aimed at strengthening Copenhagen as both a hub and a place. Under the leadership of a new, charismatic mayor, and with the support of EU policies and funding, a large urban renewal policy was developed by drawing on the changes taking place in other EU cities, while at the same time contributing to enhancing capabilities. Although from different political majorities – a liberal conservative National government and social-democrat mayor in Copenhagen – a new state-city alliance was developed in support of an urban growth strategy in Copenhagen (Thor Andersen, Winther 2010). Marking a shift away from welfare-oriented policies within the Social Democratic Party, this alliance was to last for more than 20 years.

Second, this altered form of urban governance did not put an end to strong differentiation mechanisms between the city and the region, but led, as argued in this section, to exacerbating them with some major impact on transport policy goals, resources and measures. In a context of strong fragmentation at regional level, the City of Copenhagen drew on its newly gained resources in order to unilaterally develop a comprehensive sustainable urban transport strategy that now included urban public transport initiatives. More precisely, this section accounts for the way through which transport projects and initiatives gained a prominent role in the City of Copenhagen and were designated, in close relationship with housing, a major driver towards urban growth.

4.3.1 Unprecedented state-city cooperation in support of infrastructure-led policies

The most decisive changes observed during this third sequence are linked with political and institutional factors, and more specifically with the shift taking place at state level in preparation for the 1995 EU enlargement. There was a growing concern among political and economic elites that other Scandinavian cities (Stockholm,

Helsinki) would emerge as a strategic hub in the north-European region (Giersig, 2008). In Copenhagen too, a new generation of social democrats strategically used these opportunities in order to promote alternative urban regeneration measures. Together, **external and internal pressures for change fostered a major policy shift**, observed through a change in terms of objectives, resources and measures, as well as the emergence of a new state-city alliance that was to last for some 25 years. Such unprecedented cooperation between the central government and the city of Copenhagen is considered as a pivotal turning point in the city's recent history (Knowles 2002).

Strengthening Copenhagen's European identity

In the late 1980s, prominent economic actors were concerned with the need to ensure the country's role as a gateway towards Northern Europe. In this context, there was a sudden realization that Copenhagen was not acting as a major gateway and to compete with other Nordic cities, due to its disastrous financial situation and to the lack of investments in major infrastructures. The population had been continuously declining since the mid 1950s, and there was a growing disconnect between tax revenues and the growing expenses the city had to face if it were to improve existing infrastructure and develop new networks. The city almost went bankrupt.

Several initiatives emerged at national level in order to develop a new growth strategy for the capital-city region⁶¹. The cognitive change then taking place was summarised in the following way during an interview: *"We started to realize the necessity for a renewed development in 1989. One of the fears was that we only rested on our inner market [i.e., National market, CbA⁶²]. A lot of people realised that Copenhagen was left behind compared to other capital cities in Europe. The comparison with Stockholm was on everyone's mind ... The rest of Denmark also thought it was a pity to let Copenhagen fall down. National policy makers started to realize that if Denmark did not have a competitive capital, we did not have a strong national state"* (Interview state representative in the region, September 2016). Among other initiatives, the report Our Capital – what is to be done? was presented by the Stallknecht Committee, which brought together representatives from central government and prominent economic actors under the initiative of the Finance ministry. As recalled by a former participant to the commission in an interview: *"So in 1989, we had a 20-point report. There were three main fields: infrastructure, culture, and education. ... Danish politicians could say to the world that they were investing in the capital of Denmark. This gave a new growth to the city and to Denmark"* (CREATE workshop, February 2016).

Unlike the situation observed during the first two phases during which the city's main function was to serve as a National hub, Copenhagen was redefined in state policy documents as a European city. This cognitive shift also put an end to 20 years during which no major state investments had been made in the city and its transport infrastructures. Specialized agencies were set up by the Central Government in order to directly and actively pursue policy implementation in close cooperation with the private sector through various forms of public private partnerships. This was justified in order to limit possibilities, in the event of a political change within Parliament, to revert the process (Interview state representative in the region, op.cit.)

The decision to build the Øresund fixed link towards Malmö constitutes a first step towards the European turn in the central government's strategy, and confirmed the strategic role that Copenhagen would play in this process. After 50 years of negotiations, Denmark and Sweden decided in 1991 to build a bridge across the Øresund from Copenhagen to Malmö, which included a 4-lane highway and a 2-tracks railway: construction works started in 1995 and the bridge opened in 2000⁶³. **Social Democratic elites across levels, working in cooperation with their Swedish counterparts**, were instrumental in fostering an agreement within the Danish Parliament and local authorities whose land was to be developed. It was meant to ensure Copenhagen's key role as a gateway towards Nordic countries, and to connect the Swedish Peninsula with the rest of Europe (Omega Centre report, 2014). The Øresund bridge created an opportunity to experiment with the state guarantee model. This includes, on the one hand, the creation of a state-owned company responsible for the planning, design, funding, construction and operation of a given infrastructure project, and on the other hand, this company funding the project through obtaining loans on the international financial markets. While the Danish state provided guarantees for these loans, the company's debt is repaid by infrastructure users. In addition, EU funding and

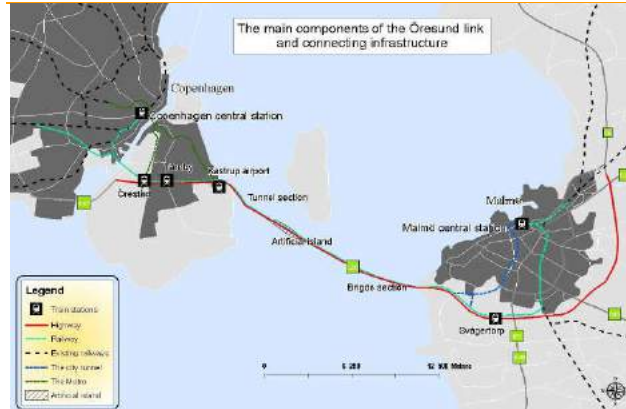
⁶¹ See the report *Hovedstaden – Hvad vil vi med den?* (see Thor Andersen 2002; Majoor, 2008, 122)

⁶² Comment by Authors (CbA).

⁶³ The bridge also includes a data cable and ensures data transmission to and from the Scandinavian Peninsula.

policy resources (e.g., expertise, political resources) were made available as part of successive INTERREG programmes, including some €50 million between 1996 and 2006, as far as infrastructure developments were concerned, and other programmes and funds (URBAN, LIFE, etc.) in order to address more specifically urban renewal policy objectives in both Copenhagen and Malmö (OECD 2009).

Map 5. The main components of the Øresund link and connecting infrastructures



Source: Lantmäteriet, retrieved from OMEGA Centre report, p.11

The construction of the Øresund bridge also had some impact on the state's urban and spatial planning policies in the Copenhagen region. Unlike the situation observed during the past decades, these projects were mainly framed in conjunction with the need to strengthen the city of Copenhagen as a place – and with the direct involvement of the city as a Shareholder and a major stakeholder due to its municipal powers – but with little to no discussion regarding these project's metropolitan or regional significance. This was mainly justified in political discourses due to the strategic dimension of the planned developments and to Copenhagen's critical financial situation. It also resulted from the active lobbying of Copenhagen's political elites.

A new generation of social democrats in Copenhagen

By successfully contributing to framing these large-scale development projects as urban, as opposed to regional and/or national, the Copenhagen's mayor and the Social Democratic Party contributed to the shift observed at national level in spatial planning policies in the city.

Following two decades of within-party discussions, **a new generation of Social Democratic leaders** came to power after the 1989 municipal elections and drew on the experience underway in a number of European cities where urban elites faced similar challenges (Giersig, 2008). Similar dynamics were underway in Malmö and Helsinki, as well as in other cities that played a prominent role in the Eurocities network (e.g., Frankfurt, Turin, Lyon, Barcelona, etc.) (Le Galès, 2003; Pinson 2015). All interviewees highlighted the following driving factors in the shift taking place in Copenhagen (see also Thor Andersen, 2002): 1) appeal to other segments of the electorate, including younger generations and pro-business groups, by developing new policy issues (e.g., environmental protection, public space), 2) the development of a multi-level resource seeking strategy as opposed to dependency on state investments and support, 3) the reshuffling of policy priorities according to their urban dimension. Together, this contributed to the emergence of the Copenhagen urban growth model.

Jens Krammer Mikkelsen, who ruled as Lord Mayor of Copenhagen between 1989 and 2004, is unanimously considered as having played a prominent role in this process. By contrast to his predecessors and unlike traditional forms of local political leadership in Nordic cities (Giersig, 2008; Reynaert et al. 2009), he rapidly emerged as a strong, individual political figure within the Social Democratic Party. He belonged to the new generation of Social Democrats that were elected as city representatives in 1978. As chairman of the City Planning and Traffic Committee, he was directly involved in the changes taking place in urban renewal and transport during the preceding time period. One of our interviewees summarised his role as follows: *"The former Lord Mayors of Copenhagen were working class. They really wanted to build new social houses, very concrete and solid. But they did not really take into account issues related to quality of life. This new mayor was a school teacher and he put strong emphasis on making Copenhagen a city of culture and quality of life. Personalities played a very strong role in this process, not just his, but also that of the technical mayors. It was not only a party-thing, but more a personality-thing."* (Copenhagen workshop, February 2016). Under Mayor Krammer Mikkelsen's successive mandates, the city of Copenhagen developed a municipally- and public-led urban regeneration

strategy aimed at restoring its financial autonomy. As the city possessed brownfields and unoccupied space, it relied primarily on housing and the real estate market as major drivers. Meanwhile, regional growth focused services and the knowledge-based economy in close cooperation with universities and economic actors⁶⁴.

This was achieved by developing **a multi-level resource seeking strategy and by drawing political support from the state and the EU**. Together with other lord mayors from large urban areas in Denmark, Kramer Mikkelsen supported a shift in national housing policies towards the revitalization of historic city centres and the regeneration of deprived neighbourhoods (see Section 3.2). Similarly to his counterparts in other social democratically led EU cities, he drew on European structural funds in order to finance urban regeneration initiatives in the most deprived areas of Copenhagen. There again, the work done during the previous decade in public spaces was instrumental in order to mobilize these funds as part of a more comprehensive strategy. In addition, renewed discussions about the Øresund link offered a new opportunity to promote Copenhagen's interests with central government and major economic groups. As part of the negotiations with the Ministry of finance regarding the city's debt, he supported the reopening of discussions about the state's spatial planning strategy in the capital-city and highlighting the need to address its specific needs within the metropolitan and regional growth. By proposing a new understanding of the principles laid out in the Finger Plan, this approach highlighted the limits of the corridor-centred strategy **and suggested focusing on the centre (palm) as a way to boost economic growth**.

Large-scale infrastructure planning in Copenhagen and the Øresund

This changed central-local relationship contributed to the development of an ambitious place-making strategy at national level that led both central government and economic groups to prioritizing Copenhagen through a number of infrastructure-led policies.

First, the decision was made to enlarge **the Kadstrup airport**⁶⁵, which was to become the first stop on the Danish side of the Øresund link. Second, the **de facto opening of a new “finger” towards the Island of Amager** constituted a major opportunity for major urban developments to take place alongside a transport axis that would ensure direct connection between the bridge, the airport and major road and rail connections in Denmark. Following the 1992 Ørestad Parliament Act, an entirely new urban area, the Ørestad, was planned on a 310-ha large area – including a protected natural park - with several segments to be successively developed in order to accommodate some 20.000 housing units and 80.000 jobs by 2030⁶⁶: as of end of 2016, the residential population has reached 10.000 people, and there are some 17.000 people working in the area (CPH City & Port development annual report, 2016). There again, planning the Ørestad was considered an opportunity to experiment with new forms of urban development. A joint non-profit organization was created by the state (Finance ministry) and the city of Copenhagen - Ørestadsselskabet⁶⁷ – with 45 per cent and 55 per cent shares respectively – in order to plan and develop the new area and all related infrastructures. The development of the new urban area was financed through land sales⁶⁸. Another major innovation in governance related to the decision-making process itself, with the choice made to introduce a specific Parliament Act: this procedure would be reproduced in later major urban development projects planned in Copenhagen (e.g., Nordhavn) with two major consequences. First, it required the proposed plans to be incorporated into Municipal plans (land-use, mobility etc.). This was achieved in 1996 and offered an opportunity to systematically review existing planning documents. The transport and urban design initiatives that had been introduced in the inner city were extended city-wide. Second, it put a *de facto* end to all the lawsuits that had been initiated by environmental non-governmental organizations against the development of a protected natural area.

⁶⁴ Interview with state representative in the region, op.cit.

⁶⁵ A 10 years' investment programme was launched, including a new domestic terminal, expanding the international terminal, large parking facilities, an underground railway station, new piers and the development of commercial activities in all terminals.

⁶⁶ It should be noted that changes of a similar magnitude were taking place at the same time in Malmö (Fitzgerald 2012; Holgersen 2014)

⁶⁷ It has been replaced in 2007 by By & Havn, a non-profit organization. See annual reports on the company's website: www.byoghavn.dk. For a recent overview, see the report produced by the Brookings Institute (Katz, Noring, 2016).

⁶⁸ For a critical discussion of the decisions leading to the development of Ørestad, see Majoor (2008, chapter 4).

Third, **the Metro project** that had been rejected in 1965 was pushed back onto the agenda as part of the discussions on the development of the Ørestad. Its main rationale was to develop a new corridor towards the airport and the Øresund Bridge. Successive discussions with Sweden about the Øresund link had initially involved national railway agencies, and a large role was to be devoted to DSB in order to develop rail connections and services between the new railways and the national and regional networks. Yet as part of the Copenhagen Mayor's attempts to strengthen the urban dimension of the proposed developments, an urban public transport policy solution was preferred to other possible alternatives (regional train, roads). In addition to funding the new Ørestad area, land sales would also finance the construction of a metro underneath Copenhagen – a funding mechanisms that was inspired by the London experience. The financing issue for the long sought-after metro project was solved. This was achieved by seeking a joint approval for the Ørestad and the metro projects as part of the 1992 Parliament Act, which also contributed to significantly reducing opportunities to challenge the project at the local level.

Public- or market-led forms of urban governance?

Together, these innovations in governance account for this urban growth strategy being characterized by a number of scholars as 'flagship oriented' (Thor Andersen and Winther 2010) and more recently, as neoliberal (see in particular Majoor 2008; Christiaanse, 2009; Olson, Loerakker, 2013). The role of the then liberal-conservative National government, and that of the conservative Prime minister Poul Schlüter, has often been highlighted as the main explanatory factor for the introduction of public-private partnerships, the systematic creation of semi-autonomous agencies and the shift in policy instruments – features that have often been highlighted as major features of the (neo)liberal city model (Fainstain 2009, for a discussion see Pinson, Morel-Journel 2016). Yet in the case of Copenhagen, as expressed by Thor Andersen and Winther (2010): *"If Copenhagen has been part of a neoliberal strategy, it has clearly been a state-led version with reasonable regard to the context of social relations and institutional structures"* (Thor Andersen and Winther, 2010). The urban growth coalition that emerged under the leadership of Mayor Kramer Mikkelsen, with the support of a left-wing coalition and that of the Danish state, actively contributed to this shift and played a decisive role in the growing role of market actors and market-oriented forms of governance. Similarly to the national Social Democratic Party leader, Svend Auken, Mayor Krammer Mikkelen was not opposed to the use of public-private partnerships in order to plan and develop some of the city's most prominent urban renewal projects, including the Ørestad, the Metro and the Docklands.

Together with the state, the municipality created **single-purpose public-owned and privately managed corporations**, with the explicit goal of regenerating large urban areas, maximizing the value of public land, and using the revenues to finance transport infrastructures⁶⁹: Ørestad Development corporation (1992) and Port of Copenhagen Ltd. (2001), created in order to redevelop the former port area⁷⁰. Both companies were brought together in 2007 as part of CPH City & Port Development, which is owned by the state and the city of Copenhagen – with a share of, respectively, 45 per cent and 55 per cent between 2007 and 2014. By combining its role as shareholder and its regulatory powers as planning authority, the municipality hoped to keep the upper hand on future developments. Iconic buildings were built in Ørestad and the harbour area as part of the redevelopment of the Docklands, as exemplified by the Royal Library building, and a consistent effort was made to attract world renowned architects. Yet this policy also led to the increased role of market mechanisms and private actors in the housing market. A steady re-urbanization of the city centre took place in close relationship with increased prices on the housing and the real estate market. Some 20.000 social housing units were sold to residents.

Together, this contributed to the development of the so called "Copenhagen model", which drew on a "self-feeding system" (Andersen, Winther, 2010) in which land use, real estate and infrastructure developments fuelled the city's attractiveness for foreign and private investments, as well as for wealthier social groups. This also had an impact on transport demand. From the mid-1990s onwards, Copenhagen experienced a growth in

⁶⁹ For a presentation of the mechanism it entails, see the case study done by Katz and Noring (2010, 17). For a critical view, see Majoor (2008) and Thor Andersen & Winther (2010).

⁷⁰ Metroselskabet or Metro was created in 2007 on a similar model, and is owned jointly by the city of Copenhagen (50 %), the Danish Government (41.7 %) and the city of Frederiksberg (8.3 %).

jobs, income and inhabitants⁷¹. Urban growth was still underway in the outer suburbs and outside the “fingers” (13,8 per cent), but an important urban population increase was also observed in the inner urban area (5,5 per cent) (Naess et al., 2009). In terms of mobility, this translated into a sharp increase in transport demand. Car traffic rose throughout the region, and the total number of kilometres driven by car in the inner parts of the city of Copenhagen increased by approximately 20 per cent between 1995 and 2000. As congestion increased, the average travel speed decreased from 33 km/h in 1995 to 27 km/h in 2005 in the city during rush hour. In the meantime, the use of public transport remained somewhat stable in the case of S-trains and underwent a sharp decline in the case of buses.

4.3.2 The Copenhagen model as a specific understanding of the integrated approach

In this section, we discuss the extent to which infrastructure-led policies shaped transport policy developments and the reshuffling of policy priorities in Copenhagen. We argue it is first and foremost related to renewed concerns about traffic growth. Second, we discuss how the city was increasingly able to plan and implement its own transport policy objectives. The analysis highlights this shift's incremental nature and in close relationship with the continued strengthening of governing resources. Two major drivers for policy change are examined. First, as new, large scale urban and infrastructure projects were underway, existing municipal planning and policy documents were regularly updated. This offered an opportunity to the city's authorities to reshuffle policy priorities and resources across policy domains, including addressing the negative impact of car traffic growth and rising transport demand to and from the city. Second, renewed concerns for car traffic's externalities justified the development of a sustainable transport agenda that primarily sought to mitigate traffic – and more generally, urban – growth. This was mainly achieved unilaterally, in a context in which the city enjoyed growing levels of autonomy due to the lack of institutionalized forms of regional governance and to ambiguous national transport policy objectives⁷².

From regeneration-led urban planning towards as a specific form of integrated approach

The nomination of Copenhagen as the 1996 European Capital of Culture accelerated the introduction of a large-scale urban renewal strategy. Grounded in urban planning theories and models, it promoted a greater integration with sector-specific policy measures - such as housing, transport, energy, etc. – thus ensuring the mainstreaming of overarching political goals. In Copenhagen, **the integrated approach primarily drew on the urban design experiences** developed at a smaller scale during the previous period, at a time when municipal agents in the urban planning department sought to avoid the creation of too many brownfields and vacant spaces at the lowest possible costs. The city now relied upon additional funding sources available at European and National levels as part of, respectively, the URBAN programme (1994) and the National agenda on urban policies⁷³. Aimed at regenerating urban centres, these programmes funded policy initiatives at neighbourhood level. They these sought to enhance the quality of urban life through densification, the regeneration of the built environment and public spaces, traffic planning and environmental protection (OECD 2009).

In this perspective, the integrated approach meant **a strong focus on public space and life as overarching goals for policy interventions across sectors**. Policy-makers and technicians sought to rely upon a larger set of planning theories and experiences, such as the British model of new towns. Urban planners and architects were increasingly considered an indispensable source of professional expertise across municipal departments and public agencies. In transport, this process begun with the development of the Metro system⁷⁴ and was later extended to other projects and initiatives. Systematic references to Jan Gehl's ideas and more generally, to the New Urbanism movement, were particularly instrumental in justifying the shift away from car-oriented city planning. As Gehl's work became increasingly known worldwide, he also further specified what “planning cities on a human scale” meant for urban planning, what it implied in terms of behaviours and city's

⁷¹ See Graphs 1a, b & c in section 3, and D3.2 Copenhagen report.

⁷² See Section 4.3.3

⁷³ In particular the Kvarterloft programme, 1997 and the Urban Renewal Act of 1998.

⁷⁴ Some years later, when the Metro company was set up to plan and develop future network extensions, an urban planner was nominated at its head.

usages, as well as the concrete tools that could be mobilized in order to make this new city model come true. In this context, car traffic was increasingly targeted as a major barrier towards this process as well as a source of externalities resolutely incompatible with this model. In his most recent work, this was made operational through five rules that should be applied in order to achieve such form of planning – two of which directly highlighted car traffic and the car-oriented city model: 1) stop building architecture for cheap gasoline, 2) Make Public Life the Driver for Urban Design, 3) Design for Multisensory Experiences, 4) Make Public Transport More Equitable, 5) ban cars. By highlighting the strong relationship between Copenhagen, as a source of inspiration, and Gehl's ideas, **policy discourses begun imitating the sound of a tambourine** that was continuously played in the background in order to stress the link between policy initiatives and projects with the city's culture, history and way of life.

In spite of the growing permeability between urban planning and transport, political discourses and public attention mainly focused on large-scale urban development initiatives and flagship projects. This meant that some adjustments needed to be made to Gehl's original thinking in order not to challenge the priority given to the mayor's ambitious urban growth agenda. Political discourses about transport and congestion highlighted traffic mitigation strategies as opposed to car reduction initiatives and goals. This did not, however, prevent the silent and progressive shift towards sustainable transport initiatives.

Organizational and political changes as main drivers for policy change

Although not the most prominent issue on the political agenda, transport benefited from increased policy resources in this changed governance context. This proved particularly instrumental in order to formalize traffic mitigation policy objectives (1997-1998) and later, to foster the adoption of car traffic reduction objectives (2005-2006). During this sequence, **housing, urban renewal and large-scale urban developments were considered higher up on the political agenda**, and sustainable transport was only acknowledged as a major priority in policy documents⁷⁵ and political discourses after 2005.

Car traffic mitigation objectives were formally introduced in the 1997 Traffic and Environmental Plan. This policy document also highlighted the need to develop alternatives, namely public transport and cycling. Nevertheless, these objectives were defined in general terms and did not rely upon specific targets. The 1998 "mini-mayor" reform was particularly instrumental in providing sustainable transport initiatives with additional organizational and political resources. Following the reform, strategic policy goals were mainstreamed across municipal departments and the municipal administration was reorganized accordingly. In this context, urban planning gained additional prominence over transport following the creation of the Housing and Technical Department in 1998. This allowed overarching goals, such as urban regeneration, to be mainstreamed across policy domains as part of the integrated approach. This was done in close relationship with increasingly specified objectives, precise targets, timeframes and actions. By allowing politicians from other political parties to be elected as "technical mayor", this administrative reform fostered the emergence of a potential political champion within cabinet and in the eyes of the wider public. As debates within the Social Democratic Party were still going on regarding the role of the car, this offered some opportunity for the Lord Mayor to draw on external support from within the ruling majority⁷⁶. Both the Traffic Improvement Plan (2000) and the Traffic Safety Plan (2001) reflect the changes underway and introduced some specific targets and concrete ways to reach these objectives.

In this changed organizational and political context, technicians and policy makers within the municipal administration drew on additional resources in order to strengthen the tools and measures that had been introduced during the former phase – i.e., a combination of Stage 2 and Stage 3 policies (e.g., traffic mitigation, urban design, cycling) – and introduce them citywide. **A first series of policy measures aimed at strengthening traffic mitigation objectives** was introduced at the city's borders. It streamlined and systematised what had been introduced during the previous time period. It included traffic signal management, traffic calming, and further reductions in public parking spaces in the inner-city area. Other initiatives sought to mitigate the negative effects of urban expressways, including setting up noise screens, developing public spaces dedicated to skating underneath S-trains and motorways built on pillars, and increasing accessibility and quality of life through urban renewal initiatives. In the case of the Bispeengbuen express way (above-mentioned), these

⁷⁵ This reflects across successive Municipal plans and Transport Acts. See list available in Section 3

⁷⁶ In the case of transport, a member of V (the Libertarian Party) acted as technical mayor between 1998 and 2005, and later on, it was someone from RV (the Social Liberal Party) or SF (Socialist Party). See Table in Section 3

mitigation initiatives were introduced progressively between 1994 and 2011, following the decision to definitely abandon this infrastructure's completion. It included a number of stakeholders - Danish Road Directorate, Danish Design Centre, the district of Nørrebro in Copenhagen, the City of Frederiksberg, etc. - and various funding sources.

A number of initiatives were also introduced in order **to reduce traffic speed, such as pedestrianization, the definition of shared and recreational areas, and changes in parking management.** Such policy initiatives demanded little resources and remained under the control of the municipal administration. Following the 2000 Traffic Improvement Plan and the 2001 Traffic Safety Plan, this approach was extended city-wide and benefited from increased resources, technologies and installations. Altogether, some € 8 million (DKK 60 million) were to be invested in the road network, with over one third of that budget being devoted to cycling initiatives. Nevertheless, differences in road ownership⁷⁷ are instrumental in order to assess the municipality's ability to develop traffic management. Due to the large network of private-owned streets, it could not intervene on the network city-wide. The road ownership structure in Copenhagen also had an impact on the management of such policy initiatives and encouraged the development of "soft measures", which were developed at neighbourhood level through small-scale projects. By involving citizen, residents and local shopkeepers from an earlier stage, technicians sought to increase these stakeholders' overall acceptability and foster a consensus. It also encouraged the development of trials and experiments, as well as the preference given to a step-by-step approach. Drawing on these experiences, a comprehensive action plan - the Copenhagen Urban Space Action Plan (CUSAP), adopted in 2005.

This was also the case for cycling initiatives. Cycling had first been promoted in order to answer transport demand in a city in which socio-economic revenues were low in comparison with the situation observed in the rest of the region. Yet as the city's urban growth strategy became more prominent, **it emerged as an instrumental tool towards the city for life planning model and was increasingly included in attractiveness policies.** From 1991 onwards, cycling policy initiatives mainly aimed at increasing the quantity, quality and safety of cycling infrastructure. Dedicated bike facilities were introduced citywide in close relationship with other urban design initiatives such as recreational areas, the dismantling of parking spaces etc. They were mainly added on a step-by-step basis and in case some opposition was expressed, the initiative was first introduced as a temporary experiment. As explained in an interview: *"The way people looked at cycling in 1990 was more normal. They said: if people wanted to ride bikes, we have to provide the right type of infrastructures"* (interview with cycling expert, February 2016). Drawing on these experiences, the Cycle Track Priority Plan (2002-2012), published in 2002, revised and considerably extended the 1st plan, which dated back from 1981. Citywide investment and initiatives were planned in a more comprehensive way. In addition to the network extension, the further segregation of cycling lanes and the development of intermodality, it included some clear, quantitative objectives to be reached by 2012, such as an increase of:

- The share of residents using a bike – from 34 per cent to 40 per cent -,
- Safety awareness (from 57 per cent to 87 per cent) and reduce the number of accidents by 50 per cent,
- Increase efficiency and travel speed by 10 per cent
- Comfort and levels of satisfaction among cyclists

Throughout this period, **the cycling association acted as a major policy entrepreneur** and maintained pressure on the municipality, both politicians and technicians. This was achieved through lobbying and campaigning activities, which maintained cycling high up in the public debate and the local media. Towards the end of the third phase, cycling had emerged as a strong alternative to car traffic, both in terms of modal share and in terms of budget spent: there was a 68 per cent increase in bike traffic between 1990 and 2009, and some € 272 million (DKK 2 billion) were spent on cycling initiatives.

Public transport as an additional alternative to car traffic

In addition to traffic mitigation, urban design and cycling, **public transport became the focus of greater attention** and, unlike the situation observed in previous phases, the recipient of a large share of policy resources. This confirms the role of converging transport policy developments across cities in WP4. The Metro system was

⁷⁷ See Section 3 on the private-owned road network in Copenhagen.

primarily developed as a contribution to traffic mitigation policies, and it is only during the recent period that it has been framed in political discourses and transport policy debates as a contribution to the reduction of car use.

The development of the Metro system is considered a major turning point in Copenhagen's urban transport agenda and policies (Naess et al., 2009). To be sure, it gave a decisive – and unprecedented – push to the development of public transport in Copenhagen. It also represents a major shift in city-state relationships. The changed urban governance context and the funding mechanism attached to the development of Ørestad contributed to silencing most opponents to the project. In Copenhagen, most debates – among policy-makers and with the population – about the proposed investment mainly addressed its desirability rather than congestion reduction on the road network as such. According to one interviewee: *"The discussion was only about the need for investments, not about avoiding congestion. There was an economic issue. Anyway, it was very much a turnaround project in debates about transport demand in Copenhagen"* (Interview Metro, February 2016). Others emphasized its role as a flagship urban development project, over which actors and debates outside transport dominated the networks' planning. In other words, it was not framed as a classic transport initiative, but as a powerful factor of urban transformation. It was indeed considered instrumental in Mayor Kramer Mikkelsen's urban growth agenda and a major step in developing new forms of funding mechanisms.

Moreover, it was also considered instrumental as part of the ruling majority's wish to attract wealthier social groups. As urban planners played a growing role within the Metro company, the link between public transport infrastructure, spatial planning and socio-economic dynamics was emphasised as part of urban renewal and public space initiatives taking place on the ground in the vicinity of the network. While transport planners and engineers were busy developing the network and its related installations, urban planners, economists and sociologists planned the metro as a direct contribution to the changes advocated by the ruling political majority in the city's social structure. Paradoxically, and somewhat counter-intuitively to the criticism later addressed to the metro's socio-spatial effects, the metro project was planned as a driver for municipally-led gentrification processes. This was summarized in the following way by an interviewee: *"Within Metro, real estate, growing prices, access to workplaces, attractiveness, etc. all of these issues contributed to feed into our thinking about the new infrastructure. We were aware of the fact that its opening would imply changes for everyone in the city and for the way through which different groups and areas in the city interacted with one another. There were also long-term effects to be considered, such as gentrification. Of course, gentrification also leads to negative effects and there are some people who do not want the metro because of that. And even though there was no real opposition among inhabitants to the metro project itself, some inhabitants opposed its short-term consequences, such as the noise and inconveniences attached to the building site. They also opposed its long-term consequences in terms of settlement. But it is a social democratic investment, and it comes with some consequences for the most socially homogeneous parts of the city, especially in the wealthiest and in working class areas. Inhabitants were always offered the possibility to sell their property to Metro, but this happened rarely"* (interview Metro, February 2016).

Yet the Metro system remained a major ingredient to the city's traffic mitigation strategy and less so a driver towards actively reducing car traffic. Its development in the densest urban areas was preferred to car reduction initiatives in order to avoid conflicts with pro-car interest groups in the suburbs and ensure a majority vote within Parliament on the 1992 Ørestad Act. It was meant as complementary to increased road capacity and aimed at preventing congestion rather than reducing car use. Its planning was combined with other capacity investments on roads, including the widening of existing motorways in the suburbs – as opposed to developing new roads, with the exception of the Great Belt Fixed link, opened in 1998 – and with urban planning tools aimed at densifying already urbanized areas. This explains why the joint development of both types of capacity investments – metro and roads – has also been interpreted as a way of *"stepping on the accelerator (i.e., increased road capacity) and the brake (i.e., public transport development and the Metro in particular) at the same time"* (Næss et al, 2009).

Considering the changes in mode share following the opening of the Metro system in 1998, both views have been somewhat confirmed. It was followed by a rapid and continued increase in passengers. **Yet it is also said to have exerted a somewhat adverse effect on existing modal share in Copenhagen.** As it was mainly restricted to the core urban centre, an area where people previously moved by bicycle or bus rather than by car, it was not, in effect, considered a strong enough competition to car traffic in the outer districts and outside Copenhagen. By moving car users underground, additional road space became available for cars and traffic

flows, till congestion rose again. Indeed, the expected modal shift from car to metro did not work as expected⁷⁸. Between 1995 and 2007, car traffic (persons/km) increased by 24 per cent, cycling increased by 24 per cent while at the same time, public transport decreased by 7 per cent. By contrast to the continued, incremental changes taking place in Copenhagen, car-oriented policies remained dominant in the region and it was not until the 2000s that some attempts were made to develop regional cooperation mechanisms.

4.3.3 Accounting for the lack of strong non-motorized alternatives at regional level

When considering the evolution of transport policy objectives in existing plans and documents outside Copenhagen, fragmentation and contradictions continue characterizing the strategies pursued at regional and national level, and within them, between administrations in charge of transport as opposed to those in charge of spatial planning and environment. In the following section, this is accounted for by examining ambiguous transport policy objectives at national level and high levels of institutional fragmentation in the region.

Ambivalent national policy objectives in transport and spatial planning

Levels of vertical coordination in spatial planning remained weak until the suppression of the three-tier planning system in 2007⁷⁹, and this situation was particularly exacerbated at National level in the absence of strong mechanisms of horizontal coordination between administrations. As the Prime minister office and the Parliament played a prominent role in the process leading to the introduction of an infrastructure-led strategy in the capital-city, traditional stakeholders in the transport sector, including the DSB and the ministry, were less able to influence the debate over the definition of key objectives and the selection of policy alternatives. Moreover, in a context in which liberals, conservatives and social democrats alternatively hold the power, transport policy documents showed no clear hierarchy between transport modes (OECD, 2009), thus accounting for intense competition and resource-seeking strategies. No clear policy arena was considered legitimate enough to foster an agreement between political parties and among policy-makers, thus leading to the multiplication of policy documents, initiatives, strategies, agreements etc. (see also Naess et al., 2009).

Policy documents reflect such continuous back and forth between the priority given to sustainable transport planning on the one hand and the reduction of congestion on the other hand. In this context, **national policy objectives still follow the principles, strategies and tools that had been introduced in the post WWII period**. As an example, the 2000 National planning statement, established under a coalition between liberals and social democrats (1992-2000), called for an optimisation of existing infrastructure, the establishment of environmental zones, the reduction of available parking spaces and the densification of urban areas. By contrast, the new Conservative and Christian Democratic Coalition (2001-2010) prioritized the reduction of congestion and the need to improve international connections in successive National Transport Agreements (2003, and 2005). The Danish Infrastructure report 2030 – elaborated in the framework of the Infrastructure commission (2006-2007) and the National planning statement – highlights the quality of Denmark's road network, deplores increasing levels of traffic congestion and suggests, on the one hand, proceeding to capacity investments in transport infrastructures, especially roads, in order to boost the country's "economic sustainability", and on the other hand, promoting a change in users' behaviours and choices⁸⁰.

National policies primarily rely on **two main types of policy tools** in order to make these goals material: at national level, regulation and taxation on car ownership and fleet renewal, which effectively encourages pro-car initiatives, and spatial planning tools, as an attempt to mitigate the negative impact of car traffic and car-based mobility in the capital-city region. Both types of policies are successively introduced here.

⁷⁸ Interview transport expert, February 2016

⁷⁹ See section 3

⁸⁰ *Danish Infrastructure report 2030*, Infrastructure commission (2008). See the English summary available here: <https://www.trm.dk/en/publications/2008/the-danish-transport-infrastructure-2030>

Traffic mitigation through national regulation and taxation on car ownership and fleet renewal

A number of mitigation policies, all consistent with a pro-car approach, were introduced at national level in order to address car traffic's negative externalities: investments in alternative fuels, environmental friendly vehicles, more efficient traffic handling, increased level of information and education. This also includes successive reforms brought to the national tax system on motor vehicles from 1997 onwards in order to prioritize small and energy efficient vehicles (See Table 5a). Car ownership was discouraged through high registration fees (or so-called 180 per cent tax on new cars) and in the absence of a national car industry⁸¹, no incentives to own and use a car were introduced.

This tax-led approach led to strong criticism from both pro-car and pro-environmental groups. The automotive industry together with the Danish car consumer organization and the industry organization of car importers denounced the fact that it encouraged the development of a dynamic market for used cars to the detriment of fostering car fleet renewal (see Graph 3)⁸². In the context of the post 2008 crisis, conservative political parties highlighted the need to reduce the level of taxation and create new source of income at national level. Environmental NGOs – represented through the voice of the Danish ecological council – also **highlighted the limits of the taxation system in two different ways**. First it is too static to take into account technological developments – most vehicles now produced in the EU are more efficient, thus explaining why the tipping point set in 2007 had become too low to effectively incentivize the purchase of cleaner vehicles. Second, NGOs have expressed their concern regarding the current tax system's inability to address possibilities to contravene existing regulations by buying used cars: these cars are exempted from expensive registration fees and for those produced after 2007, they remain under the threshold set for the green owner tax and account for the diminishing total amount of tax revenues.

Table 5a: National tax system on motor vehicles.

Type of tax	1 st introduced	Main goal	When?	Ended	Successive reforms (dates & goals)	Which vehicles?	Amount as of end 2014 vs 2016 / exemptions
Registration tax	Registration tax, 1910	Ensure that vehicle owners contributed to roads construction and maintenance	Vehicle purchase		1997: reduce the number of vehicles in Denmark 2007: incentivize the purchase of smaller & more energy efficient cars through discounts.	Now concerns all vehicles applying for registration for the 1 st time in Denmark incl. taxis, motorcycles and buses.	For passenger cars - In 2014: 105% of the taxable value up to €10.951 and 180% of the rest. - In 2016: 105% of the taxable value up to €14.999 and 150% of the rest.
	Registration tax exemption on electric vehicles, 2007	Support the development of the electric vehicle market	Vehicle purchase		2013: reduce the amount of taxation, with a specific focus on bigger vehicles. 2015: progressive removal of tax exemption for electric vehicles.		Tax on electric vehicles is progressive: - initial agreement: capped at 40% in 2015-2016 / 65%/90%/100%. - revised agreement in 2016: capped at 20% in 2017-2018 and until sales reach 5.000 cars/year

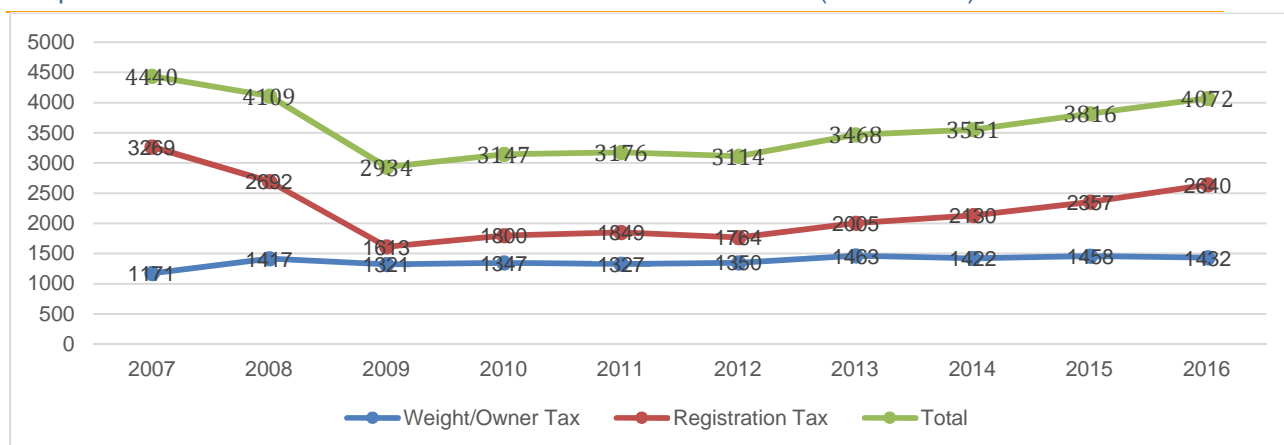
⁸¹ An electric vehicles industry was developed only recently. See below.

⁸² See also the evolution of newly registered cars since 1997, Danish Ecological Council (2017). Available at: www.ecocouncil.dk

							or by 2019, then resume with original plan until 100% in 2022
Weight-based tax	Weight-based tax, 1910	Based on the weight of the vehicle – the lighter the car, the lower the fee.	Annual	1997		Still applies to vehicles registered before 1997	
	Green owner tax, 1997	Replace the weight-based tax, provide an incentive to use vehicles with higher energy efficiency	Annual		2007: incentivize the purchase of more energy efficient cars, i.e. the number of kilometres driven per litre fuel	Only applies to vehicles purchased after 1997.	€2740 EUR (<4,7 km per litre to €83 EUR (> 20 km per litre).
	Countervailing charges on green owner tax, 1997	Applicable to diesel cars only, in order to counteract the difference in tax on petrol or diesel					
Scrapping refund charge	2007	Fee paid to a car scrapping fund as part of the yearly liability insurance	Annual			All car owners, possibility to benefit from €200 to cover the cost of having the car scrapped in a certified facility	Some €11/year

Source: compiled by Halpern, Press review (Factiva database) and Danish Ecological Council (2015 & 2017), both available at: <http://www.ecocouncil.dk/>

Graph 3. Revenues from taxes on motor vehicles in Denmark (1997-2016)



Source: adapted from The Danish Statistical Bureau and Danish Ecological Council (2017).

Taking into account the role of national taxation and its impact over time suggests that **the role of cultural factors should not be overemphasized when it comes to explaining trends in car ownership in Denmark**. Despite the wish of a growing number of Danes to own a car, many of them cannot afford it: this, ultimately, accounts for lower levels of motorization. Moreover, recent debates at national level highlighted the limited capacity for local authorities, including the city of Copenhagen, to shape future changes in national

regulations through institutional channels and the need to rely upon political negotiations both within and between political parties⁸³.

Traffic mitigation through spatial planning in the capital-city region

In addition to tax-based restrictions on car ownership, **the promotion of non-motorized transport alternatives, including public transport outside urban areas, was encouraged through the improvement of facilities and service.** In the Copenhagen region, and in accordance with the Big H strategy, the report proposes strengthening rail and roads connections, and renewing the principles laid out in the Finger Plan as a way to reduce transport demand through spatial planning tools. These priorities echoed those mentioned in the 2005 Regional Plan. This document had expressed the need to strengthen “the economic locomotive of Denmark” through increased accessibility, and highlighted the need, following a decade of capacity investment in the City of Copenhagen, to increase transport infrastructure and facilities in the region as a whole, e.g., the expansion of highways, the development of Park-and-ride as well as an increase in public transport services. Some months later, in 2008, the Economic council, an advisory body of the Danish government, recommended increasing road infrastructure in combination with the introduction of a congestion charge in order to reduce congestion in the short term, while relying on spatial planning tools in order to gradually adjust traffic growth in the longer term (OECD, 2009).

Taking into account the developments taking place in national transport policy documents helps to shed a different light on the 2007 revision of the Finger Plan and the structural reform. In the 2007 revised Finger Plan, the Ministry had to do the splits in reconciling two irreconcilable positions: reduce traffic volumes without affecting mobility on the one hand and strengthen sustainable planning tools and objectives on the other hand. More precisely, it **recommended strengthening urban developments around S-train railway stations as a way to reduce transport demand in a context of rapid urban expansion.** The introduction, that same year, of the 2007 structural reform, contributed to this document’s limited effect (see section 3). To be sure, reverting to a two-tiers planning system nation-wide and designated the ministry of environment as leading on spatial planning objectives could have resulted in strengthening both cross-level and cross-sectoral coordination between transport and spatial planning. Considering the priorities highlighted in the 2005 Regional Plan, this reform was also considered a positive step towards a more sustainable transport agenda. Yet in weakening the regional level’s authority and dismantling policy capabilities, which could have been instrumental in fostering an agreement between stakeholders, this reform also reasserted both the state and the municipalities as the main regulatory and planning authorities, and as such, to led increased fragmentation.

Criticism regularly highlighted the revised plan’s inability to take into account the specificity of the capital-city region, the preference given to national priorities and last but not least, the Ministry of Environment’s leadership over the policy-making process. It was also considered inadequate in its scope, as it only concerned the metropolitan area – 34 municipalities – as opposed to the functional region, which now extended towards a wider territory. As they were now facing reduced growth in population and jobs, as well as the competition from both Copenhagen and the outer suburbs, municipal authorities in the inner suburbs sought to bypass the principle of “environmentally correct location”. This constitutes a first explanatory factor of this document’s limited effect on urban sprawl, together with the aggressive attraction strategies pursued by municipal authorities in the outer suburbs. Similarly, **the changes introduced by the 2007 structural reform gave way to renewed conflicts regarding the planning, the organization and the funding of public transport,** as observed during negotiations taking place in the context of Movia, the newly founded public transport company⁸⁴. In a context in which national transport policy objectives favoured the development of road infrastructures and regional policy resources had been significantly reduced, capacity investments in the capital city region favoured road infrastructure over rail – respectively 30 versus 11 projects during this third sequence.

⁸³ These findings, which highlight the strategic role of political parties in mediating local interests are consistent with the literature about sustainability transitions in Denmark in other policy domains such as energy (Evrard, 2013). Interview with Cycling activist, February 2016.

⁸⁴ See section 3, in particular discussions about bus services that cut across several municipalities.

4.3.4 Concluding remarks, Phase 3

Transport policy developments between 1991 and 2007 confirm the shift away from the car-oriented city in Copenhagen and to a lesser extent, in the region.

In Copenhagen, the municipality benefited from a large room for manoeuvre **to progressively develop and push forward a comprehensive sustainable transport and mobility strategy**: first with the support of the national government, and second, in a context of low policy capacities at the regional level. Much of the changes observed between 1991 and 2009 result from unprecedented levels of city-state cooperation as well as from an infrastructure led urban growth agenda. Both the Øresund link as well as the metro project contributed to enhancing the city's attractiveness and function as the main national hub, and less so to reducing car traffic. As new city planning models emerged, transport policy priorities were increasingly submitted to sustainable urban planning goals and rely increasingly upon urban design initiatives and cycling. A number of alternatives to car use were introduced as part of an integrated approach to urban mobility. Congestion reduction emerges as a major transport policy priority. **These policy developments were introduced gradually, and benefitted from increased organizational, political and knowledge resources within the municipality.** They were eventually brought together towards the end of the 2000s as part of the city's climate change agenda. Even though both types of transport policies rely upon a different set of stakeholders, policy resources and tools, and funding mechanisms, their combination contributed to the shift away from traffic mitigation policies towards car reduction strategies. By contrast, **car-oriented planning and policies remained dominant in the suburbs** throughout this time period. Unlike the situation observed in Copenhagen, no major transport policy initiative was introduced. Investments in railways decreased considerably up until the early 2000s.

As congestion increased in Copenhagen, **two different policy dynamics have been identified**. When considering transport policy developments in the City of Copenhagen, the 2007-2015 sequence can be characterized as the triumph of the Cycling city model and is strongly related to the urban climate change agenda. By contrast, when considering transport policy developments in a regional perspective, the city's insular position becomes increasingly difficult to maintain and accounts for a series of transport controversies between 2009 and 2015. Both narratives are successively examined.

4.4 The triumph of the cycling city model (Phase 4, 2007-2015): the tale of the city

In this section, we examine the tale of the Cycling City model. More precisely, we focus on transport policy developments within the city and the way through which cycling was confirmed as the transport system's backbone in the context of the urban climate change agenda. First the report highlights the pivotal role played by the pro-cycling coalition within and outside the municipality. It also discusses why and how cycling became instrumental in asserting Copenhagen's worldwide position as a liveable, green and attractive city. Second, analysing the choice and selection of policy tools, it shows how the city of Copenhagen developed an aggressive communication strategy aimed at promoting the Cycling City worldwide.

4.4.1 The emergence of the urban climate change agenda

As congestion increased in Copenhagen, transport gained unprecedented salience on the political agenda, and was particularly discussed during the 2005 political campaign. Building on the work achieved since 1997, the outgoing administration formally recognized the need to go beyond traffic mitigation as part of the 2005 Municipal plan. Transport policy goals now included a wider range of alternatives to car traffic:

- applying restrictions on car traffic in the inner city,
- developing non-motorized modes of transport as a major priority together with providing pedestrians with a better and safer environment,
- achieving an efficient public transport system in the Ørestad region,
- constructing parking lots near facilities in the harbour area

The Kramer Mikkelsen's administration was, however, criticized for not having sufficiently supported car traffic reduction and non-motorized transport alternatives.

Within the Social Democratic Party, Ritt Bjerregaard promoted **an ambitious climate change agenda and the reshuffling of all urban policies** (e.g., housing, transport and energy) as part of this overarching policy goal as well as the introduction of more constraining policy measures and tools. In the opposition, Klaus Bondam,

from Radikale Venstre⁸⁵, actively pushed cycling among one of the top priority political issues during his campaign. Following their election as, respectively, Lord Mayor and Mayor for Technical and Environmental affairs, the city's urban growth strategy was revised as part of the climate change agenda. By contrast to previous stages, car reduction policy objectives and cycling were addressed as prominent issues in both political discourses and policy documents. Drawing on the past experiences, the urban sustainable transport agenda as both continued and expanded, in combination with a shift in policy tools and resources.

Apart from being the first woman to have been elected as Lord Mayor (2006-2010), Mayor Bjerregaard devoted her entire political career to promoting environmental protection. She relied upon extensive political networks within the Social Democratic Party and the environmental movement at national and European levels in order to accelerate **the shift towards an ambitious urban climate change agenda and its mainstreaming throughout policy areas**. Under her leadership, a political vision - "The eco-metropolis: our vision for Copenhagen 2015" – was produced and adopted in 2007. It clearly highlighted climate change as a major political priority to be mainstreamed throughout policy domains. This was also done with the support of the national government and major economic interests during preparatory works for the 2009 Copenhagen summit⁸⁶ and in the context of the 2008 crisis. Green growth and zero-carbon strategies were considered major opportunities to boost economic recovery.

In line with Mayor Bjerregaard's wish to highlight the prominent role of cities and mayors in the climate change agenda, she convened a number of mayors to **an international conference on the role of cities** in Copenhagen in 2009. One of the rationale for convening this meeting was the recognition of the role played by cities due to demographic trends and inter-state politics at international level, as explained into more details by R. Bjerregaard in the following quote: *"It is the cities that are most aware of the consequences of excessive CO₂ emissions, and therefore, more ambitions can be expected from the cities than from the governments of the country. ... We will put pressure on the meeting [COP 15 in Copenhagen], so that a proper outcome will come from the climate conference. ... There is a huge difference between what New York mayor Bloomberg wants and what the United States President wants"*⁸⁷. As the city's involvement in climate change reduction objectives increased and following the introduction of a zero-carbon emission objective in the Climate Plan 2025, **urban transport was designated as a major driver for reducing carbon emissions, together with housing**. As mentioned during the CREATE Workshop (February 2016): *"Climate was all over in 2009 with the Copenhagen summit. We had this vision that Copenhagen should become the environmental capital of the world. We wanted to be the world's best cycling city. We wanted to be the world's most environmental friendly city. This also changed the way we organised our administration"*. This accelerated the reshuffling of policy priorities and resources citywide and across policy areas. Urban development close to public transport nodes, biking and sustainable energy solutions are identified as major drivers for achieving climate change reduction objectives.

From traffic to mobility, and from roads to streets

In transport, the changes observed at city level led to **a shift in policy discourses**. Roads were not conceived anymore as infrastructure, but policy documents now increasingly referred to streets, understood as urban and public spaces in which heterogeneity of uses is welcome. Second, what had been referred to as traffic policies and initiatives was now referred to as mobility policies. Several interviewees referred to the rapid changes observed during these years: *"the shift between 'traffic and environment' plans towards 'quality and liveability' plans was accomplished during these years. This change is considered 'more than just symbolic', but rather the sign of 'an actual shift in policies'"* (Copenhagen CREATE Workshop, February 2016). Another interviewee added: *"We also turned from talking about mobility instead of traffic. It turned around in the late 2000s. The streets are not only for traffic. Public places were turned into recreational areas"* (interview with cycling activist, February 2016).

In order to make this shift material, Mayor Bjerregaard strategically drew on **extensive political and organizational resources**. As head of the newly created "Technical and Environment Magistrate", Klaus Bondam played a pivotal role in this process, by constantly pushing for sustainable transport to remain high up on the

⁸⁵ Radikale Venstre is a Social Liberal Party.

⁸⁶ United Nations Climate Change Conference

⁸⁷ Berlingske, 9 April 2008.

political, the municipal and the public agenda. Climate change objectives were translated into 10 urban transport policy goals, each of eventually being developed into a proper strategy. From 2009 onwards, the following policy documents were introduced:

- The Cycling Strategy “From good to the world’s best cycling city 20011-2025”,
- The Strategy for heavy vehicles and goods,
- A Traffic Safety Plan,
- A Noise Action Plan,
- A Parking Strategy,
- A Traffic Management Plan,
- etc.

Pre-existing car reduction policy tools and resources were strengthened; namely the limitation of road capacity, the regulation of transport demand, the reduction of parking space and the increasing of parking fees (see also Naess et al., 2009). In 2007, the municipality took over the administration of the private common roads and was able to plan and develop policies throughout the roads network. Parking management was also extended to outer districts in 2007. Cycling infrastructure and initiatives were mainly developed by drawing on the resources provided for maintaining and upgrading the road network. Yet unlike the situation observed in other cities in WP4, few initiatives were specifically aimed at reducing road space available for cars (e.g., parking spaces).

Continued support for public transport

Even though cycling soon emerged as the new administration’s flagship project, the city’s interest in public transport was reconsidered and enhanced. **The bus network was reorganized between 2005 and 2007**, in combination with the newly opened metro network and in order to take into account of changes in transport demand. Bus lanes were further segregated from car traffic as part of the works done on the road network. The city of Copenhagen also actively sought to extend the metro network. The **creation of the Metro Company in 2007** formalized the agreement between the Ministry of transport and the cities of Copenhagen and Frederiksberg to jointly develop the metro network towards other parts of the city (e.g., Frederiksberg, Vanløse and Kastrup Airport). The Cityringen project, a circular metro line, was approved in 2007 and aims to replace bus lines in the city centre. Extensions were planned towards new areas under development in the former port area (e.g., Sydhavn and Nordhavn) and by 2025, the number of metro stations in Copenhagen is expected to double, thus allowing most residents to reach a metro station or an S-train station within a 600-metre walking distance⁸⁸.

Within 10 years, the development of the metro system confirmed the role of public transport as a major driver towards sustainable urban planning in Copenhagen. It is now considered a strategic tool – and necessary investment – in steering the development of new housing and workplaces. In areas such as Ørestad, it has contributed to making transit-oriented development possible. New urban developments in the city are primarily planned alongside existing metro lines and metro stations, and in return, any new urban development has required the planning of adequate transport services⁸⁹. Over time, the multidimensional role of the metro system has contributed to enhancing public transport in relation to car use: *“now people choose to live in a given place because of the high level of public transport offer. In this way, the Metro could become a real measure against congestion and a way to save the money otherwise allocated to car infrastructure and facilities, such as building roads and parking areas”*. (Interview Metro, February 2016).

Nevertheless, much of the current discussions regarding both the creation of Metro and the planning of the new line were less framed as a contribution to the reduction of car traffic, **but as a necessary contribution to strengthening Copenhagen’s function as the country’s main hub**, as mentioned in the following interview: *“This project managed to bring together different levels of government with common interests: if each line had to have some kind of interest for each city, the state had the interest to develop the metropolis, to confirm Copenhagen as a big hub at the national level and thus, to make the flows work better”* (Interview Metro, February 2016). In this respect, subsequent mayors repeatedly committed to the choices made by Mayor Krammer Mikkelsen in the early 1990s and sought to attract continued support from national governments.

⁸⁸ This was consistent with the principles introduced as part of the 2007 Finger plan.

⁸⁹ This is also true for other rail projects, such as the Ring 3 project, see below.

4.4.2 Prioritizing cycling in policy objectives

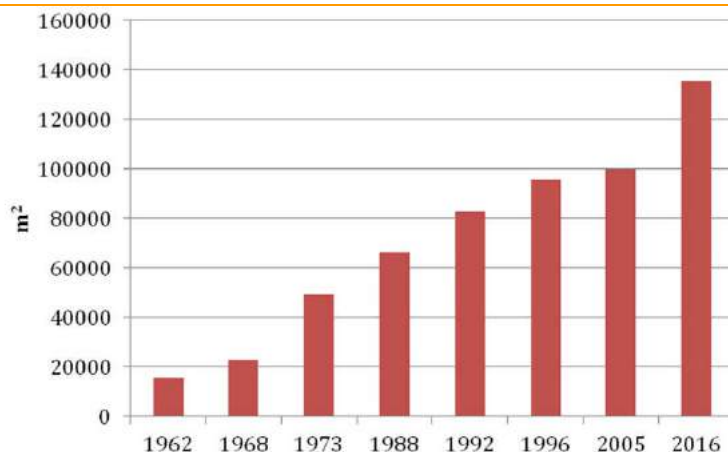
Copenhagen's world fame as the "cycling city" is recent. It draws on a shift in both policy objectives and policy-making. From 2006 onwards, **cycling was singled out as the new administration's flagship project**. This was confirmed after 2009 in subsequent planning documents and the number of cycling initiatives and measures promoting public space, sustainability and quality of life increased rapidly. Funding was made available in order to further develop existing facilities and infrastructure.

The reshuffling of policy priorities

In this context, cycling benefited from additional resources as part of the policy-making process. The Bjerregaard - Bondam tandem played a critical role in the shift towards the urban climate change agenda and the cycling city: *"the current situation is the result of a turn that took place in 2006-2007, with a very strong couple of mayors who really highlighted cycling. It became politically correct to say that Copenhagen was the first cycling-city in the world. Before, cycling was not something really hot. In 2005, during the election, the soon-to-be Lord Mayor campaigned by saying that cycling should be the first means of transport. She convinced everybody that this was the future. He is now the manager of the Danish Cycling federation* (interview with cycling expert, February 2016). By contrast to their predecessors, Bondam and Bjerregaard **publicly and repeatedly acknowledged the city's commitment to cycling**. Moreover, they advocated the need to go beyond political discourses and make these goals operational. As observed by a policy officer working with the City of Copenhagen: *"They were prominent people, well known and they liked biking. Their approach can be summarized as follows: 'if want to do something in Copenhagen about biking, we need a vision and we need strict goals'. We have been working on this ever since."* (CREATE workshop, March 2017). A bike strategy was developed since the 1990s, but the 2010 Cycling strategy took a decisive step towards a new policy-making approach: *"it is full of pictures and short stories, easy to look at and easy to understand"* (ibid.).

Second, unlike the situation observed in the pre-2007 period, cycling policy measures were no longer limited to small-scale interventions onto the road network (bike lanes, parking facilities), but **they increasingly relied upon symbolic, highly-visible initiatives**, including unpopular car traffic reduction initiatives that could antagonize number of stakeholders, including among the ruling majority's traditional electorates. The ban on cars in the busy Norrebrogade, a decision taken by K. Bondam with the support of Mayor Bjerregaard, led to major and unprecedented controversies about the allocation of road space. According to a participant at the workshop: *"there was a huge fight. Many believe they lost the elections because of this. It was a successful policy but a failure from a political point of view. I don't think a politician will ever dare take such a decision again and in the future, they will prefer consensus. But could consensus ever be achieved for such a measure? Sometimes it's also about symbolic gestures and this requires courage"* (CREATE workshop, February 2016). A cycling expert added that: *"The new traffic mayor said he wanted to try, to make a test. It started as a test. ... He was a mayor who actually dared to do stuff, going against the common opinion and trying to do something else. Traffic tests are part of the pragmatism."* (CREATE workshop, February 2016). In the opinion of interviewees, the provisory closing of the road demonstrated to reluctant shopkeepers that cyclists were also costumers. From then on, the development of car free zones increased in the inner-city area (see Graph 4).

Graph 4. Development of car free zones in KM² in the central part of the inner city of Copenhagen (1962-2016)



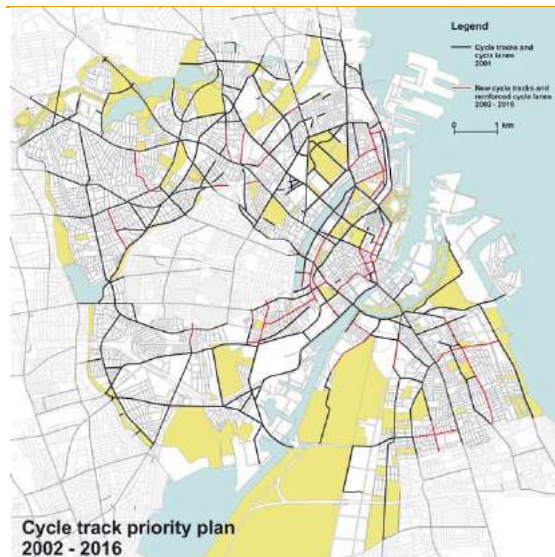
Source: Gehl, 2006, city of Copenhagen 2016; retrieved from D3.2 Copenhagen report.

Together, these initiatives led to revising the 2002-2012 Cycle Track Priority Plan in 2011 (see Map 6). It was introduced as part of the city's new cycling strategy by 2025: "Good, Better, Best: The city of Copenhagen's Bicycle strategy 2011-2025". This policy document seeks to improve cycling facilities through a series of measures, such as:

- smooth and safe surfaces,
- most straight paths possible in order to maintain a high and stable speed,
- a clear visual identification,
- safe and rapid crossing priority at the intersection with car transit,
- green waves systems through traffic signals (at 20 km/h),
- availability of service stations

Increased resources were allocated to its implementation, both in terms of funding and staff. A special municipal secretariat for cycling was created. From then on, policy documents systematically included targeted communication actions, including the regular publication of a bicycle account, in which the city accounts for progress made and introduces new short and long-term policy goals.

Map 6. Cycle track priority plan 2002-2016.



Source: City of Copenhagen, 2009.

Branding the Copenhagen model through communication-based resources and tools

The reshuffling of policy priorities also led to a shift in policy-making and a growing attention to communication, dissemination and innovation. The development of this unique and diverse set of policy resources and tools was borrowed from environmental activism in the context of preparatory works for the 2009 Copenhagen summit.

Some efforts were made in order to **create a narrative** that could "*tell the story of cycling in Copenhagen, get the tambourine started and keep it going*" (Paris workshop, March 2017)⁹⁰. On the one hand, it served internal purposes, in order to convince politicians, residents and a wide range of stakeholders that cycling could indeed be considered a reliable and strong alternative to car use; and on the other hand, the introduction of communication-based policy tools also contributed to branding the city's experience with cycling worldwide, thus contributing to secure additional symbolic resources. As observed by a policy officer working with the city of Copenhagen: "*we like this storytelling approach. But you need to have something to tell about. This is why we count, we measure and we use this data a lot. Without precise facts and proofs of achievements, there is no story.*" (Paris workshop, March 2017). A bike strategy was developed during the 1990s, but since the late 2000s,

⁹⁰ A similar process is underway about walking.

it is revised on a 5 years' basis and dedicated funding and human resources are made available. While senior policy officers drew on their experience with the cycling project, they also benefited from the arrival of new staff, with a larger diversity of skills including in communication, advocacy work and as of more recently, social media. The 2011 Cycling strategy highlights **this shift towards a new policy-making approach**: *"it is full of pictures and short stories, easy to look at and easy to understand"* (ibid.). This also included developing appraisal techniques that demonstrated the added socio-economic value of cycling measures as well as indicators that would allow assessment of its impact as well as to document precisely its increase. Reports are produced on a regular basis and include a large variety of facts and indicators aimed at preventing criticism and reassuring possible opponents to cycling projects. For example, figures and facts were included about cyclists' consumption habits in order to reassure shopkeepers: *"we needed to convince them that cyclists are not bad consumers. They just have different habits than car drivers or public transport users"* (Paris workshop, March 2017). Other sets of figures and indicators include issues related to health and safety, opinion polls and the distribution of road space.

Moreover, the image of a city that managed to reinvent itself after decades of decline was actively used in order to promote the Copenhagen model worldwide **through a large diversity of communication tools**. The local administration developed an ambitious communication strategy and increasingly drew on communication-based tools in order to maintain a high level of attention among politicians, technicians, and the wider public about what was increasingly labelled as the city's core identity. Transport policy documents now systematically include targeted communication actions, including the regular publication of a bicycle account, in which the city accounts for progress made and introduces new short and long-term policy goals. The attention given to communication-based policy tools and resources constitutes a decisive dimension of the Copenhagen model and plays a major role in "keeping the tambourine going" or "spreading the good word" worldwide as well as nationwide. It has indeed proven instrumental in promoting and demonstrating experiences attached with city life initiatives since 2009. As commented during a CREATE workshop: *"Our message is easy to follow: cycling is safe and fast, it supports the whole story of the liveable city. It's our brand"* (WP3 workshop, Paris, March 2017). Together with other policy priorities that are deeply rooted in culture and lifestyles (cleantechs, design, architecture, etc.), it contributes to fostering the city's attractiveness by promoting it as a trend and a brand.

In addition, the city's place-making strategy has also **benefited from the support of civil society organizations and that of the urban planning community** worldwide. Two organizations have played a pivotal role in this process by contributing to the diffusion of the Copenhagen model worldwide while at the same time maintaining pressure on public authorities in order to go beyond ambitious political discourses in implementing sustainable transport policies on the ground: Copenhagenize Design & co was created in 2009 as a consultancy firm whose main goal is *"to show the world how to learn from Copenhagen's many examples of success"*⁹¹; The Gehl Institute⁹², based in New York, was created as a think-and-do tank, with the aim of both creating new tools for promoting public life in cities (urban intervention research, tools and metrics) and acting as an exchange platform. Indeed, the city also relies – mostly indirectly – on a large range of stakeholders, including the urban planning community worldwide that collectively contributed to "keeping the tambourine going" and have transformed this "art de vivre" into a profitable source of knowledge. A number of experts with various professional backgrounds (urban planners, architects, transport planners, psychologists, engineers, activists etc.) contribute, as part of their positions in political parties, academia, NGOs, etc. to a world of non-state, consultancy organizations that actively promote the Copenhagen model, more recently, the Danish model, worldwide⁹³. The Gehl agency and Copenhagenize Design & Co have both opened offices outside Denmark. Their members are sought after experts and contribute, through master classes, led talks, and other forms of knowledge-based tools **to disseminating the Copenhagen model in both its hard and soft forms**.

As these professionals and activists gave greater visibility worldwide to the changes underway in Copenhagen, the municipality was regularly invited to contribute to professional events and cities' networks in order to share its knowledge in "planning for city life". And in return, such growing visibility offered increased opportunities to successive generations of professionals to use Copenhagen as a full-scale laboratory and a preferred location to develop and experiment with new planning theories and practices.

⁹¹ See the agency's website : <https://copenhagenize.eu/#home-body-section>

⁹² Its mission is to "Our mission is to transform the way cities are shaped by making public life an intentional driver for design, policy, and governance" (see Gehl Institute's website, <https://gehl.institute.org/> consulted on January 17, 2018).

⁹³ In 2018, M. Kabell, former Mayor for Technical and Environmental affairs (2014-2017 Red-green alliance) joined Copenhagenize Design & Co as chief operating officer.

4.4.3 Exporting the Copenhagen model worldwide and nationwide

As the cycling city model was promoted, it became instrumental in promoting Copenhagen as well as highly innovative in both sustainable mobility and governance. This proved particularly instrumental in order to **secure alternative funding sources**, and reach out to the private sector and those firms outside transport that were growing increasingly interested in developing new mobility solutions, e.g., smart city solutions, mobility management, digital infrastructures, etc. Such promotion is also achieved by applying and/or being nominated to a number of award-winning contests and actively contributing to cities' networks: in 2014, it received the European Green Capital award and the World's most liveable city award. Over time, this approach obtained impressive results, and between 2013 and 2017, the city received over 30 awards in a number of categories⁹⁴.

The state's "1 billion Danish Krone cycling plan"

The city's efforts to promote the cycling city model also contributed to securing additional resources at the National level for cycling infrastructure and projects in Copenhagen and the wider region. A first breakthrough was achieved in 2009 as part of the 2009 Danish Transport Strategy, with the introduction at the national level by the then Conservative government of the so-called "1 billion Danish Krone cycling plan". There again the 2009 Copenhagen summit, as well as Mayor Bjerregaard's ability to mobilize support across other Danish cities and at a National level, played a critical role in securing increased cycling policy resources.. Some €15 billion was made available for funding large capacity investments in railways, and some € 24 million (DKK 1 billion) for cycling projects in municipalities. This plan and the attached fund was considered **a major breakthrough in terms of promoting cycling at a national level**. It was implemented under the leadership of the Danish Road Directorate but in close combination with the National Urban Policy Agenda: for the first time, cities were targeted as the recipient of government subsidies for cycling initiatives and the co-called "cycling city concept" was developed in order to highlight the possibility for any city – meaning "not exclusively large cities" – to adopt it. The 2009-2014 Cycling Fund targeted urban areas nationwide and aimed at developing 3 types of cycling initiatives: cycling as a transport mode (cycling city projects), make it safer (traffic safety projects, including cycle commuting) and communicating about it (innovative projects). Out of more than 1100 applications, a total of 388 projects were funded through national subsidies (at between 40 per cent and 100 per cent subsidy rate) and fostered a number of cycling initiatives with other funding sources (municipalities, EU, etc.) elsewhere⁹⁵. In a number of cities, projects initiated with the support of the Cycle fund were implemented only recently and have contributed to maintain pressure upon the national government.

In Copenhagen, two major projects benefited from the National Cycle Fund:

- The Bicycle snake, opened in 2014, is a two-lane, 220 m long cycling bridge, which goes across the harbour area and
- The Cycle superhighways project aims at increasing speed and long-distance cycling, and led to revising and expanding the Cycle Track Priority Plan up until 2016 (see below)

A number of interviewees expressed **their scepticism towards the role played by the Cycle fund as part of national policy goals**. At first, a number of observers had characterized it as a "paradigm shift" and a profound turn in national policy goals. This optimistic view must be critically addressed in view of later developments. From an early stage on, sceptical voices were heard, and highlighted its marginal role when compared to capacity investments and policy goals in railways and motorways. In addition, political debates at national level since then have repeatedly questioned the state's legitimacy to finance cycling projects in municipalities. Even though some efforts were made during the selection process to fund initiatives in small municipalities, a number of them were located in the suburbs of regional capital cities, as highlighted in the evaluation of the 2009-2014 cycling fund. Similarly to the situation observed in other EU countries, the growing urban-rural political, social and economic divide led politicians to develop alternatives to national urban agendas. A new cycling fund was introduced only recently for 2017-2019, with a limited amount of funding.

⁹⁴ Check the "awards and accolades" section on the city's Convention Bureau's website: <https://www.copenhagencvb.com/copenhagen/awards-accolades-copenhagen> (last consulted, 17 January 2018).

⁹⁵ See the evaluation report published in 2014 by the Danish Road Directorate : <http://www.cycling-embassy.dk/wp-content/uploads/2015/12/Engelsk-Cykelpuljen-status-2014.pdf>

Nevertheless, the cycle fund's legacy can also be accounted for through less tangible resources, such as horizontal organizational and political leaning processes, increased attention across Danish cities and the search for alternative financing opportunities. Since the 2009 Copenhagen summit, increased pressure from civil society based organizations has been exerted upon national policy-makers. Similarly to the choices made in the 1970s as part of the white crosses demonstrations, their claims are not expressed in political and social terms, but in terms of culture and lifestyles, and sought to cut across political divisions and the rural-urban divide. This was the case with the newly created Danish Cycling Embassy. This think-and-do tank was created in 2009 with a permanent secretariat based in Copenhagen that actively promotes the Danish experience with cycling worldwide but also contributed to institutionalizing the use of communication-based strategy and tools in Copenhagen's transport policy. The Danish Cyclists' Federation constitutes another example of civil society organizations that seek to maintain pressure on the national political agenda and where a profound generational change took place in the mid-2000s, with the arrival of a new generation of urban planners, experts, activists and technicians from across Danish cities. They gained prominent positions within the Danish Cycling's Federation, which is now led by K. Bondam since 2014: **cycling has been promoted as a strong transport alternative** – and not only as a leisure activity. It also sought to renew its action repertoires in order to increase pressure on national institutions and channel the cyclists' interests across a wider range of policy-making arenas. Acting as consultants and experts, and drawing on their experience and knowledge from across Danish cities, including Copenhagen, these new generation of pro-cycling individuals advocated the added value of communication strategies and tools to the traditional transport policy instrumentation repertoire.

Exporting the Copenhagen model in the Capital city region: the Cycle superhighways project

Among those projects financed with the support of the National government, the Cycle superhighways project was instrumental in order to reopen discussions with municipalities in the region for developing joint mobility initiatives. Transport demand for daily commuting to and from the region was identified as a major challenge for the city of Copenhagen. Unlike the situation observed in Copenhagen, no major capacity investment had been introduced in spite of the changes brought to the organization and the governance of transport in the region, and investments in railways – apart from the connection with Malmö – had considerably reduced up until the early 2000s. Car-oriented planning and policies remained dominant in the suburbs, and in the absence of a strong state intervention, **the city of Copenhagen had few opportunities to influence the development of cycling initiatives beyond their borders**. As the number of residents and workplaces increased, and in view of future growth prospects and urban development projects underway, politicians and policy-makers grew increasingly concerned of the need to increase the role of cycling in commuting trips and modal share. Within Copenhagen itself, municipally led gentrification policies had, in return, led to increased transport demand within, to and from the city centre. As Copenhagen became more attractive for wealthier residents and workers, this growing transport demands grew contradictory in nature: walking, cycling and urban design initiatives had been instrumental in enhancing the city's attractiveness for these social groups, yet they were also more demanding in terms of being able to choose between a large range of transport alternatives, in particular car use. In a context in which the national tax system on car ownership was being redefined and new technologies promoted as part of national policies (e.g., electric vehicles), car ownership also started rising again in the city.

The Cycle Superhighway project was considered an opportunity to develop an alternative to car use and as a contribution to congestion reduction for daily commuters. It is the first attempt to spread the Copenhagen model towards adjacent municipalities by involving them in a jointly developed project that was formalized through a partnership between 23 municipalities, which agreed to voluntarily contribute to the development of this network⁹⁶. In addition to this framework agreement, each route requires that municipalities concerned sign a joint agreement in order to specify their level of commitment and the concrete ways through which they will ensure similar travel conditions alongside the route. To this end, the notion of cycle superhighways was defined – and later promoted EU-wide towards London, Paris and other large EU cities –, common quality, safety and user-oriented standards were jointly defined in order: lighting, number of and distance between repair stations, green wave technology, minimum width, etc.). In addition to common standards, some efforts were made to develop some services and communication materials in order **to promote this network as a proper regional-wide transport system**: an app, a logo (C-logo) to be introduced alongside those logos representing S trains, motorways and the Metro. According to the decisions made for each line, the network's completion is expected to cost a total of €55 and 117 million (DKK 413 and 875 million). In addition to the municipalities' involvement, the

⁹⁶ See Section 3 for a map.

project also benefited from direct funding support from the Capital Region of Denmark and that of the state. Its main goal is to confirm cycling as the “*fastest, cheapest and most practical transport mode*” and to extend its catchment area beyond the densest urban areas in the region. It also aims at offering daily commuters the possibility to use their bike for longer distance – beyond 5 and up to 30 kilometres – in order to reach a 30 per cent modal share by 2025 in bike commuting across the region. Seven routes have opened so far, amounting to a total length of 167 kilometres, and 14 routes are planned by 2020, including ring roads aimed at increasing existing connections between municipalities outside Copenhagen or creating new ones⁹⁷. The Cycle Superhighway project aimed at renewing forms of cooperation in the metropolitan area. Yet according to all interviewees, this project remains “*rather unique and unlikely to be easily reproducible*” (Copenhagen workshop, February 2016).

4.4.4 Concluding remarks, Phase 4: the tale of the city

When analysed at city level, this sequence clearly emerges as the triumph of the cycling city. It draws on pre-existing transport policy developments and benefits from the amount of resources invested in public transport and traffic mitigation policies. Yet by linking the development of sustainable mobility together with the urban climate change agenda, and strategically using communication tools and strategies, the cycling city model proved highly innovative and hugely transformative. Using cycling as the backbone of the city’s transport system, unprecedented levels of investment was made citywide in order to increase its share of daily travel. This was achieved under the municipality’s leadership through increased policy resources and in close relationship with the environmental movement. The pro-cycling community was considerably enhanced, and now draws on strong, multidisciplinary expertise and worldwide recognition that fuels the diffusion and strengthening of the cycling city model. These joint efforts also contributed to the model’s expansion within Denmark, and more specifically within the capital region as a transport solution to increased congestion.

Nevertheless, the focus on the urban scale is somewhat misleading when it comes to analysing transport policy developments in the capital-city region. In spite of its huge visibility, the cycling city model only accounts for some of the changes taking place in transport both in the city and the region. In addition to commuting traffic to and from Copenhagen, the regional road network’s structure meant that a wide share of within-region traffic flows passes through the city. Moreover, the pursuit of the urban growth agenda has also contributed to the city’s attractiveness, with some major impacts on real estate and housing prices, demographic growth and socio-economic changes, or to put in other words: “*One of the consequences of these policies has been to have more resourceful people coming to the city*” (interview cycling expert, February 2016). In this context, major transport controversies directly challenged the model’s long-term sustainability and offered renewed opportunities for pro-car interests and an emerging public transport coalition to develop alternative solutions.

4.5 Uncertain mobility futures (Phase 4, since 2009): the tale of the city-region

This section focuses on transport policy developments since 2009 from a regional perspective. Albeit lessened with the 2008 crisis, traffic congestion in Copenhagen remained a major political issue, which was only partly addressed by the urban climate change agenda. In spite of the city’s efforts to promote itself as the cycling city, this was done in a context of growing political debates about transport within the ruling majority. Political discourses during the 2010 municipal campaign highlighted the growing discrepancy between, on the one hand, the city’s image as the cycling city, which was mainly achievable within its own territory in the absence of a region-wide cooperation mechanisms, and on the other hand, the city’s function as a major hub, which heavily depended on large-scale infrastructures and economic growth in order to sustain its growth model. In this section, we examine how Copenhagen’s social-democratic elites progressively pushed the reframing of the debate about congestion in order to redefine state-city relationships and maintain high levels of public investments in the region. We discuss why this constitutes a threat to the cycling city model in a longer-term perspective.

Current challenges in transport partly result from effective and anticipated demographic and economic growth in the city and the region. In spite of the 2008 crisis, the continued arrival of new residents together with the development of new residential and commercial areas contributed to profound socioeconomic and urban changes. Some 100.000 additional residents are expected by 2025, to which one should add a similar number of

⁹⁷ When completed, it should amount to some 746 kilometres

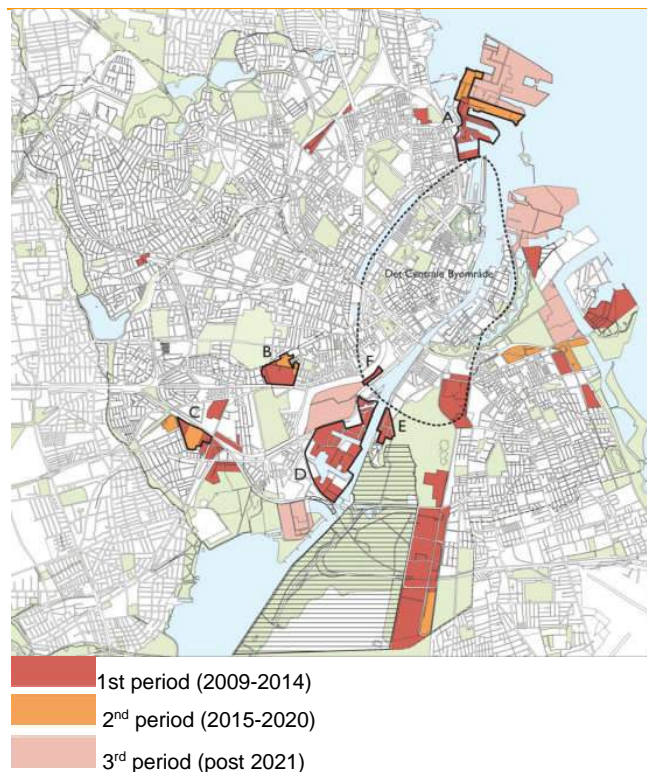
workplaces. In a context of rapidly evolving state-city relationships, a number of transport controversies highlighted the need for a new agreement across political parties and levels of government.

4.5.1 Decoupling urban growth from traffic demand?

The current Copenhagen urban growth model still draws on the principles laid out under Mayor Mikkelsen's successive mandates. Since the election of Mayor Jensen⁹⁸ (since 2010), innovation and new technologies have been added to urban development and infrastructure planning, which had dominated the local political agenda since the early 1990s. Urban regeneration and development remains the major driver for urban growth and have benefited, over time, from the accumulation of capacities at the urban level. The city was able to progressively plan the arrival of future residents and workplaces by taking advantage of with low levels of density and large spaces left vacant by deindustrialization (see Map 7). Similarly to the situation observed since the 1990s, it combined its role as shareholder with its regulatory powers as planning authority in order to keep the upper hand on the development of a vision and planning strategy for these future urban development areas. Urban planning goals were entirely revised as part of the 2010 Municipal Strategy for Copenhagen "Green growth and quality of life » in order to lay out the main principles for urban growth by 2030.

Following the development of the Ørestad and Docklands areas, **the Nordhavn area** is now considered the main urban development flagship project. Located in the northern part of the city, it totals some 34 hectares of land and is expected to accommodate one third of Copenhagen's future population growth by 2024, that is 40.000 residents and as many workplaces. Reproducing similar financing mechanisms than those generated in the case of the Ørestad area - maximizing the value of public land as part of large urban regeneration projects – the ruling majority hoped to generate sufficient revenues to finance the expansion of the metro system (expected in 2019). There again, he relied on a public-owned and privately managed corporation, namely CPH City & Port Development, who's CEO is former Mayor Kramer Mikkelsen.

Map 7. Planning for future growth in the city of Copenhagen

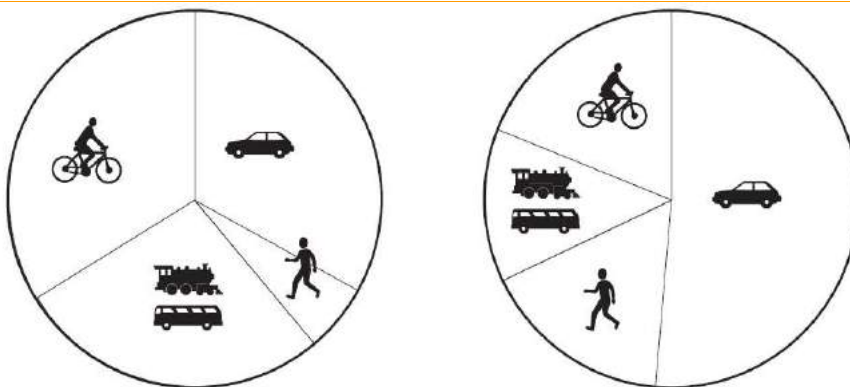


⁹⁸ Mayor Jensen was re-elected in November 2017. The ruling majority brings together Enhedslisten (EL), Socialistisk Folkeparti (SF) and Radikale (R).

Transport policy objectives were adapted in order to take into account these urban planning goals, as shown in the city's sustainable urban mobility plan (SUMP) in 2012, or so-called "Action plan green mobility". This policy document reflects growing debates within the ruling majority between the need for transport to fuel the urban growth model and or to support the urban climate change agenda through ambitious car traffic reduction goals. This policy document confirms the submission of transport policy goals to the urban climate change agenda as well as the concrete ways through which such mainstreaming would be achieved in transport. Yet **the 2012 Action Plan also puts greater focus on the complementarity between transport modes** and confirms the need to address increased transport demand. It also highlights the following paradox: as Copenhagen became more attractive for wealthier residents and workers, transport demands also grew contradictory in nature. Walking, cycling and urban design initiatives had been instrumental in enhancing the city's attractiveness for these social groups, yet they were also more demanding in terms of being able to choose between a large range of transport alternatives, including motorized transport. Moreover, a second source of concerns relates to incoming traffic from outside the city's borders.

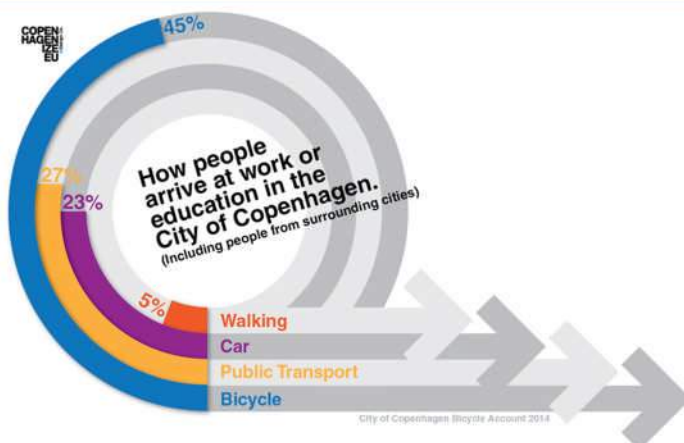
Even though the 2012 SUMP reiterated support for the urban climate change agenda in transport, evolving transport debates between 2008 and 2012 highlighted the growing role of alternative approaches. Subsequent transport policy documents increasingly draw on such conflicting preferences in order **to advocate the need to better integrate transport modes and combine different transport policy types with one another**. More precisely, the development of transport alternatives is no longer addressed in silo but in an integrated way, by mainstreaming transversal issues such as urban development, climate change and capacity extension. A particular attention is devoted to achieving multi-modal travels, in which cycling, walking, public transport and car use are to be considered as components of a single chain. Targets are redefined in a broader regional context, in order to change the modal split for non-work related transport demand in the city, as well as for commuting to and from the City of Copenhagen (see Figures 6a & 6b).

Figure 6a. Modal split to workplaces in the city of Copenhagen in 1999 (Bicycle account for 2000) and general modal split in the city of Copenhagen (Statistics Denmark).



Source: City of Copenhagen 2002.

Figure 6b. Modal split in Copenhagen's area - commuting trips as of 2014



Source: © Copenhagenize, City of Copenhagen Bicycle account 2014.

Transport was increasingly framed in economic terms. The publication of a study produced by the engineering firm COWI was regularly mentioned in press articles, political discourses and opinion papers by representatives from economic interest groups: findings showed that 29 million hours were lost every year in traffic jams with an economic cost of about 8.5 billion kroner (€1,1 billion) a year⁹⁹. Moreover, evolving transport debates showed that the cycling city model was considered less of a relevant transport solution than those that had been considered by the commission on Danish Transport infrastructures 2030. The main rationale was to address congestion by diverting commuting flows away from the city centre. Two major solutions were being discussed at city level: the introduction of a congestion zone, supported by left-wing politicians and pro-cycling organizations and the project for the harbour tunnel, initially supported by conservative parties and pro-car organizations, and now by the Social Democratic Party as part of a multi-dimension political agreement.

In parallel to the changes observed in transport debates in Copenhagen between 2008 and 2012, state interests were shifting away from Copenhagen, which threatens to weaken what was considered to be the main driver for the city's urban growth model. Aligning with a pro-business coalition in a context of economic recession, pro-car interest groups actively sought to further weaken the national tax system on car ownership and use (see above) and, more generally, an infrastructure-led policy agenda.

4.5.2 Transport controversies about mobility futures in the capital city region (2012-2017)

These contradictory dynamics led to a series of major transport controversies about mobility futures in the capital-city region between 2012 and 2017. Putting an end to a two-decades-long joint urban growth strategy in Copenhagen, these transport controversies highlighted the role of inter-institutional competition and party politics in shaping interests' mobilization.

The controversy about the Copenhagen congestion charge

The congestion charge initiative led to a national political controversy about transport in the capital-city region, during which political negotiations both within and between political parties across levels of government played a pivotal role in shaping evolving state-city relations. In the early 2010s, the Social Democratic Party exerted a leading role in Copenhagen (Mayor Jensen), the metropolitan area and at national level (Prime Minister Thorning-Schmidt), but in coalitions in which it had to work, among other political parties, with the Left-Green Party SF¹⁰⁰, which acts as both a challenger and an ally within these ruling coalitions. As part of its office-seeking strategy, SF repeatedly championed transport solutions favouring alternatives to car traffic. In Copenhagen, it pushed for the introduction of a congestion ring around Copenhagen.

The proposed congestion charge was introduced as an experiment in 2011. Drawing on London's experience, the aim was to tax incoming traffic from the region in order to reduce congestion (and air pollution) while financing increased public transport supply. This initiative raised a number of criticisms from right-wing parties, car owners' association and the Danish Industry Association, as well as from municipalities in the region, including social-democratic mayors. Following the formation of the centre-left Thorning-Schmidt government (2011-2014), the debate over the Copenhagen congestion charge both mirrored and increased divisions between SF and the Social Democratic Party¹⁰¹. Within the Danish fiscal system, municipalities depend on Parliament for introducing general taxes, including road charges: Copenhagen could not unilaterally decide to introduce a permanent charge and there was no consensus within the new parliamentary majority and the government to support this initiative. At the local level, it also led to some tensions with the Red-Green alliance, which had, so far, represented pro-cycling policy measures but was criticized for not promoting them in combination with more radical car reduction measures. By contrast, Mayor Jensen's main goal was to secure funding from the state for additional capacity investment in transport infrastructures. At the regional level, the debate about the congestion

⁹⁹ Interview at National Road Directorate, February 2016. See also press article published in CPH Post « Committee presents ideas for reducing Copenhagen's congestion », February 8, 2013.

¹⁰⁰ Socialistisk Folkeparti (SF)

¹⁰¹ The 3rd partner in the government coalition, Radikale Venstre, kept a more neutral position. The 2nd Thorning-Schmidt government (2014-2015) only included the Social Democratic Party and the Liberals.

ring confirmed the role of deeply rooted territorial differences in shaping transport policy preferences in the city and the rest of the region. The proposed congestion charge was eventually abandoned in 2012.

Seeking consensus as part of the Danish Commission on Congestion

In its search for a consensus, central government installed a national Commission on congestion and air pollution in Copenhagen. It included some 28 members: politicians, experts and interest groups. Its aim was to: *“reduce congestion, improve the environment, create modal change and look at road pricing »*. This commission first sought to reframe transport issues in a broader regional context¹⁰² in order to foster a broad political agreement across levels of government with the support of the Social Democratic Party.

By shifting the debate from the city towards the regional level, the discussion highlighted the growing disconnect between transport behaviours and policies in Copenhagen on the one hand, and the region on the other hand. For some Copenhagen representatives, such reframing was criticized from an early stage on for remaining predominantly car-oriented and driven by the need to mitigate the impact of car traffic, such as congestion and air pollution. Yet there also was a general agreement within the commission that some level of territorial differentiation would be needed in order to take into account existing differences within the region. This was particularly discussed during interviews: *“the commission aims at prioritizing cycling and walking anytime it is reasonable, then public transport, then cars. In the commission’s vision, developing car infrastructures in central Copenhagen didn’t make any sense. The idea was rather to make it less convenient to come by car. Representatives of cars’ organizations jumped on their seat. They were pushing for many projects that were in the pipeline in the national decision process and the commission did not support them. All in all, the green side was stronger than the black side. But some concessions had to be made”* (Interview cycling expert, February 2016). Considered less relevant for the regional context, **cycling and walking remained largely absent from the commission’s discussions**¹⁰³. In the context of the Commission on Congestion, the Capital region of Denmark was able, together with research input from DTU¹⁰⁴, to push forward **an ambitious public transport capacity investment project in the region with the support of the central government**. It also actively promoted the use of electric cars in order to reduce some negative externalities associated with car use. As mentioned during an interview: *“There is also a consciousness that, if it is easy to deal with sustainable mobility in the dense central area of Copenhagen, in the suburbs it is far more challenging. Cars are considered a sort of ‘necessary evil’. ... Politicians would say that we don’t want a region without cars. We would very much like that everyone to move by bicycle, but it is not possible. So, we will improve public transport too and as a third possibility, suggest they use their own car. But in this case, we work to promote electric cars”* (Interview Capital Region, November 2016). The commission’s final report, published in 2013, reflects this shift in promoting increased *“holistic solutions that strengthen infrastructure and mobility and improve the environment”*. More precisely, it recommends both short/medium term solutions as well as long-term solutions that would contribute to *“a network that better connects the different forms of public transport together with individual forms of transport such as cars, bikes and pedestrians”*. Yet no specific solutions were promoted, thus leaving some opportunities at the local and regional levels to prioritize between transport modes, with central government maintaining its role as referee through the allocation of funding and planning rights.

In parallel to the discussions taking place within the Commission, political negotiations were also underway between municipalities and central government. Two main negotiation channels were used: party politics, including within the Social Democratic Party, and institutional channels in a two-tiers administrative system. These negotiations eventually led to a compromise between levels of government and between political parties. Insofar as it offered an opportunity to secure state capacity investments in Copenhagen as well, Mayor Jensen supported regional claims for increased investments in public transport. This **public transport agenda** included the extension of S-trains towards Roskilde and Helsingør, the development of an entirely new light rail network (Ring 3, see below) as well as the extension of the metro towards Nordhavn. Preliminary discussions

¹⁰² One should add that it also addressed transport issues in the wider national context, with the introduction of an ambitious capacity investment plan for railways and urban transport.

¹⁰³ This criticism was made upon several occasions by members of the commission, including M. Kabell. He had been designated as spokesman for traffic, climate and urban planning for the red-green alliance in Copenhagen in 2006. He was a member of the Congestion Commission before being nominated as the Mayor for Technical and Environmental affairs (2014-2017).

¹⁰⁴ Technical University of Denmark, See above

were made regarding a second metro extension towards Sydhavn, which was eventually approved by Parliament in 2015. A number of criticism were also expressed on this occasion regarding the city's ambiguous position, with the red-green alliance (M. Kabell) and the social democrats (F. Jensen) eventually accepting massive investment in the road network in exchange for capacity investments in public transport and reducing traffic congestion in Central Copenhagen. Indeed, the final agreement also mentions **a number of road investment**, including new motorways, support for car-sharing networks, electric cars, park-and-ride facilities and the construction of the Nordhavn road and tunnel.

The debate was particularly vivid regarding the Nordhavn road and tunnel: the road itself was meant to divert some 15.000 cars per day away from residential areas in Copenhagen (Østerbro, Central Copenhagen) and the adjacent municipality of Gentofte¹⁰⁵. In addition, a double-track tunnel aimed at easing access towards the future Nordhavn residential district, the industrial port and cruise terminal, while at the same time diverting incoming traffic from the region (Amager) and across the Øresund link by opening a new north-south connection¹⁰⁶. This decision was considered a first step towards the completion of a new motorway project in the city – the “*biggest road infrastructure project in Copenhagen in the last 50 years*” (Copenhagen workshop, February 2016) and as a setback from continued efforts to actively reduce car traffic and space devoted to cars. More fundamentally, it reopened a debate regarding which transport mode should become the transport system's backbone.

The controversy about the Nordhavn tunnel in Copenhagen.

The Nordhavn road and tunnel projects sparked a new transport controversy in Copenhagen, this time among both professionals and among political parties, and in this case, within the pro-cycling organizations. Reaching out from transport-driven issues, the controversy also related to political and social debates about social, environmental and spatial justice in Copenhagen, thus linking back to a more Left-Green opposition to the Copenhagen urban growth model. The Nordhavn tunnel project did mean further reducing the green area of Amager Fælled, parts of which had already been destroyed during the 1990s in order to develop Ørestad and the first metro line (see above).

As the Social Democratic Party pushed for the formal approval of the government's plan both within Copenhagen's Municipal Council (2013) and among adjacent social-democratic-led municipalities around Copenhagen¹⁰⁷, this led to some opposition from this political party's allies, including the Mayor for Technical and Environmental affairs, Ayfer Baykal (SF), who eventually resigned. **The tunnel and the new road investment advocates highlighted the need to divert car traffic away from the city and reduce congestion.** Mayor Jensen sought alternative political support in favour of the proposed investment, first from the local Social Liberal Party (Venstre), also a member of the municipal ruling coalition, whose national leader would become prime minister and head of a Conservative coalition after the 2015 legislative elections, and second from M. Kabell, the new Technical and Environment Mayor (Red-Green alliance). Advocates for the tunnel project highlighted the need to divert car traffic away from the city and reduce congestion. The following quote from M. Kabell reflects this thinking: “*Nordhavns road will have a colossal impact on all those in the traffic in the area. The cars and heavy container traffic will be led underground and out of the city faster, while the cyclists and public transport will have more space above ground*” (CPH Post, 01/12/2017). Some organizations, such as Copenhagenize, grew less vindictive over time vis-à-vis the proposed infrastructure¹⁰⁸, and now considered it an opportunity to reduce the role of cars within the city and to strengthen non-motorized initiatives such as cycling and public transport.

By contrast, other political parties (SF), pro-cycling groups and environmental groups criticized this decision in the name of spatial justice and the need for Copenhagen not to behave as a car-free haven but to fully support the climate change agenda region wide. It was also criticized as another sign of the municipality's active gentrification policies in central Copenhagen as part of the work done by CPH Port and Development and Metro. Opponents also highlighted the city's ambivalence towards the role to be attributed to car use in the future and

¹⁰⁵ It links to the Helsingør Motorway by introducing a 1.6 km long connexion. It opened in December 2017.

¹⁰⁶ Its cost is estimated at DKK 27 billion (approx. € 3,6 billion) and should accommodate some 65.000 cars per day.

¹⁰⁷ Only 2 out of 16 mayors refused to support Mayor Jensen's initiative. All other municipalities (Herlev, Rødovre, Albertslund, Gladsaxe, Frederiksberg, Hvidovre, Vallensbæk, Høje-Taastrup, Lyngby-Taarbæk, Brøndby, Ishøj, Dragør and Glostrup).

¹⁰⁸ See blogposts devoted to the tunnel and their evolution over time: <http://www.copenhagenize.com/>

criticized the Nordhavn tunnel project as giving a wrong signal to new residents in the Nordhavn district and car users in the wider region in a context in which there were some growing attempts to develop non-motorized solutions for commuting travels (see below). The city also faced opposition to the development of the metro from residents in Central Copenhagen due to construction noise. Although the 2015 Municipal plan clearly prioritized the need to “develop the existing city”, by strengthening the relationship between urban development (residential and commercial units) and non-motorized transport supply for all future developments, the shift towards multi-modal travel solutions was confirmed.

Multimodal travel solutions: threat or opportunity for the cycling city model?

Transport policy objectives **increasingly reflect conflicting preferences between different urban growth models, thus highlighting the need to strengthen coordination between transport planning levels.** On the one hand, increased attention is given to regional cooperation, as a major driver for strengthening Greater Copenhagen’s role as an international hub. But on the other hand, cycling, walking, public transport and car use are to be considered as components of a single chain, with cycling being highlighted as most effective for covering the first and the last mile in a seamless travel perspective.

This approach somewhat contrasts with the choices made by past administrations, also raising some concerns among pro-cycling advocates regarding future allocation of budgets to cycling initiatives. It reflects growing discussions within the municipal majority and the transport planning community regarding the city’s ability to further promote cycling as a backbone for urban mobility in a context of sustained demographic growth. Increased congestion on bike lanes and the negative impact on other non-motorized modes of transport, such as walking, was strategically used in the media and political debates in order to justify a more integrated approach to mobility that would take into account the diversity of users’ needs – cyclists, pedestrians, car users and public transport users. The development of public transport alternatives and the growing role of Metro in promoting a public transport oriented urban planning model, somewhat competed with that of the cycling city.

Recent policy documents and initiatives also gave particular attention to cycling and sought to strengthen its role through dedicated measures and infrastructure. The opening of the circle line is expected to significantly reduce pressure on cycling infrastructure and to postpone a much-feared “cycling peak” in Copenhagen¹⁰⁹. This is particularly the case of the **Bicycle Path Prioritisation Plan 2017-2025**, which provides for investments between DKK 1.1 and 1.8 billion (€ 147 and 241 million)¹¹⁰. It advocates the mainstreaming of cycling, with a series of new, transversal policy objectives. It also addresses issues related to traffic congestion on the cycling network:

- Increase the share of cycling in commuting trips from 40 per cent to 50 per cent
- Capacity extension on existing lanes, with an increase from 25 per cent to 80 per cent of the number of bike lanes with 3 lanes
- Increase the quality of the journey: comfort, safety and speed

Nevertheless, pro-cycling advocates highlighted the lack of more restrictive actions towards car traffic reduction as the main driver for congestion on cycling infrastructures. Together with other opponents to the project, including Friends of the Earth, A. Baykal started the “*Nej til flere biler i København*” campaign (*No to more cars in Copenhagen*) and challenged Mayor Jensen during the 2017 municipal campaign, during which the protection of Amager Fælled emerged as a major political issue. For the first time, and in a context in which the state had drastically reduced its direct involvement future urban developments in Copenhagen, the CPH Port & Development company’s financing model was openly questioned in social and political debates.

¹⁰⁹ See article by Athlyn Cathcart-Keays, “Cycling downhill: has Copenhagen hit peak bike?”, *The Guardian*, 17 November 2017: <https://www.theguardian.com/cities/2017/nov/17/copenhagen-cycling-peak-bike>

¹¹⁰ CPH Post online, 24th February 2017. This article also mentions the following estimates for the division of space between road users: 7% for cyclists, 26% for pedestrians, 54% for cars and 12% for parking.

Figure. The “Nej til flere biler i København” campaign logo



Source: Campaign's Facebook page : <https://da-dk.facebook.com/NejTilFlereBilerIKBH/>

It is all together difficult to fully make sense of the recent controversy about the Nordhavn road and tunnel. Two major complementary explanations emerge from the work done in WP4. On the one hand, it can be understood as reflecting the city's ambivalence towards the role attributed to car use in the future as part of the urban growth model. Non-motorized transport has indeed been strengthened and considerably enhanced, but only some minor initiatives aiming at actively and systematically reducing road space and constraining car use have been introduced since the early 1990s. On the other hand, this controversy also fuels and results from increased political and institutional competition at National level. The state's evolving strategy in the capital-city region is examined in the following section.

4.5.3 The state's changed strategy in the capital-city region

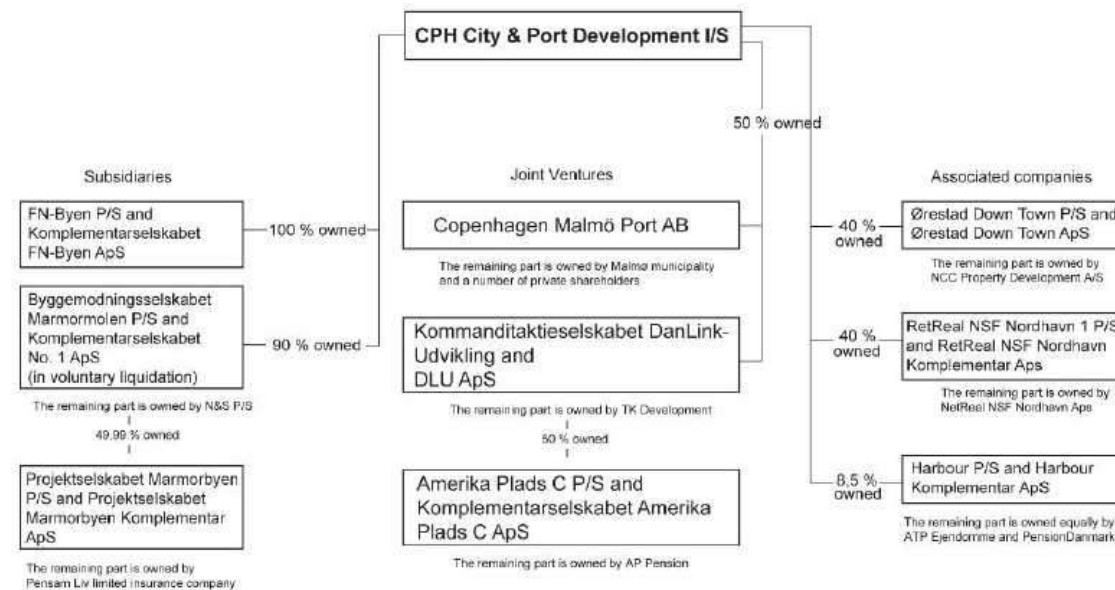
In the post 2008 crisis context, the Danish State has re-enacted with its classic “divide and rule” strategy, in which stakeholders are compelled to compete with one another in order to attract investments and resources made available at national level according to the State's own policy preferences. Following the Danish Commission on Congestion, the transport debate was reframed in a regional and a national context. Two different types of criticism justified the need to reduce state investment in Copenhagen: first, secondary cities in Denmark wishing to develop their own rail-based system – metro or urban tramways – advocated the introduction of a national urban transport framework as part of the urban agenda; second, sparsely populated areas outside major cities and in rural areas increasingly opposed such continued levels of state-led capacity investments in Copenhagen and required that new investments were made in roads and rail networks. This position was strengthened in political debates at national levels as a result of the 2008 financial and economic crisis and discussed as part of the agreement reached between the city, the region and the state during the Commission on Congestion. To be sure, the 2009 Danish Transport Strategy prioritized the need to increase non-motorized transport in Denmark, in middle-sized cities, through investments in public transport and cycling (e.g., Cycling Fund), and by developing rail infrastructures and services.

Reduced state investment in Copenhagen

Yet subsequent political changes at national level also led to redefining national transport priorities and had an impact on the selection of transport solutions in the region. As mentioned by an interviewee: “*The Harbour tunnel project was brought to many discussions. The Congestion Commission did not say that there should be the tunnel. Highway extension projects were developed as well. The government at the time, a social-democratic one, was more pro-public transport than it used to be. Now, it changed again ... and the solutions on the table have changed too*” (Interview with cycling expert, February 2016). Two main consequences have been identified so far: first, the respective interests of the state, the region and the city of Copenhagen are diverging; and second, apart for some common interest in rail-based transport, the city of Copenhagen will increasingly need to find alternative financing resources in the future. As the conservative opposition grew stronger at national level and after the Socialist Party had left the 2nd Thorning-Schmidt government (2014-2015), the state withdrew almost entirely from the CPH City and Port Development at the end of 2014. The company is now owned by the Danish state and the

city of Copenhagen with a share of, respectively, 5 per cent and 95 per cent. Following the state's withdrawal, it was profoundly reorganized under continued leadership from J. Kramer Mikkelsen (see Figure 5).

Figure 7. CPH City & Port Development current ownership structure



In the case of the Copenhagen Metro, much of the debates regarding the planning of the new line were less framed as a contribution to car traffic reduction, but as necessary contribution to strengthening Copenhagen's function as the country's main hub. This justified the state's support up until 2015, with the go ahead for the metro extension to Sydhavn and continued involvement in the Metro Company. Nevertheless, the city of Copenhagen will have to assume more financial responsibilities in the future, as illustrated in the following quote: *"The central government now feels the pressure from other parts of the country asking for the same transport facilities Copenhagen has. In addition, it is also argued that, in the future, the city of Copenhagen will have a much bigger part in the Metro projects"* (Interview Metro, February 2016). It was also understood among those favourable to the project at the local as well as the national levels that growing opposition was being heard in the rest of the country against high levels of state capacity investments in Copenhagen. Today's continued state support to rail-based solutions in the capital city region is consistent with "one-hour train model", which seeks to reduce travel distances by train between Danish cities in the name of economic growth. This was also mentioned during interviews: *"today the interest between the city and the state is a more fragmented. The state still has an interest in railways and in this sense, it could be interested in further developing the Metro system"* (Ibid.). Continued support to Metro is also explained as part of the Ring 3 Light Rail project (see below), whose development relies extensively on the resources and knowledge accumulated with planning and operating of the Copenhagen metro.

The reform of the national tax system on car ownership and electric vehicles as a threat to sustainable mobility goals in Copenhagen and the region

In addition to withdrawing from the CPH City and Port Development, the reform of the national tax system on car ownership and the reduction of subsidies for electric vehicles proved an additional source of concern for the city of Copenhagen. Between 2013 and 2015, a series of amendments were brought to the national fiscal policy on car ownership and electric vehicles. This was justified in the name of the government's strategy to reduce the general amount of taxation, and led, in effect, for a source of income to be reinstated at levels almost equivalent to those prior to 2008. The first move was made in 2013 under the Centre-Left Thorning-Schmidt government (2011-2014) and the second push after the Rasmussen government was elected in 2015. This decision also led to some mixed reactions in the region.

First the decision was made at national level to significantly reduce registration fees on new cars (see Table 5a above). The tax on new cars was reduced from 180 per cent to 150 per cent. This decision was also understood as the result of intense lobbying, at national level, from the automotive industry together with the Danish car consumer organization and the industry organization of car importers, from the early 2000s onwards.

Together, they sought to reduce – and eventually abolish – the current taxation system in order to target the car's safety and environmental properties on a yearly basis, rather than its value and weight at the time of registration. The Danish Ecological Council criticized this reform in regards to its impact on climate change and air quality: by calculating the tax on basis of kilometres per litre, rather than the number of grams of CO₂, the current tax system does not sufficiently seek to reduce CO₂ emissions (Danish Ecological Council, 2015; 2017). A number of proposed changes are currently being discussed at national level (see Table 5b), but there are increased concerns in Copenhagen, where car ownership and use started rising again in the city as of 2015.

Second, and in spite of the lack of political consensus, central government announced the dismantling of the generous tax exemption system on electric vehicles by 2015. This policy measure had rapid and visible impacts: electric car sales diminished rapidly and led to growing concerns against this measure's overall impact on car fleet renewal in a context in which the costs associated with car ownership and used were being reduced. This decision highlighted continued contradictions between transport policy objectives across levels of government, and in this case with the region's transport policy objectives. In this context, and in combination with some efforts to develop non-motorized alternatives (see below), the use of electric cars is actively promoted at regional level in order to reduce some negative externalities associated with car use. Prime Minister Rasmussen and his majority eventually agreed to a temporary political agreement to be reached with the Conservative People's party on the tax system reform, including taxes on motor vehicles. The electric vehicles market was not considered mature enough to pursue the phasing-out of tax exemptions by 2020 and a new calendar was set: car exemptions will resume when 5000 cars have been sold or by 2019, until it phases out completely by 2022¹¹¹. The forthcoming dismantling of SKAT, the Danish Tax Authority, after a series of scandals and the subsequent creation of 7 agencies, including a vehicle agency (*Motorstyrelsen*) is also expected to offer additional opportunities for micro-level adjustments (Politiken, 05/10/2016).

Table 5b. Proposed changes to be brought to current motor vehicles tax system

Proposed change	When?	By whom?	Main goal	When?	In replacement of what?
Proposed CO ₂ -based tax	2016	National Automotive Industry, Danish car consumer organization and Danish industry organization of car importers	Increase sale of CO ₂ efficient cars, younger car fleet and less import of used cars	Annual	Existing tax system
Replace the KM/liter tax basis by a CO ₂ g/km	2014	Danish Ecological Council	Align on other EU countries in order to better reflect reductions in least / most energy efficient vehicles.		Basis for Green owner tax
Introduce a dynamic tipping point across all existing taxes	2017	Danish Ecological Council	Better reflect technological changes and CO ₂ emissions from the best vehicles on the market.	Continuously	Adjustment to registration tax

Source: compiled by Halpern, Press review and Danish Ecological Council (2015 & 2017), both available at: <http://www.ecocouncil.dk/>

In this context of shifting national interests, renewed attempts were made in the capital-city region to develop new alliances and forms of cooperation at both metropolitan and regional level.

4.5.4 Completing the shift towards “Planning for people” policies (Stage 2) in the region

When considered beyond the city's borders, debates underway in the region as part of successive revisions of the Fingerplan, the 2007 administrative reform, and the commission on congestion have fostered increased support for project-based forms of cooperation in the capital-city region. These functional, *ad hoc* solutions primarily aim at increasing coordination in public transport. This shift also reflects the changes taking place in the region in terms of urbanization and demographic trends. While car use and low-density urban development remain dominant in the outer suburbs, a number of initiatives were developed in the metropolitan area in order to adapt and extend Copenhagen's transport policy initiatives. A number of public authorities in the region shared the state's and the city's interest in strengthening its role as major infrastructure hub, but in a regional context, which included a number of dynamic economic, health and knowledge centres outside Copenhagen.

¹¹¹ See Denmark Radio, April 2018: <https://www.dr.dk/%2Fnyheder/%2Fpolitik/%2Fny-aftale-om-elbiler-skal-saette-gang-i-bilsalg>

In this section, we argue that **this diverse set of factors offered unprecedented opportunities for the Capital region to structure a sustainable transport agenda.**

Infrastructure-led cooperation in the region: the Ring 3 light rail project

In its development plan, the first to be released after the 2007 reform, the Capital region of Denmark clarified the region's overall development strategy – to become an “international metropolitan region with high quality of life and growth” and the greenest capital in Europe (OECD, 2009). In order to do so, it suggested drawing on infrastructure, environmental protection and education. As part of the discussions led by the Ministry of Environment during the latest revision of the Finger Plan, Central government had been working together with a group of 11 municipalities in the inner and outer suburbs¹¹², and with the Capital region, in order **to produce a strong public transport alternative region-wide**. This solution was successfully promoted as part of the Commission on congestion. A joint vision (“LOOP city”) was produced in 2015, which highlights the challenges related to sustainable urban planning in a context of rapidly urbanizing suburban areas around Copenhagen, and this joint task force recommended the development of the so-called Ring 3 light railway project¹¹³. The formal decision to proceed with this large-scale infrastructure project was taken in Parliament (Act on the light rail in Ring 3) in 2016 and follows the state's decision made, in 2015, to withdraw from the CPH Port & Development company. Similarly to the choices made in the case of other light rail projects in Denmark (Aarhus and Odense), a dedicated joint public organization was created - Greater Copenhagen Light Rail in 2016 – in order to supervise the project's design and implementation. A mayors' forum was also introduced in order to formally represent local political interests in the new company's governance structure. In terms of organizational resources (personal, offices) and expertise (engineering design, procurement and contractual tasks), the newly founded company directly benefits from Metroselskabet's direct support.

This large-scale public transport capacity investment project represents **a major turning point in transport policy developments in the region since WWII**. First it is the largest public transport capacity investment planned in the region since the last S-train line in the 1970s and represents, as such, a decisive shift away from the car-oriented planning model. Second, by contrast with previous practice, it also results from effective integration between transport and regional spatial planning. The rigid and hierarchical territorial structure that had been established following the 1947 and 2007 Finger Plans, which only allowed infrastructural and urban development along some radial axes between Copenhagen and the suburbs, is being gradually reshaped into a more homogeneous spatial structure that takes into account evolving transport demand following 5 decades of rapid urbanization. In a similar way to the choices made as part of the Cycle superhighways, this project takes into account the need to develop rail-based public transport linkages between suburban centres in order to develop a strong alternative to car use and reduce congestion on public transport in the central area. Moreover, it also provides increased accessibility to existing S-train lines, and to major regional economic, education and health centres in the region, including DTU¹¹⁴ and large hospitals.

Nevertheless, the planning of the Ring 3 light rail project also highlights the challenges in transport governance. Designing integrated regional mobility plans has proven particularly difficult in the absence of a regional transport authority. Large-scale public transport initiatives remain largely dependent upon central-local relationships, and more importantly, on the state's support and active involvement¹¹⁵. In this context, the Capital region acts as a joint platform for inter-municipal and inter-organizational cooperation, and continuously sought to strengthen its relevance as the regional venue for developing transport initiatives. Partnerships are developed on an *ad-hoc* basis between municipalities and transport operators in order to jointly develop and implement mobility measures and services.

112 Lundtofte, Lyngby-Taarbæk, Gladsaxe, Herlev, Rødovre, Glostrup, Albertslund, Brøndby, Vallensbæk, Hvidovre, Høje-Taastrup and Ishøj in the south.

113 See Section 3.3

114 Technical University of Denmark, see above

115 Interviews with Movia, October 2016 and Capital region, November 2016.

Increased cooperation between public transport companies and transport modes

A number of initiatives have recently been introduced by **municipalities and transport companies** in order to facilitate seamless travel. The DOT initiative (Your public transport) constitutes the latest attempt at increasing coordination between public transport companies. Since 2014, DSB, Movia and Metroselskabet developed a joint initiative aimed at giving users / costumers a clearer vision of the public transport network at regional level (Zeeland and the surrounding islands). This is achieved by increasing inter-operability in terms of customer services, tariffs, traffic information, ticketing, communication and marketing¹¹⁶. As of 2017, it was decided to continue relying on a “cross-cutting solution”, that is, a partnership, rather than create a joint organization. A joint multi-annual strategy (2017-2020) was introduced in order to strengthen existing initiatives and improve interoperability and intermodality. More precisely “*DOT must ensure that public transport appears simple and easily accessible*”. Nevertheless, several interviewees highlighted the inability of the three companies to agree to a more ambitious and stable form of coordination. The DOT initiative is no more and no less than a “*common frame of reference*”,¹¹⁷ which remains dependent upon the resources and tools mobilized within each company in order to commit to these common goals. Once an activity has been completed, it is transferred to the DOT secretariat, which ensures daily-operations on behalf of the three companies.

Albeit seeking to increase public transport's modal share in the region, these user-oriented measures did not contribute to reducing the high level of fragmentation and competition between public transport companies and authorities. In a number of areas, such as developing inter-modal services, these companies also compete with one another and intervene unilaterally in order to promote their respective networks, sometimes in cooperation with municipalities. DSB took other stakeholders by surprise during the Autumn of 2016 when it decided to allow passengers to travel with their bikes on S-Trains¹¹⁸ thus putting pressure on Metroselskabet and Movia to adopt a similar policy. However, there is no agreement between DSB, Metro and Movia about tariffs and conditions: as of end 2017, it is free on S-trains but not on buses and the Metro, there are specific restrictions in rush hours, buses do not have capacity enough to take on several bikes etc. As observed by one of our interviewee: “*This type of behaviour poses some serious problems in terms of communication towards users and makes marketing policies more challenging for public transport companies*” (Interview with an expert, February, 2016). This initiative is now considered a success for increased coordination between cycling and S-train users in a wider regional context. As commented by interviewees in the CREATE workshop: “*People often have two bikes. One for the trip from home to the closest train station, and one for the trip from the city centre train station to work. And the train is faster than the car. All in all, there are some successful results in terms of bikes and trains*” (February 2016). This somewhat contrasts with the bus and metro networks, for which alternative services are being developed in order to encourage seamless travel experiences, such as bike & ride facilities at bus stops for example (Interview with Movia, October 2016) or the development of bike-sharing systems (Interview with mobility expert, February 2016).

Mobility as a service: Copenhagen Mobility ECO system

Other forms of cooperation were developed as part of ITS strategies and the search for smart cities solutions. There again, **in the absence of a strong governance reform at regional level, pragmatism and functional cooperation have motivated such small-scale experiments**: “*Even though there is no common public transport company or authority in the city or in the region, neither a regional strong physical planning authority, other ways to cooperate are found*” (Interview with an expert, February 2016). These projects are representative of a will to improve mobility by combining new infrastructure construction with the provision of new services. Yet they also confirm the necessary role of cars and only rely upon optimization strategies in combination with increased integration with other forms of transport.

As part of the city's climate change strategy, Copenhagen's Technical and Environmental administration had committed to developing an ITS Action plan (2015-2016). This policy document was eventually published

¹¹⁶ See for example the creation of a joint website : <http://www.dinoffentligetransport.dk>

¹¹⁷ The presentation of the DOT strategy stipulates that: “it should be noted that the goals set in the strategy are indicative, expressing an ambition for what can be achieved through cooperation. The goals set do not reflect the actual expectation for goal realization”. DOT website: <https://dinoffentligetransport.dk/service/om-os/strategi/> (last consulted 16 December 2017)

¹¹⁸ This service had been experimented since 2010, but was only formally introduced in 2016.

after the Danish commission on congestion published its report, and prioritized congestion reduction as a major policy priority. It puts a particular focus on innovation, both in procedures and in transport. First, it highlights the role of partnerships and tendering procedures as a preferred way to develop a first layer of information-based tools including traffic management systems and smart city solutions. This is considered a necessary condition for the future development of a more comprehensive policy strategy. Among other examples, this leads to increased cooperation with the Danish Road Directorate and municipalities in the metropolitan area in order to jointly develop a digital infrastructure, joint traffic information, signal optimisation and the coordination of road works. Second, the aim was to mainstream ITS solutions throughout existing transport policy goals – traffic safety, traffic management, parking management and public spaces – rather than introducing new ones. Eight new intelligent traffic solutions were introduced in order to monitor short-term parking, ensure better traffic flows in the streets for cars and bicycles, etc.

At a regional level, increased cooperation developed between Movia and the municipalities of Copenhagen and Malmö in order to reduce congestion in the EuroRegion. The so-called “Copenhagen mobility ECO system” takes the form of a mobility platform that provides users with information about public and private mobility services in exchange of a subscription. Movia was considered the most relevant organization to take leadership over this joint initiative, due to its regional dimension. The ECO system was introduced in 2017 and brings together some 20 public and private mobility providers: public transport providers, including the DOT platform, bicycle providers, cab services and car-sharing and -rental companies. This initiative confirms, in Copenhagen as well as in many other cities, the gradual shift towards the notion of “mobility as a service”. In this perspective, different modes of transport contribute to an integrated mobility system from which users may optimize the use of each mode. This user-driven approach thus puts greater emphasis on mobility management and services, as well as additional constraints on transport providers to develop fully integrated services. It also confirms the growing role played by non-transport actors, such as consultancy firms (KPMG) and smart engineering (Ramboll) in the provision of urban mobility services.

As observed in the case of other EU cities, such as Vienna for example, these initiatives also aim at reducing car use and traffic congestion by highlighting alternative transport modes. In the case of Copenhagen, where car ownership and use have been rising again since 2015, the aim is to maintain or reduce the number of driven kilometres despite increased car ownership levels. By providing clear information about the costs of each alternative, it also seeks to promote more affordable transport solutions: *“sharing a car, belonging to a social network becomes more important than owning a car”* (CREATE workshop, February 2016). Last but not least, the Mobility ECO system goes beyond transport demand for daily commuting, and allows targeting other activities (leisure, week-ends, etc.).

The Capital region as the weakest stakeholder

In spite of these recent achievements, all interviewees repeatedly lamented the lack of a regional authority as the main challenge for future transport developments in Copenhagen. These efforts did not lead to strengthening the regional level of government. Rather, they confirmed the critical role of state-local relations and in the case of transport service, much depend upon Movia, the company with the strongest regional interest. According to many observers, population growth contributes to increasing the urban core’s dependency to its hinterland in any attempt to reduce congestion and car use. This was explained in the following terms during an interview with a representative from the Capital city region: *“Copenhagen cannot stand alone, because there are other Copenhageners 40 km from Copenhagen. There are so many inhabitants in the region and they all commute into Copenhagen. Copenhagen and the suburbs are interdependent and mobility demand increases. At the regional level, one of the main challenges is to think about traffic and mobility in a comprehensive way, to control it at the regional level. The situation is very complex: there are many companies; different authorities are concerned, at the local and at the state level. The establishment of a regional transport authority is far from becoming reality”* (November 2016).

In other terms, the Capital region still counts as the weakest player. Transport and mobility are repeatedly addressed in successive regional plans, including the latest Regional Development and Growth Strategy (2014). These regional policy documents provide recommendations, finance campaigns in support of public transport in the media and work with municipalities and transport companies in order to find common solutions. However, as stated by one of our interviewees: *“This is only the beginning of a very, very long process”* (interview with representative from Capital region, November 2016). Regional strategies and policy documents often lack sufficient resources to be translated into a more concrete set of measures, and often fail to be implemented. The Action plan 2015 identifies six topics which are relevant for regional development, including

mobility and sustainability (Ibid.). Moreover, the Region's legitimacy to act in the field of transport is also regularly undermined due to the scale at which transport planning in the capital city region would now be considered relevant. Recently, the region supported the development of the Greater Copenhagen Charter, an interregional cooperation mechanism that goes far beyond the region's administrative borders: it includes the whole island of Zealand, composed by the Capital region and the Zealand region, together with the Swedish county of Skåne, across the Oresund link, where Malmö is located.

In this context, competition still predominates, thus confirming findings from section 3. In addition to above-mentioned growing differences between the state's, the region's and the city's main interests in transport, municipalities in the region are still characterized by profound social, economic and political differences. All of them, including the City of Copenhagen, are engaged in developing aggressive urban development policies in order to attract new residents, investment and commercial developments. In both cases, transport is referred to as a major contribution to quality of life. In the case of Copenhagen, sustainable, non-motorized mobility is now fully integrated in the city's place-making strategies and used in order to promote high levels of quality in public life. By contrast, other municipalities are more reluctant to implement ambitious sustainable mobility policies and primarily rely on motorized transport in areas that are less densely populated

4.5.5 Concluding remarks, Phase 4, the tale of the city-region

This last section confirms the need to go beyond the city's borders in order to make sense of transport policy developments in the region. This does not diminish the Cycling city model's effectiveness, yet it helps in understanding recent transport controversies and the subsequent reshuffling of transport policy priorities across levels of government. In Copenhagen, continued commitment to the cycling city model was achieved in combination with growing efforts to redefine the main principles of the integrated approach. By contrast to the principles laid out during the 1970s, in a context of urban decline, these adjustments aim at reconciling the cycling city model with the urban growth agenda. Since 2007, a growing discrepancy was observed between on the one hand, the promotion of cycling as a major flagship project in political discourses and communication campaigns, and on the other hand, massive investment in traffic mitigation and recurring debates about traffic congestion. As sustainable transport and public life played a key role in the city's competitiveness and comparative advantage vis-à-vis other metropolises worldwide, a large share of transport planning objectives and policy measures aim at maintaining and constantly improving its model through new projects and measures. Yet such competitiveness also relied upon the city's role as a major northern European hub and to its ability to extract resources available in its regional hinterland and the support from the state. Such discrepancy has been reflected in political discourses and led to recurring tensions within the ruling coalition. It became particularly visible in the context of transport controversies about mobility futures in the capital-city region.

In this context, the political agreement reached during the Danish Commission on Congestion fostered the introduction of a new political agreement about transport in the capital-city region. It was made material through new forms of inter-municipal and –organizational cooperation. These are mostly project-led and their scale varies accordingly: at metropolitan level, between 16 local authorities for the Cycle superhighways, on the fringes of the metropolitan area, with local authorities located both within and outside the metropolitan area for the Ring 3 Light Rail project, and at regional level for developing smart solutions in order to increase coordination between modes and ensure seamless travel. These efforts did not, however, contribute to strengthen the regional level of government and confirmed the critical role of state-local relations in this process. Until now, Movia appears to be the stakeholder with the strongest regional interest. Last but not least, the reframing of transport debates in a regional context also benefited from the reshuffling of national policy preferences in transport and beyond. This, however, remains limited to public transport, as shown by recent debates about changes in national tax incentives for electric mobility and their potential impact on mobility goals in the region.

All in all, when considering transport policy developments in both the city and the region, we observed a clear shift away from car dominant policies was observed at regional level, with large investments in traffic mitigation policies (Stage 2) and some efforts to introduce a regional sustainable transport agenda (Stage 3). A similar evolution was observed at National level as part as the economic growth agenda, with a strong interest in rail-based solutions throughout the country (Stage 2) and some very limited interest in cycling (Stage 3). Yet transport policy objectives at national level are more ambivalent, and strongly dependent upon political competition and change, as observed with evolving discussions on the national tax system on car ownership and electric vehicles. By shifting ownership over spatial planning away from the ministry of Environment, national policy priorities have been reshuffled towards a pro-business and growth agenda. In the case of Copenhagen, this last sequence is characterized, on the one hand, by the priority given to cycling and the aggressive promotion of

the Copenhagen model worldwide as part of the city's place-making strategy, and on the other hand, with a growing recognition of multi-modal travel solutions and some ambiguity regarding active car reduction strategies. Yet this finding also shows some convergence with transport policy developments in other WP4 cities, where the 3 policy types are combined with one another. Three strategies are pursued simultaneously: ensuring rapid-transit connections with national and European transport networks, achieving a greater level of accessibility to and from major regional economic and business centres, and finally, meeting the local population's needs and preferences for active modes in the city of Copenhagen.

5 Conclusion

Analysing transport policy developments in Copenhagen region in the last 60 years contributes to further highlighting major drivers for change as well as the main characteristics of this process. In the context of the comparative analysis undertaken in WP4, this helps to identify both the specificities of the Copenhagen case, as well as the converging dynamics. By contrast to the arguments often made in the literature, this report suggests that Copenhagen is not to be considered as an outlying case. First, the analysis done in WP4 confirms the overall transformation of transport policies in both Copenhagen and the surrounding region. Between 1960 and 2017, transport policies shifted progressively from planning for the automobile city (Stage 1) towards traffic mitigation policy objectives (Stage 2), which are still dominant in the region, and planning for city life policies (Stage 3), almost exclusively in the city of Copenhagen. Second, similarly to the situation observed in other WP4 cities, this evolution is not evenly spread throughout the region, with some strong differences between the core urban area, the inner and the outer suburbs. Third, the incremental nature of change in Copenhagen somewhat exacerbated the overlap between policy types – stages 1, 2 and 3 – as well as for the transition being neither unidirectional nor evenly spread in the region. Today, the three policy types coexist with one another in the region and the city, sometimes highlighting the need for new coordination mechanisms.

Assessing the relevance of the transport policy evolution approach in the Copenhagen case

In terms of transport policy developments, the shift observed in policy types can be summarized as follows. Until 1972, and in spite of the integrated approach advocated in the Finger Plan, there is a broad preference across levels of government for mass-transit transport. In practice, this leads to the rapid development of motorized transport and urban sprawl. While this approach remains dominant outside Copenhagen until the early 1990s, traffic mitigation policies are introduced into the city's initiatives from 1972 onwards in order to address opposition to proposed road projects. Drawing on the planning for city life approach under development in the planning community in a context of urban decline, traffic mitigation initiatives are combined together with urban regeneration initiatives. **The ability to consistently pursue and expand this highly innovative approach from the 1970s onwards appears all the more remarkable in relation to the limited policy resources it relied upon.** We argue that such continuity is explained, in the city of Copenhagen, due to the continued accumulation of policy resources on the one hand, and on the other hand, to the role of a strong community of professionals – transport and urban planners, architects, municipal civil servants, etc. – in selecting cycling as a major alternative to car use and urban design as a major urban regeneration tool. In a context of urban growth, they were able to successfully enrol politicians in order to expand and strengthen the Copenhagen model, and to promote their experience beyond the city's borders. Between 1991 and 2007, an ambitious sustainable transport agenda was introduced in a context of urban growth. This is mainly explained due to rapidly evolving forms of urban governance and the reframing of urban mobility as a multidimensional issue. A large share of resources is devoted to the development of large scale infrastructures and urban developments, including the metro system, while other alternatives, such as cycling and public transport also benefit from such developments. Since 2007, a shift towards planning for city life policies has taken place at city level. At the regional and the national level, traffic mitigation policy objectives and initiatives are being introduced. In Copenhagen, transport policy developments confirm the city's pioneering role in making the cycling city model come true and the ability to draw on innovative policy processes, in which the promotion of cycling relies on the accumulation of projects (new lanes, cycle facilities, ...) and an aggressive communication strategy. Yet successive transport controversies have also highlighted the limits of the cycling city model, as well as the challenges raised when considering transport policy developments in a regional context.

Therein lies the singularity of the Copenhagen case. Unlike all other cases in WP4, it is characterized by high levels of disconnect between both the developments underway in the city and in the region, and the factors accounting for policy shifts in the city on the one hand, and in the region and the national level on the other hand. Indeed, the Copenhagen case shows strong continued differentiation mechanisms, which are mainly accounted for by the lack of any form of institutionalized coordination across transport modes at the regional level, either through functional or political modes of governance. In the absence of a strong regional authority or of an integrated transport authority at metropolitan or regional level, no shared approach to traffic congestion and mobility futures could emerge. Over time, this contributed to further deepening strong differences within the region in terms of lifestyles, political behaviour and policy preferences in transport, housing and urban development. In spite of such remaining differences, some profound transformations are taking place in the inner and outer suburbs, in close relationship with demographic and socioeconomic changes. This has fuelled the development of

traffic mitigation policies on a large scale, including investments in public transport and cycling. This is particularly the case in the inner suburbs, where municipalities have increasingly referred to the Copenhagen model in order to further differentiate themselves from the outer-suburbs and cope with high levels of traffic congestion. As the city of Copenhagen reframes its transport policy objectives in a regional context and puts increasing focus on optimising and multi-modal transport solutions, some growing scope for cooperation at metropolitan level could be identified.

Accounting for drivers and forms of policy change in the Copenhagen case

In addition to confirming the shift underway in transport policy developments, **the report also provides some explanation as to how this shift has occurred over time. Two major dynamics of transport policy change were identified.** The first dynamic of change relates to the sustained role of institutional competition and evolving state-local relationships in shaping transport policy developments over time. More precisely, it confirms the need to consider inter-institutional relationships in order to make sense of transport policy developments in Copenhagen. In a context in which large capacity investments in both public transport and road networks are mainly funded through state subsidies, national transport policy objectives and the ability to rely upon a majority within Parliament have profoundly shaped both the rhythm and the scope for transport policy developments in Copenhagen and the wider region. Political debates at national level have oscillated between two different roles attributed to transport planning and policies: first a tool for implementing spatial planning objectives, and second a tool for promoting economic growth. In the former case, efforts were made to integrate transport and urban planning, reduce sprawl and strengthen the role of the regional level as the most relevant scale for transport planning in the capital-city region. In the latter case, motorized alternatives were favoured within the context of the national tax system on car ownership and use, with some increased efforts to support the efforts of municipalities and economic actors to promote growth. More recently, the country's newly gained experience in sustainable transport (e.g., Copenhagen metro, smart solutions in transport, the biking city concept, etc.) have been strategically used in the national government's efforts to promote the "Danish know-how" worldwide and as part of its foreign trade policy. In addition to the role attributed to transport in national policy priorities, the state's ambivalent approach to the role of the capital-city region – and within the region, that of Copenhagen – have also shaped the allocation of funding both within the region and between transport modes. In this context, the Copenhagen case shows some similarities with that of other cities under study in WP4, in which relationships between old European states and their capital cities remain highly ambiguous. In the case of Copenhagen and beyond political change in central government and Parliament, the state's support for transport policy developments in the capital city region has been intermittent and a driver for increased differentiation in transport between Copenhagen and the surrounding region on the one hand, and between the capital city region and the rest of Denmark on the other hand.

Over time, **the state's divide and rule strategy as well as the preference given to municipalities over regions** in successive administrative reforms offered limited scope for capacity building at regional level, either through functional, e.g., the creation of a regional transport authority, or political, e.g., additional transfer of power to the region in the field of transport, forms of governance. This is particularly the case for public transport, where the respective interests of the state and those of municipalities are deeply embedded in every transport company. Each transport network is developed and operated by a different company, and only recently, the development of the Ring 3 light rail project led to the creation of a new transport company. Inter-organizational competition thus adds up to inter-institutional competition, with some constraining effects on the ability to develop a comprehensive transport policy agenda at regional level or institutionalized mechanisms of coordination that would ensure some level of stability beyond political change and competition. This does not, however, prevent the development of project-based forms of cooperation, which emerged opportunistically as part of municipalities' or transport companies' aggressive resource-seeking strategies. Indeed, in those moments in time during which some state-local political agreement could be fostered and embedded into a medium-term policy horizon – spatial planning objectives (Finger Plan), urban growth model, and the congestion commission on congestion – large-scale investments were introduced across transport policy modes and contributed to transport policy change at regional level. By contrast, pragmatism and *ad hoc* coordination mechanisms offer some opportunities to develop small-scale transport initiatives and measures. This, however, does not add up to a comprehensive framework at metropolitan or regional level, and contributes to further fragmenting the existing system and highlighting the need for coordination.

Evolving relationships with the state have indeed been essential in determining the city of Copenhagen's transport policy preferences and capabilities. This is the second key finding highlighted in this report that shows some similarities with other cities in WP4. Until the early 1990s, as the priority was given to

developments outside Copenhagen, urban authorities drafted ambitious, yet unrealistic, visions for transport futures and capacity investment projects, while policymakers were left with planning and developing transport initiatives with limited resources. In their attempt to manage decline while at the same time mitigating the negative impact of commuting car traffic, these professionals relied on the ideas and methods being developed at the same time within the urban planning community around the city for life planning model. During those years, planning for city life initiatives remained small-scale and invisible in political discourses but resulted from social and professional resistance against car dominant approaches in the region. Following the shift in national policy priorities and the joint development of a strong and sustained urban growth model in Copenhagen, the city cultivated its insular tendencies in transport as part of its place-making strategy. The prevalence was given within the social-democratic majority to traffic mitigation policies (Stage 2), with a massive support for the development of public transport in close connection with large-scale urban developments and housing. This approach is being further developed today as part of the prevalence given in political discourses to smart city solutions and the need to reduce congestion. In parallel to traffic mitigation policies, major policy resources have been devoted to building strong alternatives to car use, with the biking city model being developed as part of the city's urban climate change agenda. Drawing on pre-existing experiences, a city-planning model in which cycling is considered the backbone for the city's transport system emerged and benefited from unprecedented political momentum. It offers a strong alternative to the automobile city approach and is being actively promoted worldwide. Cycling has a prominent place in the city's transport agenda, and growing attention is now devoted to walking. Symbolic, large scale initiatives were developed as part of an aggressive place-making strategy that reached far beyond the European context. Increased attention fuelled the development of an ambitious cycling strategy citywide, as well as the allocation of dedicated budgets, human resources and policy tools, which have contributed over time to the rapid increase of cycling in modal shares and daily trips. By paying unprecedented attention to communication strategies and evidence-based policy tools, this approach has been highlighted as highly innovative and contributed to profoundly transforming the way through which non-motorized transport is planned and developed across cities worldwide. All in all, the reinvention of Copenhagen as the ultimate green city is strongly embedded into continued organizational, political and institutional capacity building, a large share of which was devoted to sustainable transport.

Recent transport controversies in Copenhagen have, nevertheless, shown the limits of the city's strategy. By cultivating its insular position within the capital-city region, traffic congestion remains an urgent priority for its authorities. Part of the answer lies in the highly-centralized transport system inherited from the 1947 Finger Plan and the need to develop radial transport axis in order to address regional transport demand outside Copenhagen. The development of a more polycentric form of regional development as well as the opening of the Oresund link has contributed to reframing part of the debate in the regional context and shifting responsibility away from the city's insular tendencies. In the absence of strong metropolitan- and region-wide interests, mass-transit solutions – motorized and rail – are being developed in order to accommodate current and future transport demand, whereas planning for city life types of policies remain marginal outside Copenhagen or limited to a small number of municipalities. While such tendencies are more than often strategically used by the conservative opposition, pro-car organizations and municipalities outside Copenhagen, the justification for the Nordhavn way and tunnel have often been promoted within Copenhagen and pro-cycling organizations as a way to both shift traffic away from the city and make room available for non-motorized transport. Yet socioeconomic changes, demographic growth, and largescale urban developments also contribute to changing mobility patterns, with increasing demand for multi-modal travel solutions, including motorized transport. Together with the reduction of taxes on car ownership and use at national level and the promotion of electric vehicles, car use and ownership might continue increasing again in the city of Copenhagen, as observed since 2015. This justifies the municipality's interest for walking as well as continued efforts to increase and develop cycling initiatives in order to reduce congestion on cycling lanes. Smart city solutions and technologies are also being explored in order to achieve more optimisation, but there might be a need for a more comprehensive re-appraisal of priorities for the road network. Until now, the fear of breaking the political and social consensus around the city's urban growth model has, almost without interruption, justified the prevalence given to developing alternatives and optimising solutions by contrast with effectively reducing car use and reallocating road space through constraining tools. In this respect too, the Copenhagen case shows some similarities with other cities in WP4 in different pathways towards the next stage in transport policies.

6 References

6.1 Primary sources: interviews and other contributions

During the first stage of the work undertaken in WP4, partners were asked to fill-in a “City questionnaire”. This document constitutes a first, general and descriptive narrative of transport development processes in their city (see CREATE WP4, D4.1 report). It served as a basis for organising the Copenhagen WP4 workshop and the 1st series of qualitative, face-to-face interviews (February 2016). The Paris WP3 workshop (March 2017) and the London scenario-planning workshop (February 2018) also provided an opportunity to further identify major drivers for change in transport behaviours and policies.

Hansen A.R., Søgaard H., Elle S., Bækgaard L., *Copenhagen City report, Past and present changes in urban transport governance*, March 2016, 19p.

Copenhagen workshop, February 4th, 2016

- 4 Facilitators from TMF and Sciences Po,
- 8 Participants from the following organizations: Region Nordjylland, TMF, COWI, RUC, ØKF

Interviews face-to-face and telephone

- Traffic planner, Consultant, 05/02/2016
- Traffic planner, Danish Road Directorate, 02/02/2016
- Policy-maker, Capital region, (Phone Interview), 01/11/2016
- Cycling activist, 03/02/2016
- Traffic planner, Movia, (Phone Interview), 20/10/2016
- Urban planner, Metro company, 03/02/2016
- Pr. Andersen, SBI/ Danish Building Research Institute, Aalborg University, 02/02/2016
- Pr. Klemmensen, University of Southern Denmark, 04/02/2016
- Dr. Nicolaisen, Aalborg University, (Phone Interview), 03/02/2016

Other contributions outside the CREATE project

- Master STU Sciences Po Paris, Rapport voyage d'étude à Copenhague, 2014. Available at : https://www.sciencespo.fr/ecole-urbaine/sites/sciencespo.fr/ecole-urbaine/files/voyage_stu_copenhague.pdf (last consulted, December 3, 2017).
- Thor Andersen, H., 2014, “A brief introduction to Copenhagen: recent developments and governance structures”, Presentation given as part of the study trip of Sciences Po master students to Copenhagen, Friday, November 14.

6.2 Policy documents

ATM – Autoritat del Transport Metropolità, “Comparative study of the finance systems of the public transport in different metropolitan areas of Europe”, October 2001.

City of Copenhagen, Atkins Danmark, National WP2 Report of Denmark – ARTISTS – May 2003

City of Copenhagen, *Cycle policy 2002-2012*, 2002.

City of Copenhagen, Eco-metropolis. Our vision for Copenhagen 2015, 2007.

Copenhagenize, City Plan Vest and Søringen - 1958-1974 – Copenhagen, URL: <http://www.copenhagenize.com/2012/11/city-plan-vest-and-sringen-1958-1974.html>

Danish Ministry of the Environment, The Finger Plan, A strategy for the development of the Greater Copenhagen area, 2015

European commission – ADONIS – Transport research fourth framework programme urban transport. VII – 56, Analysis and development of new insight into substitution of short car trips by cycling and walking, 1998

GEHL, Jan, GEMZØE, Lars, “Denmark”, in TANGHE, Jan; VLAEMINCK, Siegf; BERGHOEF, Jo. *Living cities. A case for Urbanism and Guidelines for Re-urbanization*, Pergamon presse, Oxford, 1984

HARTOFT-NIELSEN, Peter, "The "proximity-to-station" location policy in Greater Copenhagen. Background, impacts and experiences", 2002

The capital region of Denmark, Greater Copenhagen. Regional growth and development strategy, 2014

6.3 Secondary sources

BSL Management Consultants GmbH & Co, Analysis of the Organisational Set-up of Public Transport in the Greater Copenhagen Area, Report to the Transport Ministry, Hamburg/Berlin/Copenhagen, 2010.

Christiansen F.J. and Helboe Pedersen H., « Minority coalition governance in Denmark », *Party Politics* 2014 20(6), 940-949

Christiaanse, Kees and Levinson, Nancy, (2009), "Curating the Open City: An Interview with Kees Christiaanse," *Places Journal*, Accessed 15 Apr 2018. <https://doi.org/10.22269/090917>

Jensen, Niels, (2013), Planning a cycling infrastructure – Copenhagen, city of cyclists, In Dextre, J.C., Hughes, M. and Bech, L. (eds), *Cyclists & Cycling Around the World – Creating Liveable and Bikeable Cities*, Fondo Editorial, Pontificia Universidad Católica del Perú.

Fertner, Christian (2012). Urbanisation, urban growth and planning in the Copenhagen Metropolitan Region with reference studies from Europe and the USA. *Forest & Landscape*, University of Copenhagen. *Forest and Landscape Research*, No. 54/2012. Available at : http://static-curis.ku.dk/portal/files/42003001/Forest_Landscape_Research_54_Urbanisation.pdf

Fertner, Christian, Jørgensen, Gertrud, and Nielsen, Thomas Alexander Sick. (2012). Land use scenarios for greater Copenhagen: modelling the impact of the fingerplan. *Journal of Settlements and Spatial Planning*, 3(1), 1-10.

Freuden Dal-Pedersen Malene,(2015), "Cyclists as part of the city's organism: structural stories on cycling in Copenhagen", *City & Society*, 27 (1), p. 30-50

Giersig, Nico, (2008), *Multi-level governance and the European city*, VS Verlag für Sozialwissenschaften, Springer, Wiesbaden.

Gössling, Stefan, (2013) « Urban transport transitions: Copenhagen, city of cyclists », *Journal of Transport Geography* 33, p.196–206.

Illeris, Sven (2004), "How did the population in the Copenhagen Region change, 1960-2002?", *Dela 2*, p.405-421.

Jensen Anne, (2013), "Controlling mobility, performing borderwork: cycle mobility in Copenhagen and the multiplication of boundaries", *Journal of Transport Geography* 30, p.220-226

Jones, Peter (2013) Integrating TDM within a wider policy framework to influence long-term traffic growth trajectories, *6th International Symposium on Travel Demand Management, Dalian, China*.

Katz, Noring, 2016, *Why Copenhagen works*, Brookings Institute, Washington, February 2016: <http://www.brookings.edu/research/papers/2016/02/17-why-copenhagen-works-katz-noring>

Knowles, R., 2012, « Transit Oriented Development in Copenhagen, Denmark : from the Finger Plan to Ørestad », *Journal of Transport Geography*, 2012, 22, 251-261.

Knowles, R., Transport impacts of the Øresund (Copenhagen to Malmö) Fixed Link, *Geographical Association*, 91(3), 2006, 227-240.

Krogh S., Reform Politics through the Creation of Inefficient Political Institutions: The Case of the 2007 Danish Administrative Reform, *Scandinavian Political Studies*, 34(4), 2011, 307-331.

LSE Cities, 2013, *Going green: how are cities leading the next economy*, London, LSE cities. Available at: <https://files.lsecities.net/files/2013/06/Going-Green-Final-Edition-web-version.pdf>

Majoor (2008), Disconnected innovations : new urbanity in large-scale development projects: Zuidas Amsterdam, Ørestad Copenhagen and Forum Barcelona, PhD thesis, Delft: Uitgeverij Eburon. Chapter 4 on Ørestad Copenhagen case accessible here: https://pure.uva.nl/ws/files/4179699/53699_09.pdf

Næss, P., Næss, T., Nicolaisen, M. S., & Clemens, E., « The challenge of sustainable mobility in urban planning and development in Copenhagen Metropolitan Area ». Aalborg: Institut for Samfundsudvikling og Planlægning, Aalborg Universitet, 2009.

Næss, P., Andersen, J., Nicolaisen, M. S., & Strand, A., « Transport Modelling in the Context of the 'Predict and Provide' Paradigm ». *European Journal of Transport and Infrastructure Research*, 14(2), 2014, 102-121.

Nauwelaers, C., K. Maguire and G. Ajmone Marsan (2013), "The case of Øresund (Denmark-Sweden) – Regions and Innovation: Collaborating Across Borders", OECD Regional Development Working Papers, 2013, OECD Publishing.

Nicolaisen, M. S., « Forecasts: Fact or Fiction? Uncertainty and Inaccuracy in Transport Project Evaluation ». Department of Development and Planning, Aalborg University, 2012.

OECD, 2009, « Copenhagen, Denmark », OECD Territorial Reviews, Paris, OECD.

OMEGA Centre (2014), Sweden: The Øresund link profile, OMEGA Case studies, 72p. Accessible at: http://www.omegacentre.bartlett.ucl.ac.uk/wp-content/uploads/2014/12/SWEDEN_ORESUND_PROFILE.pdf

Pinson, Gilles, Morel-Journel, Christelle, eds., (2016), *Debating the neo-liberal city*, London, Routledge.

Reynaert, Herwig, Steyvert, Kristof, Delwit, Pascal, Pilet, Jean-Benoit (dir.), (2009), *Local Political Leadership in Europe. Town Chief, City Boss or Loco President ?*, Bruges, Vanden Broele Publishers.

Thomsen, K.B., « Modernism and Urban Renewal in Denmark 1939-1983 », 11th Conference on Urban History, EAUH, Prague, 29 August-1 September 2012

Thor Andersen, H., Winther, L. « Crisis in the Resurgent City ? The Rise of Copenhagen ». *International Journal of Urban and Regional Research*, 34(3), 2010, p. 693-700.

Valderrama Pineda A.F., Vogel N., « Transitioning to a Low Carbon Society? The Case of Personal Transport and Urban Form in Copenhagen: 1947 to the Present », *Transfers* 4(2), 2014: 4–22

Vuk, G., Ildensborg-Hansen, J., *Transport impacts of the Copenhagen Metro*, Association for European Transport and contributors, 2006

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D4.2 - Technical report for Stage 3 city: Berlin

Work Package 4 “Qualitative analysis of Transport policy developments”

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1 The CREATE project

1.1 Brief reminder about the CREATE project

How to reduce road congestion in large cities in Europe and the Euro-Med? How to encourage a change from car use to more sustainable transport modes? Historically, rapid urban growth has led to a growth in car ownership and use, and consequential increases in urban road traffic levels. These increases, in turn, are associated with a range of negative impacts, including traffic congestion, traffic collisions, social exclusion and dangerous levels of air and noise pollution.

Recently, some European cities (Berlin, Copenhagen, London, Paris, Vienna) appear to have been successful in decoupling economic growth from traffic growth – and in the process, have been able to offer urban living environments that are cleaner and less congested, while maintaining increases in living standards. Why have these cities been able to achieve this turnaround, and what lessons can be drawn for other parts of Europe and the Euro-Med?

To answer this fundamental question, the CREATE project (Congestion Reduction in Europe, Advancing transport Efficiency) brings together a team of international analysts in order to explore historical patterns of urban road traffic and car use to identify success factors in encouraging modal shift and lessons learnt in Western European capital cities, and to work with Eastern Europe and Euro-med city partners (Adana, Amman, Bucharest, Skopje and Tallinn) to assist them in developing sustainable strategies.

Further information available on the CREATE Website: <http://www.create-mobility.eu/>

1.2 About Work Package 4 in the CREATE Project

How to account for the shift away from car-oriented policies towards sustainable urban transport policies?

As part of the CREATE project, the primary goal of Work Package 4 (WP4) is to analyse the historical ‘Transport Policy Evolution Cycle’ processes in Stage 3 cities, i.e. five Western European capitals (Berlin, Copenhagen, London, Paris and Vienna): Can we identify similar qualitative drivers of change across European cities? What are the main differences between cities and how to account for them? To what extent does the analysis of policy developments over time helps us make sense of recent policy choices and deadlocks? This is done by identifying the qualitative and contextual drivers that have enabled – or hindered – a shift from Stage 1 “urban congestion growth” to Stage 3 “encouraging sustainable mobility and liveable cities” policies. It also contributes to highlighting lessons to be learnt in order to speedup these processes in Stage 1 cities.

The work done as part of WP4 is coordinated by Dr. Charlotte Halpern, at Sciences Po, Centre d’études européennes et de politique comparée (CEE), CNRS, Paris.

This document, **D4.2 Berlin report**, is part of the second series of technical reports produced as part of WP4 during Task 3, “Qualitative analysis of transport policy development cycle processes in the five Stage 3 cities during the Shift from Stage 1 to Stage 3”. It seeks to develop a comprehensive qualitative analysis of the historical development of policies relating to traffic congestion and car use over the past four decades. It investigates the ways in which transport policies are designed and implemented in the five Stage 3 cities, how they have evolved over time, which policy mix has been favoured at different times, their intended/unexpected effects, and how coordination has been ensured.

By highlighting discrepancies between policy choices and policy results, D4.2 reports contribute to understanding the shift away from car-oriented policies towards alternative transport policies in different city contexts.

This is done across the 5 cities as follows:

- Explore urban sustainable policy dynamics by looking at three policy dimensions:
 1. policy objectives (i.e. Which are the main policy documents? How are the power and resources distributed among different levels of government? Major policy reforms? Proposed, passed and failed measures?),

2. policy structures (i.e. what are the main resources: legal, financial, organisational? Evolution of budgets? Organisation charts? Creation of new agencies?)
 3. policy instruments (i.e. regulatory/legislative, economic/fiscal, agreement-/incentive-based, informative/ communication-based).
- Map out the evolution over time since the policy shift began by explaining the dynamics of issue salience, institutional and political changes, as well as changes in the governance of transport.
 - Understand how controversies regarding urban sustainability policies were resolved by looking at policy results (failed/accepted measures).

The completion of Task 3 draws on the work done in Tasks 1 and 2, as introduced in the 1st WP4 Technical report. This introduced the common analytic framework, methodology and data collection strategy that is applied in WP4, provided a first assessment of the spatial and chronological perimeter it targets, and a brief mapping out of multi-level institutional and transport governance settings in the five Stage 3 cities, including a chronology of the shift from Stage 1 to Stage 3. Data sources include policy documents, proposed and passed measures, yearly budgets, and expert interviews with key policy actors.

The work achieved as part of WP4 is complementary to other work produced as part of the CREATE project. Particularly noteworthy is the work done as part of WP3 and D3.2 reports, which introduces transport supply data and policies influencing travel demand in each city. When relevant, specific sections from D3.2 reports are referred to. This will be done systematically during Task 4, and as part of WP5.

1.3 About this document, D4.2 Berlin report

This D4.2 Berlin report develops a case study of this specific Stage 3 city. A preliminary draft was produced by Ann-Karthin Bersch in October 2016. It was then completed by Dr. Charlotte Halpern (Sciences Po) (February 2017) in order to provide an analysis of transport policy developments in Berlin. It provides key data and high-level interpretations for this case to feed into the wider cross-city analysis of transport policy evolutions being undertaken for Work Package 4 of the CREATE project.

More precisely, each D4.2. report includes the following information:

- A short summary
- Context: socio-demographic changes, major evolutions in urban development
- Institutional and political arrangements
- The governance of transport
- The organization of transport, including the transport offer
- Main policies, measures, or projects
- Brief conclusion about the 3 stages approach
- References, including grey literature and major policy reports, main publications about urban governance and transport

This D4.2 Berlin report is not of itself a definitive synthesis of transport policy evolutions and their causes in Berlin, but rather it is a compendium of resources, with some basic interpretation, to feed into this further analysis. It is complementary to the work produced by SenStadtUm, as part of WP3, which reviews transport supply data and policies influencing travel demand in the city.

Where opinions are expressed about the causes of change or the significance of specific aspects, these are with the sole intention of guiding further analysis under the CREATE programme and to act as a starting point for that further analysis.

1.4 Short summary of D4.2 Berlin report

The D4.2 Berlin report examines the evolution of Berlin's transport policy in order to understand the shift away from car-oriented policies towards alternative transport policies. The main objective of the case study report is to identify those factors – or combinations of factors – that explain transport policy change over time. Which policy objectives, instruments and measures were introduced? How were they elaborated? By whom? Were they successfully implemented?

It shows that despite major dramatic political changes, there is a certain level of continuity in Berlin's transport policy development. The pivotal role of public transport and more specifically, of rail-based networks, is ensured through long term and robust forms of governance combined with within-policy dynamics in the transport sector. The integrated approach to transport, that emerged in West-Berlin in the late 1980s and which has

become the core of the city's policy since the early 2000s, accounts for such continuity insofar as it seeks to make public transport as attractive as possible in order to provide a strong alternative to car use, while at the same time favouring incentives rather than constraining approaches to car use. In addition, the status of other modes of transport remained ambiguous until the recent period, thus leading to recent controversies. These results confirm the originality of the analysis carried out in WP4 for the understanding of transport policy developments in Berlin.

The report is structured in two main sections. First, several drivers of transport policy change are examined successively: socio-demographic changes, institutional and political factors, main stakeholders and the way they relate to one another, the organization of transport and, finally, some major controversies over transport policy developments. Second, the shift away from the automobile is analysed through the lens of public policy change, by looking successively at the evolution of policy objectives, measures and tools.

In the conclusion, the report discusses current challenges in transport governance and policies in the context of Berlin, and the extent to which it holds some valuable lessons for other cities in the CREATE project and beyond, that underwent similar abrupt and radical changes in the recent years.

2 Introduction to the Berlin case study

Berlin constitutes a definite challenge for the « Transport Policy Evolution Cycle » approach and on a practical level, for the sequencing of historical transport policy developments. The city's unique history between 1945 and 1990 often justifies presenting it as a special case that is not representative of other European cities. Since the Reunification in 1990, Berlin is still often referred to as the “divided city” and the city's partition had some profound effects on urban development and transport policy developments.

Following World War II (WWII), many parts of the city were destroyed or left with considerable reconstruction needs. The city was divided into two entities belonging to two different states and in which two fundamentally different ideologies dominated every dimension of their respective urban societies. Allied forces occupied Berlin and divided it into an Eastern part, which was administered by the Soviet Union, and a Western part, that was jointly administered by Western forces. Throughout the Cold War period, the identity, the functions and representations associated to each part of the divided metropolis were different (Wettig, 1999, 166). East Berlin became the capital of a centralized state, the German Democratic Republic (GDR), and as such, was the location of most functions and the beneficiary of most scarce resources (Süss, 1999, 195). By contrast, West Berlin became a West German (FRG) exclave, deprived of its capital functions but nevertheless considered an important symbol for German unity and as such, the recipient of a large number of subsidies and other supplies. The city's division also led to strongly demarcating West-Berlin from its periphery, a trend that was exacerbated after the construction of the Wall in 1961.

Yet, when analysed in a longer time perspective and taking into account some pre-WW II features, transport policy developments also highlight some long-term, robust institutional traditions in transport policy and governance such as the role of public transport as the main alternative to car use, or the Berlin Senate's authority over the organization of transport. This has been repeatedly confirmed since the Reunification and constitutes a key dimension of the integrated approach to transport that has dominated transport policy developments in Berlin since the early 2000s.

The main objective of this report is to single out those factors that contributed to transport policy developments in Berlin. By contrast to analysis that focuses on the post-Reunification period, **this report argues that such changes over time, which eventually led to the reduction of car use, are only partly explained by the city's division.** Following the suggestions made by interviewees during the first on-site visit, as well as previous work done on Berlin (Halpern and Häussermann, 2003), we made two major choices: 1) in the case of Berlin, it makes sense to go back further in time in order to take into account long-term policy dynamics and to question their legacy over recent developments; 2) we chose to focus on West Berlin for the 1961-1990 period.

Data availability and main sources

The case of Berlin relied on a different research support than other cases in WP4. First, data accessibility and collection for the pre-1990 period raised specific issues. Several planning documents were produced during the timeframe of analysis in WP4, and those produced before 1994 were analysed in detail (Aust, 2002).¹ During the Cold War period, two types of planning documents were developed in parallel:

- The *Baunutzungsplan* (Construction use plan - BNP) and the *Flächennutzungsplan* (Land use plan - FNP) in West-Berlin;
- The *Generalbebauungsplan* (General construction plan – GBP) in East-Berlin.

Following the reunification, strategic planning documents were introduced in combination with interstate agreements and treaties (see above):

- *Flächennutzungspläne* (Land use plan - FNP) since 1965
- *Nahverkehrspläne* (Mobility plans – NVP) since 1998
- *Stadtentwicklungsplan Verkehr* (Urban development plan for transport - StEP Verkehr) since 2003.
- *BerlinStrategie* (Strategic planning document) since 2005.

¹ It was edited by the Berlin Senate and is available here:

http://www.stadtentwicklung.berlin.de/planen/fnp/pix/historie/Berliner_Plaene_1862_bis_1994.pdf

Important changes in policy objectives were also discussed as part of *ad hoc* consultation procedures:

- *Stadtforum*
- *Runder Tisch Verkehr 1 & 2*²

Sources

The work done on planning documents was completed, for the recent period, through different sources. CREATE Partners in Berlin produced a short city questionnaire (Fiechtner, Menge 2016), and research support for accessing statistical data, public reports, archives and press archives. No workshop was organized³, but rather a number of face-to-face interviews with policy-makers, experts and stakeholders in the transport policy domain were conducted by Charlotte Halpern (January 2016), followed by a series of phone interviews conducted by Charlotte Halpern and Ann-Kathrin Bersch (September 2016). Interviewees were asked to identify, explain and discuss transport policy developments marking the shift from a car centric to sustainable transport policy.

The report also benefited from the work done as part of WP3 (D3.2 Berlin report, presentations made during the WP3 workshop⁴) and more generally, as part of the CREATE project's consortium meetings.

Data collection was systematized as part of the completion of the WP4 database. This was achieved by the Sciences Po, CEE team (Ann-Kathrin Bersch, Charlotte Halpern, Simon Persico)⁵.

Report outline

The report is organized as follows. The first section introduces major socio-demographic changes and their impact on urban development, together with the organization of transport. The evolution of transport policy objectives and measures over time is analysed in more detail in the section two. Third, the report discusses more specifically the relevance of the three-stages model in the case of Berlin and underlines, against all odds, the importance of long term and robust policy dynamics.

² Introduced as part of the StEP-process and since then integrated in most long-term planning processes.

³ For a presentation of the methodology used in WP4, see D4.1 technical report (Halpern, Persico, 2016).

⁴ See Fiechtner et al. (2016), the WP3 workshop, which took place at Sciences Po, Paris, 8-9 March 2017.

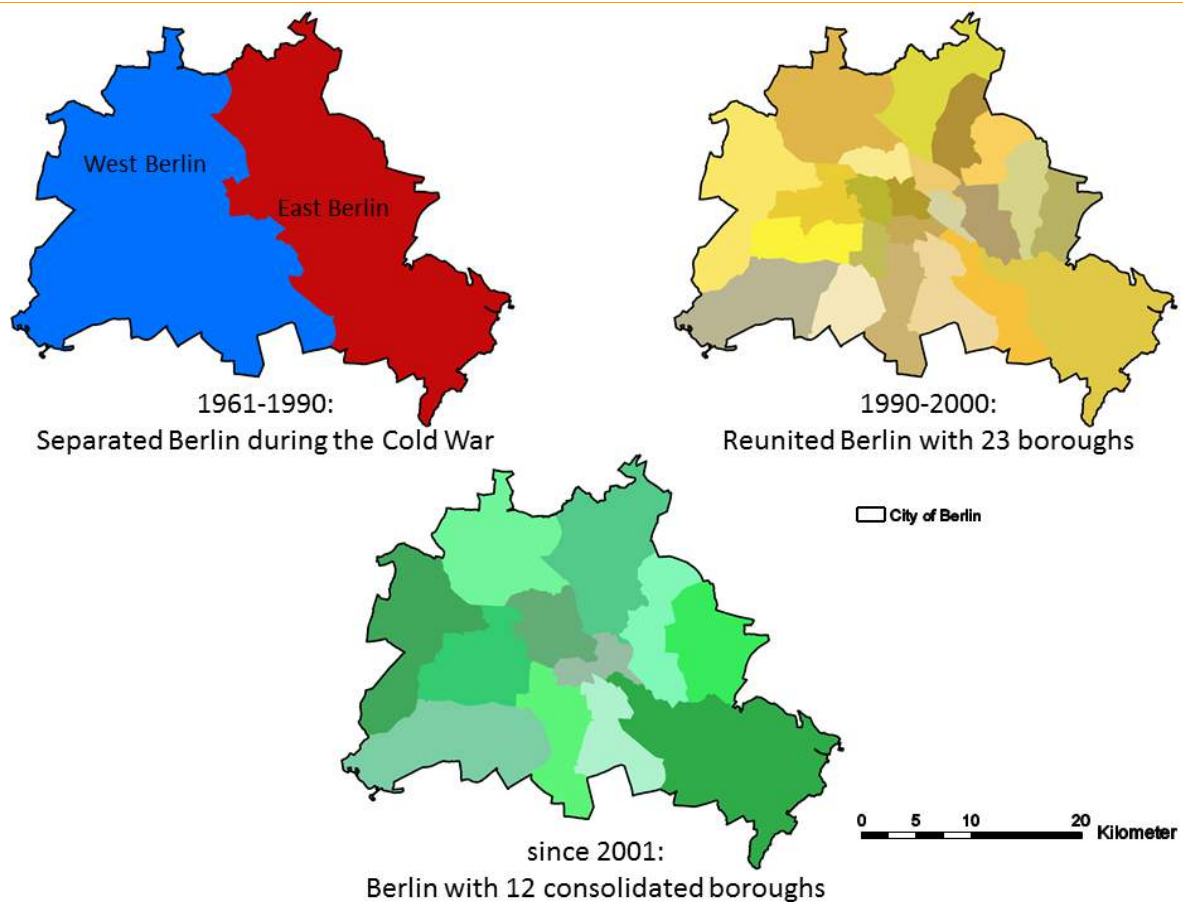
⁵ This case study has also benefited from the work done outside the CREATE project by Charlotte Halpern on forms of urban governance in Berlin as part of her PhD (Halpern, Häusserman, 2003; Halpern, 2006).

3 Major drivers of transport policy change in Berlin

In this section, specific elements of context (demographic, social, administrative, etc.) are considered successively.

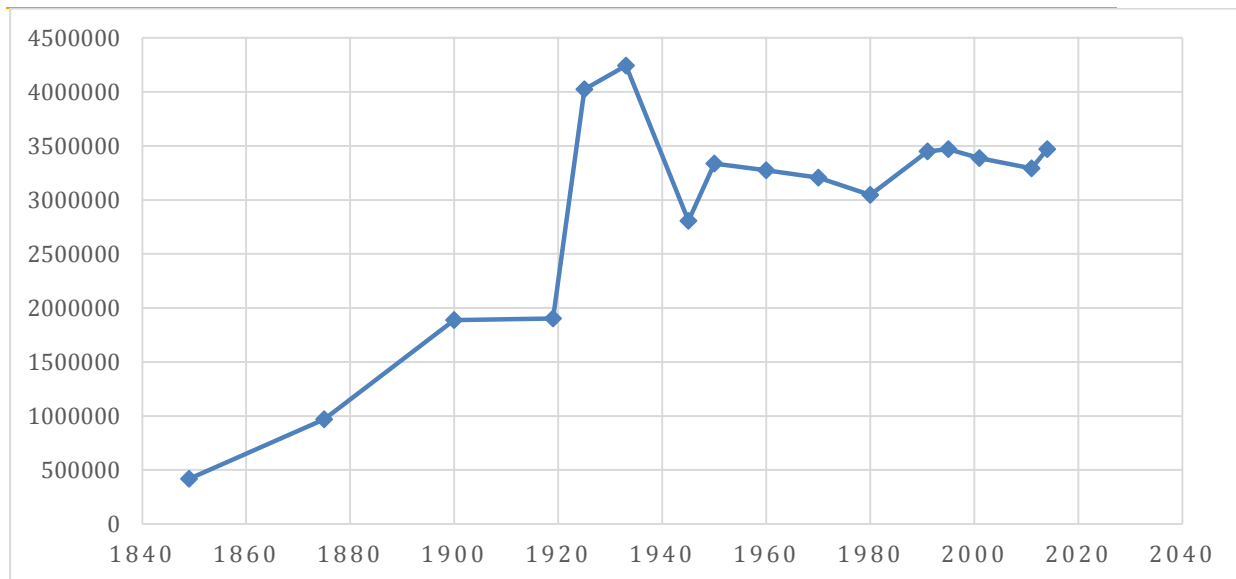
The area under scrutiny under WP4 is that of the “Land”. It covers a total surface area of 892 km², with the Inner city – within the S-Bahn Ring – covering almost 90 km. Since the Reunification, it was established as a city-state and counts among the 16 German Bundesländer. It is composed of 12 boroughs (23 until a reform in 2001) (see Maps 1a-c, 2 and 3 below), and the metropolitan region extends beyond the Land’s limits into Brandenburg (almost 30,000 km²). When considered together with these surrounding areas, the Berlin Brandenburg metropolitan region covers approximately 2,800 km². This raises specific issues of coordination between the two Länder in a large number of policy areas, including transport.

Maps 1a & 1b. The divided city of Berlin (West and East Berlin) and the reunified city with 23 boroughs.



Source: SenStadtUm, extracted from CREATE Project, D3.2 Berlin report, p. 12.

Figure 1. Population growth in Berlin between 1849 and 2015.

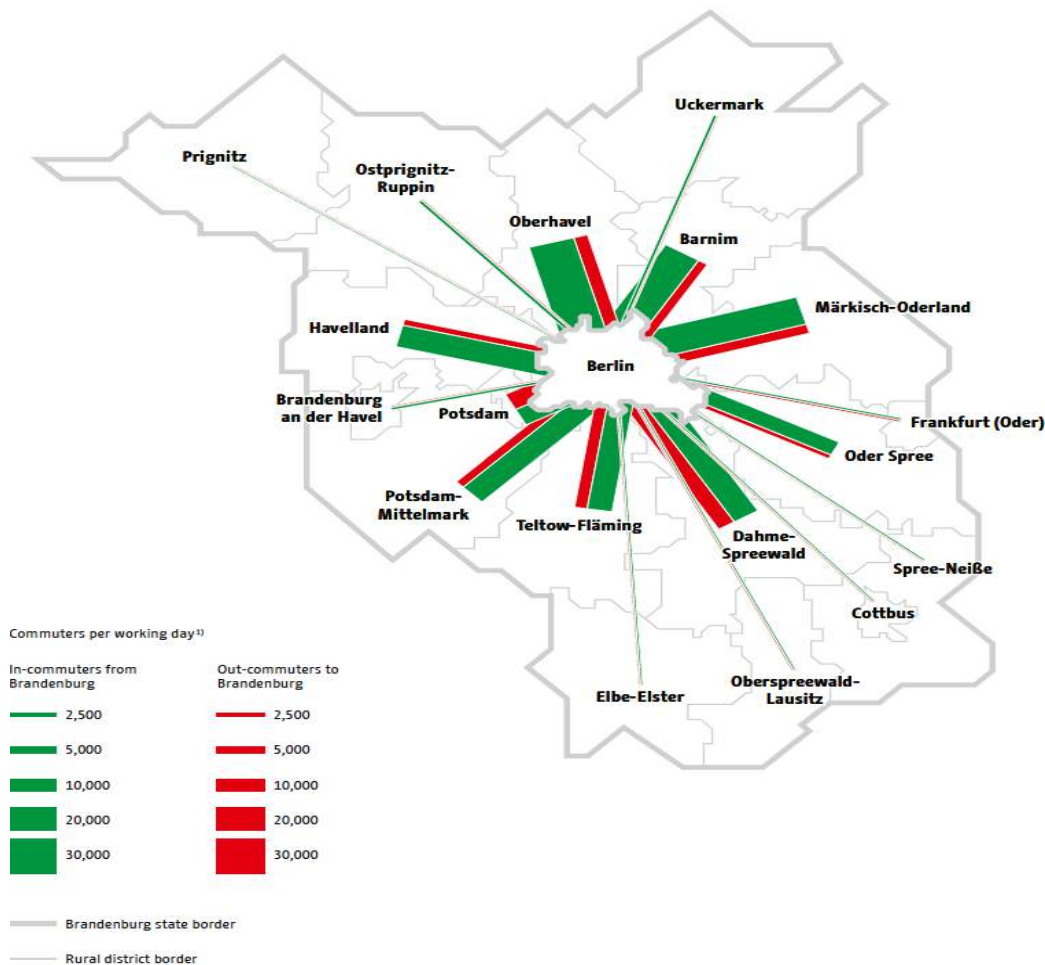


Source: CREATE D4.1 report – Reconciled from various sources.

Three key policy principles were introduced, which to this date, continue to structure transport policy developments in Berlin: 1) a railway-based urban and regional network in the form of a star, 2) transport planning as a strategic tool for urban planning, or the co-called “star settlement structure” (*Siedlungstern*) that planned for the city to develop alongside rail-based transport infrastructures (railway, subway) (Interview Kunst, 20/01/2016), 3), and a public-led urban transport system. When the population reached its peak in 1920, many new lines were built in order to accommodate rapidly increasing transport demand (Interview SenStadtUm Verkehr 1). Additional expansion in transport infrastructure took place during the 1960s in the Eastern part of the city, but apart from that, much attention was given to the organization of transport and to the management of infrastructures that were used below their capacity.

In the context of post-reunification euphoria, demographic projections foresaw a rapid population and economic growth up to 3,7 million in 2010 (1994 FNP). Yet these optimistic forecasts were not realised as the population decreased continuously, due to rapid socio-economic changes and the flight of middle-class families towards Berlin’s surrounding areas in Brandenburg (see Map 2).

Map 2. Commuters to and from Berlin in 2013.



Basis: Registered employees subject to social insurance in Berlin at 30.06.2012.

Source: Employment statistics from the Federal Employment Agency, Nuremberg. Calculations by the Joint Statistics Office for the States of Berlin and Brandenburg. Content processing: LK Argus GmbH. Extracted from StanStadtUm, Mobility in the City. Berlin traffic facts in 2013, p.18.

http://www.stadtentwicklung.berlin.de/verkehr/politik_planung/zahlen_fakten/download/Mobility_en_komplett.pdf

As shown in Figure 1 demographic trends in Berlin since the reunification can be broken down into three – sometimes overlapping – stages⁸:

- Between 1991 and 1993, there was a small increase in population numbers due to foreign immigration,
- Then, until 2000, the population decreased due to rapid suburbanization. Commuter flows, which had remained low in comparison with other German cities due to limited mobility in both West- and East-Berlin, increased rapidly (Rytlewski, 1999, 303; Florentin et al., 2009). By contrast, population rose steadily in adjacent municipalities in Brandenburg, thus contributing to the formation of the new suburbs (*Speckgürtel*) and raising the need for increased cooperation between the two Länder (IRS, 2006).
- In the meantime, the relocation of capital city functions in Berlin led to a slight increase in the city's total population. This increase strengthened from 2005 onwards and since 2010 some 40,000 new inhabitants arrive in Berlin every year. As a result, what used to be considered an "underused" transport infrastructure is used to capacity again, raising once more the question of a possible extension of existing networks and the construction of new infrastructure (SenStadtUm Verkehr 1).

⁸ See also D3.2 Berlin report, p. 11-20

In addition to demographic trends, political and institutional features also account for transport policy changes in Berlin.

3.2 The role of political, institutional and administrative factors

As part of the Reunification process, a series of decisions laid the foundations for Berlin's formal political, institutional and administrative structures. The Senate's authority over policy-making at city level was confirmed. Functional forms of governance were introduced in order to formalize cooperation with the Federal government on the one hand and with the Land of Brandenburg on the other.

As argued in this section, formal political and institutional settings only partly account for today's forms of government and governance in Berlin. Other dynamics of cooperation and competition have structured relationships between levels of government and the Senate's ability to effectively steer policy-making city-wide. In addition, (in)formal social and political institutions, such as the Kieze or the Bezirke, act as alternative forms of social and political representation, and partly account for strong resistances at infra-municipal and neighbourhood levels.

3.2.1 Berlin as a city-state

The city's main political and administrative structures were stabilized after the German Reunification in 1990.⁹ Berlin was fully integrated into the German federal system as a city-state (October 1990), and following the elections in December 1990, a new politico-administrative structure was introduced with a legislative assembly and a Governing Mayor. The administrative and political borders of the "Great Berlin area", including its successive enlargements, were confirmed in the German Fundamental Law (see Table 1).

Table 1. Politico-administrative arrangements in the Greater Berlin area since 1808

	Politico-administrative structures	Formalized inter-municipal / -regional cooperation
1808	Berliner Städteordnung, first elected Parliament and Oberbürgermeister	
1850	Berliner Stadtverfassung und Gemeindeordnung	
1911		Zweckverband Groß-Berlin« (Gesetz vom 19.7.1911)
1920	Gesetz über die Bildung einer neuen Stadtgemeinde Berlin (Groß-Berlin-Gesetz). It joins together 8 municipalities (Alt-Berlin, Charlottenburg, Köpenick, Lichtenberg, Neukölln, Schöneberg, Spandau, Wilmersdorf), 59 rural communities and 27 districts from Metropolitan Berlin.	
1942	Other entities join the Great Berlin area, e.g., Zehlendorf.	
1949/1950	Great Berlin – and its 20 Boroughs - is confirmed in the 1949 German Fundamental Law, and the Berlin Constitution (1950).	
1961-1990	Adjunction of 3 additional Boroughs to East-Berlin: Marzahn (1979), Hohenschönhausen (1985), Hellersdorf (1986)	
1990	Berlin as a City-State (Land). The Great Berlin area is confirmed, including the adjunctions made since 1920.	
1996		Cooperation between Berlin and Brandenburg (Landesplanungsvertrag)
2001	Administrative reform: 12 Boroughs (instead of 23).	

Source: Compiled from different sources by Halpern, CREATE D4.1 report, p.37.

The Berlin Senate was confirmed as the most important level of government for making and implementing local, federal and European policies in the metropolitan area. Nevertheless, as highlighted below (section 4), the Senate's political capacity to develop and implement city-wide policies is also weakened by administrative and political fragmentation. This is particularly the case with coalition governments, in which the distribution of administrative portfolios between political parties contributes to politicising relationships between

⁹ During the transition year in 1989-1990, the *Magisena* – a common legislative Assembly made of the East Berlin Magistrat and the West Berlin Senate – agreed that West Berlin's administrative and political system would be extended to the city as a whole.

administrative departments and increasing resource-seeking strategies within the city's administration. The Mayor's authority cannot overcome this fragmentation¹⁰ and their ability to exert direct control on the activities undertaken by the Senators is low. Each of them is free to develop a policy strategy in conformity with their own interests, within the limits of its competences and capacity to negotiate with their administration. In the case of the transport administration, increasing tensions between political objectives and administrative traditions on the one hand, and between administrations working in silo on the other hand, have led to successive organizational changes (see below).

Finally, as part of the Reunification process, a series of political decisions laid the legislative basis for joint actions for the Land of Berlin and the Federal government. Berlin was established as the German capital-city (*Hauptstadtvertrag*) and, as such, it hosts parts of government institutions (Berlin-Bonn Act). In addition, the city-state of Berlin was compensated for the expenses related to its capital status (*Hauptstadtfinanzierungsvertrag*), including transport infrastructure developments. In total, three policy documents were elaborated between the federal State and the Land Berlin:

- The treaty establishing Berlin as the capital (*Hauptstadtvertrag*) (August 25, 1992)
- The Berlin-Bonn Act (April 26, 1994), which states in detail how government offices will be distributed between the two cities
- The treaty providing compensation by the federal government to the city-state for expenses related to its status as a capital (*Hauptstadtfinanzierungsvertrag*) (June 30, 1994).

This Berlin-specific policy framework also extended to implementation stage. An urban planning programme was formally adopted by the Senate in 1993 under the name of "Development measures for the Berlin capital-city – Parliament and Government district". Among other policy priorities, the development and expansion of infrastructure befitting a capital city and 21st Century metropolis were considered a major priority.

Apart from these Berlin-specific decisions, additional provisions were made at Federal level in order to prioritize policy development goals in each policy domain and in the case of shared or exclusive powers of the Länder, the concrete policy tools through which the Federal government would effectively contribute to the reunification process. This suggests the pivotal role played by the Federal government in transport policy developments in the capital-city, either through direct interventions (i.e., infrastructure projects) or indirectly, as a major investor, land owner and developer.

3.2.2 (In)formal forms of social and political organization at the infra-municipal level: Kieze and Bezirke

Other (in)formal social and political institutions, such as the *Kieze* or the *Bezirke*, are also *de facto* forms of government and governance in Berlin. They were inherited from the choices made in 1920, when Great Berlin was formally created and brought together some 94 entities of diverse size and status (Rytlewski, 1999, 295). To a large extent, they still shape politics and policy-making in Berlin and combine somewhat uneasily with formal politico-administrative structures.

Kieze or neighbourhoods are usually concentrated around one large recreational or common public space. It is considered an "almost village like" type of community (Rytlewski, 1999, 305), which is mainly organized through citizen initiatives, later also by the Senate. This informal level of social organization was revived during the 1970s in the context of West-Berlin. As decreasing demographic and economic growth threatened existing infrastructures and housing, small-scale urban regeneration projects were developed at the neighbourhood level as part of citizen initiatives. In some cases, such as Kreuzberg, it was considered a dynamic source of social and policy innovations that successfully shaped policy change city-wide in a number of policy domains.

Bezirke or districts enjoy an ambiguous status in the political and administrative system of Berlin. Historically, *Bezirke* were considered a solution to difficult negotiations between municipalities prior to the creation of the Great Berlin in 1920. Two different approaches were advocated: one that favoured the creation of a centralized, new municipality (Groß-Berlin) and another one, that favoured a form of loose cooperation on specific

¹⁰ According to the Constitution of the Land of Berlin, the power of the Mayor derives more from their position as head of the ruling party than as "first among equals" within its cabinet.

issues (administration union – *Zweckverband*. 20 Bezirke were created from pre-existing localities that joined together in order to form the Great Berlin, and later expansions led to a total number of 23 Bezirke in 1990. The main rationale was to reduce inequalities in living conditions across the metropolitan area. Nevertheless, as they enjoyed a large degree of autonomy, the Bezirke were able, in some cases, to challenge the Senate's authority (Strom 2001).

This justified a major administrative reform was introduced in 2001 (Kuhmann et al., 2016). The number of Bezirke was reduced from 23 to a total of 12 (see Map 3), and they were recognized as management units. They still have some legislative power and some autonomous budget, but their financial autonomy was reduced¹¹. Nevertheless, the population considers this level of government as essential to the expression of local identities and democracy. They play an active role in both policy design and implementation, and are still considered major veto-players. Bezirke are indeed instrumental to minority political parties in their opposition to the big coalition (e.g., the Greens, Die Linke, etc.) and to those groups (e.g., civil society organization, etc.) that challenge the Senate's city-wide authority during policy-making and implementation. Their main resource consists of their right to oppose some urban development projects¹² which concern their own territories, or in forging alliances with civil society organizations. In some specific cases, their role is not limited to veto-power and they also are considered a preferred level for social innovations and policy experimentations (Halpern and Häußermann, 2003).

Both the Kieze and the Bezirke are important elements of the “*politics of the middle*” which will be analysed in more detail below.

Map 3. Berliner Bezirke (after 2001 reform) and the (present) consolidated city with 12 boroughs



Source: SenStadtUm, 2015.

“Politik der Mitte” and the search for consensus-oriented politics.

Forms of governance at the City level in Berlin are sometimes referred to as a “consensus-oriented form of urban democracy” or the “politics of the middle” (Politik der Mitte) (Rytlewski, 1999, 315). This holds a double meaning: first in relationship to the political landscape, as the middle ground between left and right-wing politics, and the search for compromise instead of ideological confrontation; second, it also refers to the type of policy knowledge and expertise produced by political parties and social groups, which also prioritizes consensus and problem-solving in order to ensure political stability and growth in the city. By contrast to this form of consensus-oriented politics, politics at infra-municipal level are referred to as “centrifugal forces and the expression of self-

¹¹ More details available here: Gesetz über die Zuständigkeiten in der Allgemeinen Berliner Verwaltung (Allgemeines Zuständigkeitsgesetz - AZG): <http://gesetze.berlin.de/jportal/?quelle=jlink&query=VwZustG+BE&psml=bsbeprod.psml&max=true&aiz=true>

¹² For example, parking management is implemented and organised on the level of the Bezirke.

interested groups" (Ibid.), as they seek to ensure the representation of local and individual interests at a higher political and administrative level.

This form of governance emerged in West Berlin in the context of the Post-WWII period and in an attempt to reconnect with political traditions from the Weimar Republic. Against the background of radical approaches during the Third Reich, like the plans of creating the Welthauptstadt Germania ("World Capital Germania") and by emphasising continuity in Berlin's political history, there was a feeling that it was not necessary to develop and implement "new solutions". Thus, instead of innovative, radical approaches to build a "new city", a more traditional approach to policy issues was chosen in order to allocate subsidies and public resources with the support of a large number of political, social and economic actors. Together, these arrangements contributed to creating a "large-scale, polycentric urban political landscape of Bezirke and Kieze, with a socially mixed distribution in neighbourhoods, facilitating the implementation of this *"politics of the middle"*" (Ibid.).

This form of governance was strengthened through the political system and relationships between the two largest political parties, i.e., the Christian- (CDU) and the Social-Democrats (SPD). Until 1989, both parties always sought to make an effort to build a coalition, even if one of them had obtained a clear political majority. Either the Christian-democrats or the social-democrats were members of the coalition in power. It wasn't until the mid-1970s that alternative approaches were advocated by social movements and new political forces (Mayer, 1997). From then on, there was an erosion of large parties, and the political spectrum was enlarged by the development of new political parties, such as "the alternative list", a green-ecologist party. The first "red-green" (SPD with the green party) coalition was established in 1989.

In East-Berlin however, the city was governed through a one-party-system, in which centre-block parties (*bürgerliche Blockparteien*) entered a coalition with the Socialist Unity Party of Germany (SED). After the reunification, the SED was transformed into the Party of Democratic Socialism (PDS) which underwent a slow process of democratization until it eventually merged with other small left-wing political parties into Die Linke in 2007.

3.2.3 Reuniting two urban societies: post-Reunification challenges

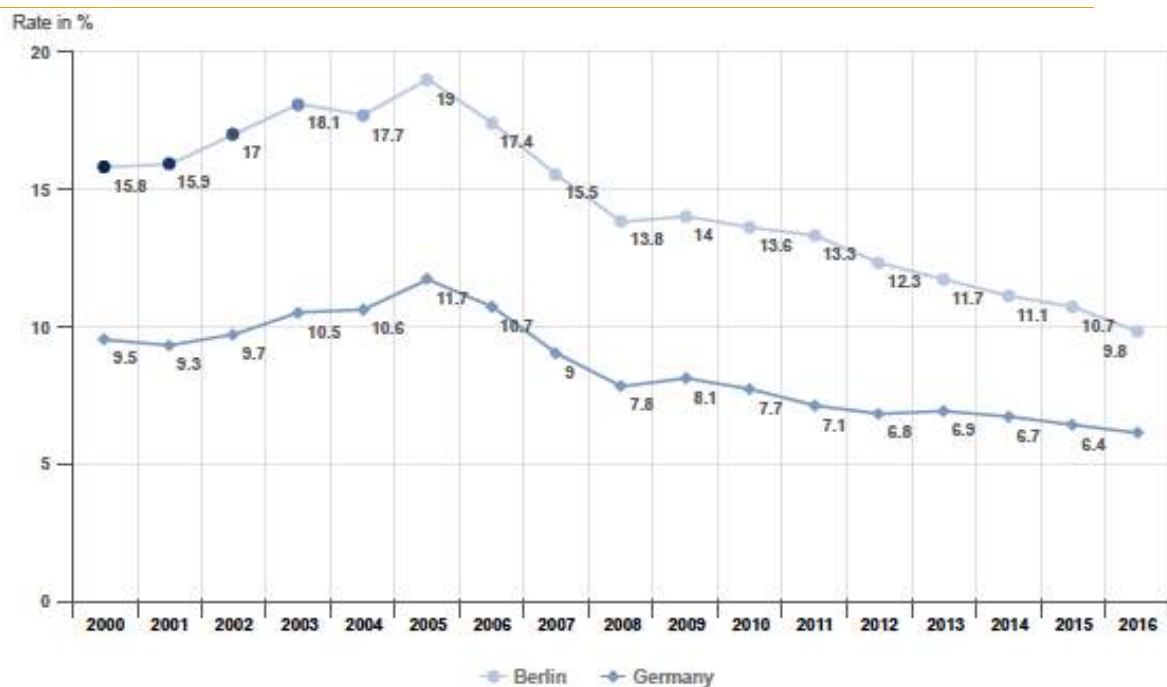
Following the Reunification, and as part of the process through which an authoritarian political regime and a centrally planned economy transitioned to the revival of parliamentary democracy and market economy – i.e. Die Wende –, this form of governance was re-enacted and extended to the entire city in order to effectively reunite two urban societies (*Stadtgesellschaften*) that had been separated since 1948 from a political, a social and an economic perspective. This large-scale restructuring had a profound – although differentiated – impact on both parts of the city.

From the socio-economic point of view, the local employment market was deeply shaken by structural changes (Krätke, Borst, 2001). Even though problems were unevenly spread across the city, both West- and East-Berlin were concerned. The former lost its subsidies, 2/3 of jobs in the industry sectors were eliminated and a large number of companies left the city, whereas in the case of the latter, the transition to the market economy led to the suppression of a large share of pre-existing companies and jobs. Following the first years of the Reunification, the tertiary sector remained weak, the industrial sector decreased drastically (400.000 in 1993 to 170.000 in 1996), and severe cuts in public sector employment were introduced (298.338 in 1991 to 199.298 in 1998) (Mäding, 2002). Unemployment rates increased from 13 per cent in 1993 to 19 per cent in 2005, when it reached its peak (see Figure 2 below). As of today, unemployment rates in Berlin amount to 9,8 per cent and remain well above the federal average, especially among the 15-25 years-old group (13,2 per cent), and some 300.000 people depend on national welfare support (Hart IV) or are employed in "one-Euro-jobs".¹³ These rapid economic transformations and the reduction of public resources also hastened the increase in social and spatial inequalities in both parts of the city (Häußermann and Kapphann, 2000). Some 25 years after the reunification, East-West economic and social differences have decreased but continue shaping the city's geography in a number of areas (i.e., unemployment, housing accessibility, education, health, etc.).¹⁴

¹³ Federal Employment Office, January 2017.

¹⁴ See reports and data published on a yearly basis since 2006 by SenStadtUm, "Monitoring Soziale Stadtentwicklung": http://www.stadtentwicklung.berlin.de/planen/basisdaten_stadtentwicklung/monitoring/de/2015/karten.shtml

Figure 2. Unemployment rate in Berlin compared with Germany.



Source: Bundesagentur für Arbeit, 2017.

From the political point of view, politics in Berlin are, on the one hand, fully integrated to the Federal political party system and on the other hand, retain some specific features related to its political history. Following the Reunification, West-Berlin's political system and traditions were extended to the city as a whole. Putting an end to a short red-green experience, the "big coalition" re-joined and remained in power until the early 2000s (see Table 2). Yet a closer look at regional elections' results, including the last election in September 2016, shows remaining differences between both parts of the city. Only the SPD and the Greens developed evenly across the city. Die Linke is mainly represented in the eastern part of the city, whereas the CDU and the Liberals (FDP) are mainly represented in the western part of the city.

In a reunified Berlin, issues related to its expansion and to the development of new connections and forms of cooperation with its periphery (*Umland*) emerged on the agenda again (Quast, Schröder, 1999, 435). A number of families and small enterprises moved out of Berlin. Suburbanization and urban sprawl benefited Berlin's immediate surroundings in Brandenburg, whereas Berlin's population decreased. In a number of policy domains, including transport, the need for inter-state cooperation was particularly vivid within the area of the large agglomeration (*Verflechtungsraum*). Yet, relationships with municipalities around Berlin had been difficult for both parts of the city: in the case of West-Berlin, due to the city's insularity, and in the case of East-Berlin, due to post-WWII agreements between allies about Berlin's status, i.e., the four-power status". Until the wall was built, the borders of the Soviet sector were controlled when entering from the GDR territory. Furthermore, as the GDR's capital-city, East-Berlin benefited from the over-centralization of already scarce resources.

Several attempts were made in order to increase cooperation between *Länder* and ensure the formal representation of metropolitan interests. At first, a merger between both *Länder* was considered: a referendum was organized in 1996 and failed, due to a large opposition from voters in Brandenburg. This confirmed that the political sense of belonging among the population had not evolved at the same pace (Ibid.). Nevertheless, new forms of cooperation were developed. A joint planning authority was created in 1996 (Gemeinsame Landesplanung Berlin Brandenburg, GLBB) as an attempt to formalize inter-state relations within the so-called "Hauptstadtregion Berlin-Brandenburg" (capital city-region). In those policy domains, such as public transport, in which the need for functional cooperation was particularly high, issue-specific cooperation agencies were created. This includes the Verkehrsverbund Berlin-Brandenburg (VBB) that addresses the growing commuting traffic between the two *Länder*.

Table 2. Elections for Senate (1990-2016)

	02/12/90	22/10/95	10/10/99	21/10/01	17/09/2006	18/09/2011	18/09/2016
CDU	40,4	37,4	40,8	27	21.3%	23.4%	17,6%
SPD	30,4	23,6	22,4	29,7	30.8%	28.3%	21,6%
PDS / Die Linke	9,2	14,6	17,7	22,6	13.4%	11.6%	15,6%
FDP	7,1	2,5	2,2	9,9	7.6%	1.8%	6,7%
Bündnis 90 / Die Grüne	9,3	13,2	9,9%	9,1%	13.1%	17.6%	15,2%
Piraten						8,9%	
AfD							14,2%
Ruling Mayor	Eberhard Diepgen	Eberhard Diepgen	Eberhard Diepgen	Klaus Wowereit	Klaus Wowereit	Klaus Wowereit (steps down Dec. 2011), replaced by Michael Muller	Michael Muller
Coalition	Big coalition (CDU-SPD)	Big coalition (CDU-SPD)	Big coalition (CDU-SPD)	Red-Red coalition (SPD-Die Linke)	Red-Red coalition (SPD- Die Linke)	Big coalition (SPD-CDU)	Red-Red-Red coalition (SPD, Die Linke, Grünen)

Source: Compiled by Halpern, mostly from Die Landeswahlleiterin für Berlin: <https://www.wahlen-berlin.de/>

NB: Only those political parties that achieved more than 5 per cent of votes and are therefore represented in the Berlin House of Parliament are included here. Piraten (Piratenpartei Deutschland) was created in 2006. AfD (Alternative für Deutschland), is a right-wing populist and Eurosceptic political party created in 2013.

3.2.4 Concluding remarks

The city's partition still accounts for remaining social, political and economic differences between both parts of the city, and partly explains why policy trajectories across a large number of policy domains are unique when compared with other west European cities. In the post-reunification context, most efforts were concentrated in the inner S-Bahn ring area, while connections¹⁵ with Brandenburg were progressively developed with the support of the Federal State and in order to meet with the profound changes taking place on both sides of Berlin's administrative borders, including growing commuter flows (see section 4). Relationships between levels of government – between Berlin and Brandenburg, with the Federal State, with Bezirke – are institutionalized to some extent, but a number of recent controversies over infrastructure and urban development projects (e.g., urban motorways, airports, etc.) confirm the role of institutional and political competition in shaping interstate relations in a number of policy domains, including transport. As argued in the following section, these factors of political and institutional change in the post WWII and post reunification period are deeply rooted into – and replicated through – the governance and organization of transport in Berlin.

3.3 The organization of transport: actors, resources and logics of collective action

The governance and organization of transport in Berlin was stabilized after the German Reunification in 1990. The responsibility for planning and organizing transport rests with the Senate Department for transport. At first, the main goal was to effectively achieve the reunification through an ambitious infrastructure-led policy. Over time, increased attention was given to strengthening the Senate's steering capacity over the daily management of transport policy-making and implementation.

Despite this apparent stability, analysing the concrete organization of transport governance and policy-making suggests the need for the Senate to continuously reassert its leadership, both internally over interdepartmental dynamics and externally over other levels of government and non-state actors. In this context, the selection of new policy tools was considered an opportunity to increase coordination and reduce conflict.

¹⁵ This includes a regional train network and high-capacity long distance rail connections, and both the A 100 and the A113 motorways.

Functional forms of governance were also introduced in order to ensure cooperation with the Federal government on the one hand and with the Land of Brandenburg on the other hand.

The following section explores these dynamics in three different ways. Major actors involved in the development and implementation of transport policy are introduced (see Table 3), as are the various ways in which they relate to one another. In the remaining paragraphs, the role of civil society organizations is also discussed in more detail.

Table 3. A selective overview of transport policy actors in Berlin today

Politico-administrative Framework	Senate Department for Urban development and the Environment (2011)
Common public transport tariff	Verkehrsverbund Berlin-Brandenburg (VBB)
Public transport operators	DB Regio (regional trains)
	BVG (underground, tram, bus, ferry networks)
	S-Bahn Berlin GmbH
Other actors	Civil society and citizen initiatives
	Chamber of commerce and industries
	Public transport user's association
	Mobility lobby groups (ADAC, ADFC, VCD, ...)

Source: Adapted from Fiechtner and Menge, Berlin City report, WP4, CREATE Project.

3.3.1 Main stakeholders in Berlin's transport policy

Since 1990, the Senate Department for transport centralizes almost every dimension of transport in the Berlin Senate. One exception is the chair of the supervisory board of the Land-owned public transport company (BVG). Since 2016, the acting senator for finance had the chair, after the election the acting senator for Economics, Energy and Public Enterprises took over. The transport authority has been integrated into different Senate departments since the Reunification and successive organizational reforms have been highly politicized.

Successive organizational reforms

These reforms highlight continued tensions between different approaches to transport within the city's administration, and beyond these political and cognitive dimension- between self-interested administrations with their own policy traditions, networks of political, economic and social allies, and preferred policy tools.

From a historical perspective, one should note the absence of a consensus, within the Berlin Senate, regarding main transport policy goals and tools. This is mainly due to a profound division between transport and urban planning, which emerged during the 1920s and became prominent during the post-WWII period in West Berlin and West Germany as a whole. Traffic planning developed as an autonomous discipline and increasingly drew upon principles and tools that were imported from the United States in order to further differentiate itself from public transport planning at first, and from urban planning later on. Negative externalities played a limited role in transport planning. Until then, transport policy played an instrumental role in support for urban growth and from then on, it developed according to its own logic. Large-scale urban regeneration and reconstruction programmes were justified in the name of traffic fluidity.

In addition, three administrations played a pivotal role in shaping transport policy objectives. The Department for construction was favourable to the development of transport infrastructure, preferably highways and supported car traffic over other modes of transport. The Department for transport was responsible for traffic management. Traditionally under control of the Christian-democrats, it also favoured road transport over other modes. Last but not least, the weakest of the three from a historic point of view, the Department for urban planning and the environment considered transport as one tool for making urban development principles operational, and promoted an integrated approach to transport. While trained engineers are overrepresented in all three departments, each department drew on different professional expertise, respectively civil engineers, transport engineers and planners, and architects and urban planners. Each professional group relied upon a

specific form of technical expertise, a compartmentalized vision of how a city should be developed, and a differentiated network of actors.

This growing disconnect was exacerbated due to the political divide between Senate Departments under the Big coalition throughout the Cold War period in West-Berlin and in the reunified city since the Reunification. Since the late 1980s, the growing leadership of Social-Democrat and Ecologists over the Senate departments in charge urban planning and environment contributed to strengthening this administration, eventually leading to several organizational reforms. The decision made in 1996 to create a single, large Senate Department for Urban Development by merging these large pre-existing administrations is considered a major turning point, even though it did not lead to immediate changes in terms of policy objectives, measures and tools.¹⁶ In 2011, this administration benefited from a new addition and was renamed Department for Urban Development and the Environment (Senatsverwaltung für Stadtentwicklung und Umweltschutz, SenStadtUm)¹⁷.

Berlin's public transport authority

SenStadtUm acts as Berlin's public transport authority. This includes the following responsibilities over the local public transport network, which consists of U-Bahn and S-Bahn, urban rail systems, regional railway services, a tramway system, a bus network, a number of ferry services as well as a large number of interchange stations between the different modes (see Figure 3 below):

- 1) transport planning, organization and funding;
- 2) transport contract details, transport volumes and service qualities that operators have to provide;
- 3) compensation payments are subject to achieved levels of performance;
- 4) different "price tags" for individual transport modes.

Since the 2000s and in relation with the development of new forms of mobility and actors, this administration's role evolved from that of a public transport authority towards that of a transport regulator. The formalization of relationships with transport companies on the one hand, and the involvement a growing number of actors in policy-making processes on the other hand, highlighted the need to seek additional resources, including expertise and knowledge.

All the services provided by Berlin's local public transport network form part of the common public transport tariff run by the **Verkehrsverbund Berlin-Brandenburg (VBB)**. Since 1996, the VBB formalizes cooperation in the field of public transport between the Länder of Berlin and Brandenburg, which are represented respectively by the SenStadtUm and the Brandenburg Ministry for Infrastructure and Regional Planning. Its jurisdiction covers the city of Berlin and an area of some 15 kilometres located beyond the city boundaries. Within these boundaries, it organizes all public transport services as part of a common public transport tariff zone which is split into three zones: Zone A is the central part of the city (inside the Ringbahn), zone B is the outer part of Berlin City, Zone C covers an area beyond the city boundaries.

Transport companies

In addition to regional trains that are operated by the **DB Regio**, the ODEG (Ostdeutsche Eisenbahngesellschaft) and the NEB (Niederbarnimer Eisenbahn), two transport companies operate Berlin's public transport network:

- **Berliner Verkehrsbetriebe (BVG)**, or Berlin Transport Company.

¹⁶ A few years before the transport and the housing and construction departments had been merged.

¹⁷ Following 2016 elections, a new reshuffling of administrative portfolios took place and will only be discussed as part of this report's concluding section.

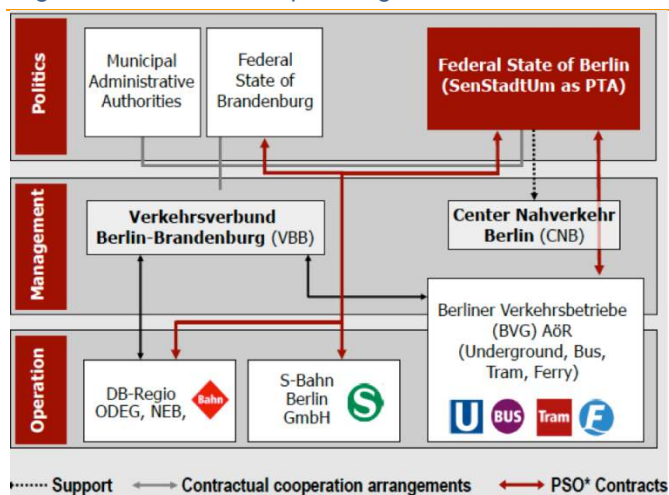
This is the main public transport company of Berlin. It manages the city's U-Bahn underground railway, tram, bus and ferry networks, but not the S-Bahn system (see below)¹⁸. During the division of Berlin, the BVG was split between the BVG (Berliner Verkehrsbetriebe Gesellschaft - West Berlin) and the BVB (Berliner Verkehrsbetriebe - East Berlin), also known as the Kombinat Berliner Verkehrsbetriebe (BVB). After the Reunification, the current formal name was adopted. BVG is 100 per cent owned by the Land of Berlin. It has a steering committee led by the Berlin Senator of finance, whereas the Senate Department for Urban Development and the Environment oversees the transport service. The BVG operates the U-Bahn, the Tram and the Bus networks, as well as passenger ferry routes.

- The S-Bahn Berlin GmbH

This company operates the S-Bahn system, which is a rapid transit railway system in and around Berlin¹⁹. Since 1994, all S-Bahn operations in Berlin were transferred to the newly formed S-Bahn Berlin GmbH as a subsidiary of Deutsche Bahn, and the BVG withdrew from running S-Bahn services. It is a 100 per cent subsidiary of the Deutsche Bahn AG and organised under the DB Regio AG. Technically, a number of projects aiming at re-establishing broken links and restoring the former S-Bahn network to its 1961 status were introduced after the Reunification, especially the Ringbahn that was completed in 2002. Today, the Berlin S-Bahn is no longer defined as a specific tariff area within the national railway network. Instead, it is considered as one among other means of regional transport, which retains specific technical features, but is nevertheless fully integrated in an area-wide tariff zone administered by a single transport authority. The Senate Department for Urban Development and the Environment oversees the transport service.

The organization of public transport in Berlin is summarized in the Figure below.

Figure 2. Public transport organization in Berlin



Source: VBB, 2015

Non-governmental organizations in the transport sector.

In addition, several **non-governmental organizations** take part in the development of transport policy, through lobbying, agenda-setting, demonstrations, citizen initiatives, etc. Some of them emanate from federal organizations, whereas others are more context-specific. Already in the 1970s and 1980s, plans to build urban

¹⁸ The generally used abbreviation, BVG, has been retained from the company's original name, Berliner Verkehrs Aktiengesellschaft (Berlin Transport Corporation), which was formed in 1928, by the merger of the Allgemeine Berliner Omnibus AG (the operator of the city's buses), the Gesellschaft für Elektrische Hoch- und Untergrundbahnen (the operator of the U-Bahn) and the Berliner Straßenbahn-Betriebs-GmbH (the operator of the city's trams). The company was renamed Berliner Verkehrs-Betriebe in 1938.

¹⁹ For a short historic account of the BVG, see the D4.1 technical report.

motorways in the Western part of the city raised the concern of citizens and led to a mobilization against large infrastructure projects and some of these initiatives remain active until today.

- **IHK Berlin (Industrie- und Handelskammertag).**

As one of the 80 'chambers' that represent companies within the German state, the IHK Berlin or regional **Chamber of Industry and Commerce** holds a formal status under German law and aims at representing the interests of economic actors while at same time remaining autonomous from the influence or interests of specific sectors, industries or companies. It is regularly consulted by the Senate and seeks to exert influence over a large number of policy issues. In the field of transport, the IHK Berlin supports the development of efficient transport systems and a transport policy that ensures the economic growth of the region. It also supports the development of transport infrastructures, such as the extension of the urban highway network in the east and improvements in the rail and the waterway networks.

- **IGEB (Interessengemeinschaft Eisenbahn, Nahverkehr und Fahrgastbelange Berlin e.V.)**

It is the most important passenger association in Berlin. It was established in the context of growing discontent with the service operated by the German National Railroad in West Berlin in 1980, on the mainline carrying out transit traffic into the FRG. The lack of integration of the S-Bahn system into the BVG network, which led that same year to the cessation of major train routes, was another issue of concern for the IGEB. As the S-Bahn was operated from East Berlin, many citizens in the West called for a boycott in protest against the construction of the wall. With the acquisition of the S-Bahn by the BVG, the passenger association made significant progress towards the reconstruction of the network and its integration into the BVG's tariff zone (Interview IGEB, 05/10, 2016). Following the Reunification, the IGEB campaigned in favour of developing a cooperation between the city and its surroundings in Brandenburg. Some of its members have also joined the Senate as employees. Even though they do not hold elective offices anymore and have somewhat attenuated their action repertoires, IGEB still actively seeks to represent its members' interests with the Berlin Senate and to increase its influence on transport policy choices²⁰.

- **ADFC (Allgemeiner Deutscher Fahrrad-Club)**

The Berlin branch of ADFC represents the interests of cyclists and seeks to increase the quantity and quality of cycling infrastructures, i.e. additional bicycle lanes, the development of "fast bike lanes" (*Radschnellwegen*), etc. as way to incentivize commuting by bike. They also support the idea of a referendum on increased pro-cycling measures and regularly denounce the gap between the Senate's ambitious cycling strategy and what they consider to be an insufficient implementation.

- **ADAC (Allgemeiner Deutscher Automobil-Club e.V.)**

The Berlin branch of the General German Automobile Club represents the biggest automobile club in Germany. It is considered an important supporter of car use and lobbies against restrictions for car users. Due to its federal and regional organization, it has the capacity to act across all levels of government (Federal, state and regional through its Berlin-Brandenburg regional branch) and benefits from the knowledge and expertise produced by other regional branches (Interview ADAC, 11/10/2016). Over the recent period, its main objective was strategically reframed in order to promote a "modern and flexible" approach to mobility, beyond car use and safety issues. ADAC now supports the idea of transport policy as providing free choice as a way to ensure sustainable mobility and create alternatives to prevent an "all-car-vision". As part of its influence-seeking strategy, ADAC publishes a large number of studies, policy-oriented expertise and communication materials. Representatives of ADAC are often present in public forums and debates about transport and mobility issues and as such, it is considered an important actor and source of information and expertise for policy-makers.

3.3.2 Transport policy resources: funding and planning

The transport planning system in Berlin, as well as relations with transport companies, has considerably evolved since the Reunification. Nevertheless, it remains highly dependent on public subsidies, and in a context in

²⁰ IGEB produces a newsletter that is available online for almost the entire period since 1980: <http://signalarchiv.de/>

which the city had little capacity to invest, resources available at the Federal level have played a central role. Such dependence on external resources was exacerbated during the last decade due to a strict austerity policy²¹.

Throughout the Cold War period, specific sources of funding were available from Federal government as part of the subsidies allocated to West-Berlin. Following their suspension in 1994, sporadic infrastructure investments were granted by the Federal government in order to close remaining gaps in the network or to contribute to development of the capital-city's functions (Interview SenStadtUm Verkehr 1)²².

In addition, following the introduction of the 1971 Local Transport Funding Act (*Gemeindeverkehrsfinanzierungsgesetz*), a large number of funding resources for transport planning are made available at Federal government level for municipalities and in the case of Berlin, its spending is overseen by the Senate. This legislation played a major role in the development of local public transport initiatives across German cities, but this will come to an end in 2019 after the decision was made in 2007 to suspend this funding mechanism. Until then, the "unbundling act" (*Entflechtungsgesetz*) opened a transition period during which some level of federal funding was still available, but the future of local public transport funding after 2019 remains unclear. In the Berlin context, this increased the need to explore alternative funding sources in order to develop transport policy initiatives in the future.

Regarding transport planning as such, and since the mid 1990s, Federal law requires local transport plans (Nahverkehrsplan – "NVP") to be designed on a regular basis (4 years) in order to define the exact localization of public transport networks as well as the nature of transport services (frequencies, quality etc.). This legally binding planning tool sets the standards and specifications for the quantity and quality of public transport services. It also includes additional targets, inspection orders and concrete proposals that contribute to increasing the attractiveness of public transportation. As the responsible authority for ensuring an adequate supply of public transportation, the Land of Berlin oversees the elaboration of the NVP.

Following these federal requirements' transposition into regional law²³, Berlin's first NVP was introduced in 1998. It was eventually adopted in October 2001 in a revised version by the newly elected SPD/Green party coalition, after being held up for two years in the big coalition (SPD-CDU). The 1998 transport contract with the BVG (see below) nevertheless drew on the 1st Berlin NVP in order to set the level of transport service and the expected performance of the network until 2007. The second version of the NVP was elaborated under the Senate's leadership in cooperation with several actors and its design was outsourced to private contractors. The results were discussed and voted upon in a working group comprising representatives from the Berlin Senate, Brandenburg on the one hand, and from transport companies on the other hand (DB Regio, S-Bahn Berlin GmbH and BVG). Interestingly, the revision of the NVP was strategically used by the Senate in order to enlarge the number of stakeholders, thus allowing it to avoid the constraints that negotiations with transport companies only would have involved. Neighbouring localities as well as the city of Potsdam were included in the process. In parallel, a series of workshops allowed national and international experts, as well as associations representing users' needs for example, to express their opinion. Even though it was designed and adopted as a stand-alone document, the NVP was expected to be included in the newly elected coalition's integrated approach to transport planning (StEP, see below) that would seek to better combine infrastructure developments with sustainable mobility principles²⁴. In order to prepare the introduction of competitive market oriented structures according to EU regulation, the NVP introduces a series of quality and operating standards, as well as performance measurement. More precisely, since 2001, the NVP includes binding guidelines about:

- Accessibility (numbers of stops, frequencies, etc.)
- Quality (safety, punctuality, environmental standards, etc.)
- Integration of transport services (between public transport modes, with cycling and with public transport offer in Brandenburg)

²¹ This was confirmed by a majority of interviewees.

²² See above about the 1994 Treaty providing compensation for expenses related to its status as a capital.

²³ Law on tasks and the development of public transport in the Land Berlin (ÖPNV-Gesetz) from June 27, 1995. It was modified in 2006.

²⁴ "Nahverkehrsplan bis 2004", in SIGNAL 03/2002, p.7-12. Available at: <http://signalarchiv.de/Meldungen/10002218>

Over time, indicators included in the NVP were refined and appropriate monitoring and evaluation regimes were introduced. In addition, successive NVPs also include detailed guidelines about how these minimum requirements were to be met, as well as an analysis of expected impacts and costs. Nevertheless, the actual development of such transport plans is often hindered by political circumstances as underlined by several interviewees. The 2014-2018 NVP was elaborated between 2012 and 2014, and formally adopted in October, 2014.

Since 2003, the main principles and tools for transport planning are introduced in the so-called Urban Transportation Development Plan (*Stadtentwicklungsplan Verkehr, StEP Verkehr*) in close relationship with the Berlin Strategy or Urban Development Strategy Berlin 2030. Particular attention was devoted to implementing these general principles through a series of tools that were explicitly paired with the standards and indicators that were introduced in the revised version of the NVP. From then on, later version of NVPs laid the ground for developing regulation contracts with transport companies. The first StEP was adopted in 2003, and the second one in 2011.

3.3.3 Relationships between major stakeholders

Relationships with transport companies: transport contracts.

The Berlin Senate's relations with transport companies are regulated through so-called "transport contracts" through which the principles laid down in the NVP are made operational through performance targets and the provision of resources, and according to the purchaser-provider principle.

From the point of view of their content, these contracts are tied to the principles and priorities defined in the StEP Verkehr, thus offering some opportunity to re-prioritize infrastructure projects according to transport policy objectives and budgetary constraints. Since the late 1990s, the allocation of public subsidies is submitted to specific and increasingly refined criteria about capacity and quality. From 2000 onwards, this regulatory framework was extended to all transport companies, including the BVG who had benefited until then from a large degree of autonomy, almost that of a "state in the State" according to a majority of interviewees.

The elaboration of successive local transport plans' contracts gave an opportunity to the Transport Department to strategically use this policy tool as leverage in its relationship with transport operators, including the BVG. Yet and insofar as the Finance Department – and not the Transport Department – is head of the BVG supervisory board, this process also depends on these administrations' capacity to cooperate and on electoral cycles. Following the so-called "S-Bahn crisis" in 2010 (see below), the Transport Department benefits from additional room for manoeuvre during negotiations with the BVG and a detailed and four-monthly based system of performance monitoring was introduced and opened to the wider public.

In order to monitor the implementation of transport contracts, the Centre for Public transport was set up in 2008 (Centre Nahverkehr Berlin, CNB) (see Figure 2 above). It brings together a team of ten planners, engineers and lawyers working exclusively for the Senate and with little direct relationship with the general public. Even though the CNB is responsible for investigating and answering passengers' complaints, most complaints are still addressed to the BVG or the Berlin Senate, who eventually transfer them in a consolidated manner to the CNB after a certain delay. The task of the CNB is to manage and oversee the implementation of the recent transport contract between SenStadtUm and the BVG.

A closer look at investment in maintenance and new infrastructure also shows the extent to which relationships with transport companies are primarily structured by power struggles during which the Berlin Senate tried to (re)assert its leadership. For example, the S-Bahn GmbH only operates transport services on the S-Bahn network, whereas "DB Netz", a subsidiary of Deutsche Bahn²⁵, is responsible for its maintenance, renewal and extension. Even though it receives annual subsidies from the Berlin Land, the Senate has little ability for monitoring actual investments levels. Performance targets and other standards (operating, quality, etc.) are negotiated between DB Netz and the Federal government. This proved particularly critical during the so-called S-Bahn crisis in 2010, when the network almost came to a complete stop. The investigation made levels of underinvestment in the network visible to the wider public, and some organizational changes were introduced

²⁵ 100% owned by the Federal government.

(see below)²⁶. Nevertheless, one of our interviewees within the Senate administration expressed his doubts regarding the crisis' impact on the Senate's influence over the management of the S-Bahn network: *"The operations of the Deutsche Bahn are none of our concern. We usually suffer if something goes wrong but we have no influence over it"* (SenStadtUm Verkehr 2, TbA).

In the case of the BVG, the existing infrastructure belongs by law to the transport company. The level of investments for maintenance and extension are directly negotiated with the Berlin Senate as part of successive transport contracts. In this case, interviewees highlighted the need for this administration to strengthen its resources and strategy during negotiations, and the extent to which it led to a continued learning process since transport contracts were introduced.

Even though regulation contracts have somewhat contributed to redefining relationships between public authorities and transport companies, they have also confirmed the role of issue-specific discussion forums, in which self-interested stakeholders have an opportunity to shape policy-making and implementation.

Interstate cooperation between Berlin and Brandenburg.

Cooperation between Berlin and Brandenburg has been hindered by historic circumstances. It is also considered difficult due to interstate political and institutional competition over resources and investments.

In matters of public transport, a pragmatic approach prevailed and functional forms of cooperation were developed. The creation of the VBB, with a common tariff zone, is considered a major shift in the organization of public transport services throughout the metropolitan region. Yet all interviewees indicated that there was room for improvement, as cooperation does not go beyond pricing and some basic level of cooperation for public transport planning. In addition, the VBB has no reach over the organization of public transport in the city, and only has jurisdiction over regional and S-Bahn traffic - connections between Berlin and its *hinterland*. In addition, the CNB is responsible for the cooperation between the city administration and the BVG.

Another sphere of cooperation between Berlin and Brandenburg are logistics and inland navigation (SenStadtUm Verkehr 3). The issue of urban freight and logistics only emerged after the Reunification. Even though one third of companies and businesses, including in the field of logistics, left the city, urban development and construction sites required a large amount of building materials and goods being brought into the city. In order to prevent a collapse of traffic, logistic centres (*Güterverkehrszentren*, GVZ) were built on land owned by the city of Berlin, but located in adjacent localities in Brandenburg. In these centres, freight is stored, reorganized and dispatched into the city. The organization of the waterways provides another good example of interstate cooperation.

Apart from these examples, this past experience suggests **the limits of a purely pragmatic approach to functional governance in transport**. Other dimensions of transport and mobility planning are weakly addressed – or neglected – by inter-state relations. They are primarily addressed on a case-by-case basis and strictly restricted to those cases in which there is no alternative and a 'win-win situation'.

In all other cases debates regarding the location and funding of transport initiatives are shaped by institutional competition about competences and leadership (*"Kompetenzgerangel"*). The creation of the GLBB was first considered an opportunity to develop common strategic development goals and led to the implementation of several State Development Plans (*Landesentwicklungspläne LEP*) for Berlin and Brandenburg as legislative decrees. A *Landesentwicklungsplan* for the capital region Berlin-Brandenburg is currently being developed. A few decades later, the GLBB is often called "an empty shell" lacking political leadership, resources and competences in order to effectively operationalize and implement commonly agreed strategic planning documents. Off the record, Berlin is sometimes criticized by some stakeholders for developing its strategic planning document *"BerlinStrategie 2030"* without putting it in the context of a common framework for action with Brandenburg, as is Brandenburg in the case of its regional strategic planning strategy. At the policy level, public transport and cycling organizations highlight the negative impact of competence overlapping between levels of

²⁶ One interviewee from the Senate administration wishing to remain anonymous commented that the S-Bahn crisis resulted from both the DB's cost reduction strategy and from the decision made by politico-administrative actors in Berlin, in a context of austerity, to *"use existing infrastructures until they wear out"*.

government in a federal context, insofar as it supports blame shifting strategies during discussions about funding, locating transport infrastructures and projects²⁷.

Overall, interstate relationships in transport planning and policy are primarily addressed at a higher political level. The strengthening of cooperation has so far been hindered due to the lack of consensus in Brandenburg, and this Land's ambiguous position vis-à-vis Berlin. First, attitudes towards Berlin vary according to the distance with Berlin. Those municipalities located further away from Berlin require relatively high levels of public investments and in a context of austerity and high levels of deficit, they oppose all attempts to further concentrate resources and investments in those areas that already benefit from proximity to Berlin. According to most interviewees, the strengthening and formalization of cooperation with Brandenburg, in transport most particularly, is crucial for the future development of Berlin in view of demographic and socio-economic trends.

Other actors and their sphere of influence: a tradition of civil society engagement in transport policy.

Civil society mobilization and participation play a critical role in transport politics in Berlin, both indirectly by putting pressure on the political system, and directly through conflicts and protest. As such, they partly account for the planning and the implementation of large transport infrastructure projects.

The mobilization of civil society over transport issues in West-Berlin goes back to the 1980s, with a number of protests against large infrastructure projects such as urban highways. Similar to the situation observed across West German cities, several individual anti-road campaigns started in the 1970s. They emerged as major contributors to the environmental social movement in close relationship with the rise of the green party that both codified and channelled their claims (Rucht and Rose, 2001). Following the Reunification, these otherwise scattered local movements grouped together in the NOlympia campaign against the Olympic games (1991-1993) (Mayer 1997).

In view of past experiences and in order to maximize chances of influencing policy-making and planning processes, participation strategies were revised in order for civil society organizations and initiatives to mobilize from the earliest stage on. Over the recent time period, forms of civil society mobilization have recently undergone additional changes (Novy, Colomb, 2013). "Classic" forms of civil mobilization, that dated back to the 1980s, are losing ground (Interview IGEB) and this confirms changes observed beyond transport issues in Berlin as in other European cities (Tarrow, Tilly, 2006). Citizens tend to increasingly engage on an *ad hoc* basis and less so as part of institutionalized forms of political and social mobilizations such as political parties, non-governmental organizations – NGOs, etc.²⁸ On the other hand formalized initiatives and organizations with long-terms goals and the ability to accumulate knowledge and expertise are unusual. Nevertheless in a number of cases, these initiatives gain momentum and play an active role as agenda-setter, as observed in the recent period with controversies over transport infrastructure projects (e.g., Tiergarten tunnel, A100) and with what all interviewees referred to as the "cyclist lobby" and the recently created "Initiative Volkentscheid Fahrrad". This confirms their critical role in the dynamics of conflicts, and they are historically considered one of the main challenges to consensus-seeking forms of policy-making and to the development of issue-specific discussions between the Department for Transport and representatives from various transport modes.

This overview of major transport policy stakeholders in Berlin - public authorities, transport companies and civil society organizations - and of relationships between them suggests strong competing influence- and resource-seeking strategies, power relations and approaches to transport that are deeply rooted in forms of governance. This also suggests that such forms of mobilization shape the distribution of transport policy resources and outputs between a selective number of transport users and socio-economic groups, whereas political capacity to develop and implement city-wide transport policies varies according to transport modes, systems and location. When considering the wider metropolitan region, relationships are only institutionalized to

²⁷ In the case of Park & Ride facilities for example, inter-state discussions have so far stumbled against the following debate: Should Berlin cover the costs of facilities located in Brandenburg but aiming at reducing incoming commuting flows? Or should it be Brandenburg's responsibility, since these facilities will be used by taxpayers from Brandenburg? (Interviews IGEB and ADAC).

²⁸ The following example was given during the interview with IGE (op.cit.): if there is a need for a bus lane or a new bus stop, a local initiative is rapidly organized but only lasts until the objective is reached.

some extent, thus explaining politicizing dynamics in transport due to institutional and political competition between levels of government, and between public and non-public transport actors.

3.4 Remaining challenges in the organization of transport

Together, demographic, socioeconomic, political and institutional factors mean that it is necessary to analyze transport policy developments over a long time scale. The city's recent history certainly creates a unique setting and contributes to differentiating this case from other cities in the CREATE project and beyond. Nevertheless, the choice made in the CREATE project and in WP4 to consider these developments over a long-term perspective also allows highlighting the drivers of continuity and change in the social, economic, demographic, political and institutional dynamics in the Berlin context. To a large extent, these were inherited from the Prussian and the Modern periods, and somewhat reassembled following the reunification, together with the changes brought on during the Cold war period, in order to face new challenges.

The following drivers for change and continuity were identified and account for specific forms of governance in the context of the German capital-city on the one hand, and in the context of the transport policy domain on the other hand:

- 1) There is a limited investment and fiscal capacity, which is exacerbated through demographics. Several policy developments are thus strongly determined by scarce resources that need be allocated between policy priorities and socio-economic groups.
- 2) While the Senate's authority and views may be challenged by other governmental and non-governmental actors, there remains a tradition for consensus-seeking in local politics.
- 3) The introduction of new policy tools partly contributes to increasing the Senate steering capacity in the transport sector. This however leads at the same time to the strengthening of specific interest groups and issue networks.
- 4) There is a growing discrepancy between socio-economic dynamics at play in the wider metropolitan region and existing institutionalized politico-administrative boundaries.

In the following section, the analysis of historical transport developments shows how such forms of governance account for the selection of policy objectives, measures and tools over time.

In this section, the relationship between historical transport policy developments, that is the selection of policy objectives, processes and measures, and specific combinations of above-mentioned drivers of change, is examined in more detail. In other words, innovations in governance shape changes in ideas and tools. First, such an examination confirms the shift away from the car-oriented approach and the development of sustainable mobility policies. Second, it suggests that such a process was considerably delayed through the reunification process. Third, changes in transport were primarily structured by innovations in governance and ambiguous policy objectives. Together, this accounts for the continued strengthening of public transport, but less so for the reduction of car use.

To begin with, the role of historical legacies in transport policy objectives and networks is examined. Then some attention is given to transport planning processes and innovations in transport governance as part of the integrated approach to transport. Finally, a selective number of policy measures and projects are analysed in more detail.

4.1 Accounting for the dominant role of public transport

Berlin's transport network is the outcome of a 150-years-long development process. It is closely related to the city's history and growth, as well as to the functions it has enjoyed in successive political regimes. The development of the modern city, and that of its transport system, goes back to the end of the 19th Century, when Berlin underwent a phase of rapid urban, economic and demographic growth as the capital of Prussia. During this period, the rail-city model was considered instrumental in order to shape the city's rapid growth and in the absence of a metropolitan authority. Most regional and inner city rail connections and most inner-city U-Bahn lines were built prior to 1939. By contrast, the emergence of the car-oriented city model is closely related to the idea of the modern city, in which a new generation of urban planners and social democrats played a critical role. It only fully developed in the Post-1945 context in West-Berlin, but it never replaced the dominant role of public transport in shaping transport policy developments in Berlin.

4.1.1 Berlin as a rail city

The 19th century industrial revolution and the consolidation of Prussia after the 1848-1849 German revolutions transformed Berlin (Fabian 2000). The city of Berlin was much smaller than it is today and mainly circumscribed within the inner-ring. Attention focused at first on the inner-city area as part of the new Prussian regime's policing strategy. Following the 1850 administrative reform, municipal rights were considerably reduced. By contrast, the 1862 Hobrecht Plan followed the urban development principles laid out by Haussman in Paris and developed an instrumental approach to public rail-based transport and other urban utilities networks as a way to shape future urban expansions. The Ringbahn, a circular rail network linking all municipalities adjacent to Berlin and primarily meant for the circulation of freight, was developed from the 1850s onwards. During this early period, these transport systems were operated by private companies through a concession system regulated by the city.

During the 1880s, the city expanded beyond the Ringbahn, and additional passenger services were developed in order to enhance commuter traffic between the Old City and the suburbs (see Map 3a below). A large share of urban transport was done by road (horse-drawn railways and buses, prior to the advent of the private motor car), and it was also during this period that a complete separation between the Ringbahn and the roads was achieved. In addition, the rail-based public transport network was densified through the creation of the S-Bahn (StadtBahn) network and fully integrated to the urban railway network. The development of the S-Bahn was achieved with public funding and under the leadership of the State. It was considered a strategic tool for shaping urban growth and as new developments stretched beyond the Ringbahn, special commuter services were introduced on radial lines. Service quality and capacity was increased; passenger traffic was fully segregated from freight traffic, and the entire network (230 km) was electrified. Complementary to the S-Bahn system, additional capacity was introduced on the urban transport network: the expansion (first line built in 1865) and upgrading of the tram network (between 1896 and 1902), the development of a new rail-based network, i.e. the U-Bahn, in order to link suburbs to the city-centre and to better connect the S- and the Ringbahn to multiple city centres.

Public transport was instrumental in setting the borders of the Great Berlin, which was formally created in 1920 out of 94 localities. Prior to this date, cooperation in transport and urban planning was somewhat ensured at metropolitan level through the *Zweckverband Gross-Berlin* (1911). Yet the creation of a single, metropolitan entity,

in conjunction with the principles laid out in the 1918 Mächler Plan, put greater emphasis on metropolitan policy objectives and measures. Existing networks were expanded towards the city's outskirts and residential areas following an 8-axis structure. The inner-city network was upgraded, and the tramway network was at the peak of its development, since many cars had been confiscated during the war. The creation of the BVG²⁹ in 1929, as a municipally-owned public transport company, offered additional opportunities to better integrate public transport services and networks. This policy was pursued under the Nazi regime as part of great infrastructure planning policies, including a north-south S-Bahn line.

4.1.2 Towards the car-oriented city model

Notwithstanding the rapid development of the public transport system, a competing urban growth model emerged during the 1920s in conjunction with the rise of car ownership. In post-WWI Berlin, living conditions in the inner-city district and the 19th Century housing estates (*Mietskasernenstadt*) deteriorated rapidly. The creation of the Great Berlin offered an opportunity to a new generation of urban planners to develop an alternative model with the support of the ruling, social-democrat majority. The creation of the modern city would contribute to improving quality of life and reducing inequalities at the metropolitan level. In this context, the automobile was considered to be a symbol of the modern city and a tool best adapted to the metropolization of governance forms and policy-making dynamics³⁰. Many urban planning principles and tools were redesigned in support of what was then considered to be a technology of the future and an expression of modern, individualized lifestyle (Aust, 2002). These ideas were somewhat disconnected from actual travel demand patterns and behaviours. Nevertheless, urban planning and transport policy goals remained highly interrelated, and it now served a different vision of urban planning that was very much inspired by the idea of the functional city³¹.

Even though this thinking only became dominant in the Post-WWII context, it exerted a long-term influence on urban planners and their professional training without substituting the dominant role of public transport (see below). From the 1910s onwards, even though car use had not yet become a mass phenomenon, large ring road projects were introduced into strategic urban planning documents and later abandoned in the context of WWI. Some of the projects that were designed pre-WWI were developed some decades later, once this city growth model had become dominant. Some of this thinking was also picked up during the Nazi period as part of the monumental architecture plans that sought to transform Berlin into a "Welthauptstadt". This included the transformation of existing avenues into large parade routes, the construction of an underground highway that would ease north-south traffic. Sections of this highway's tunnel structure were built, and still exist today. International competitions were organised in order to modernize the old urban structure, including the infrastructure that was supportive of rail-based urban transport networks.

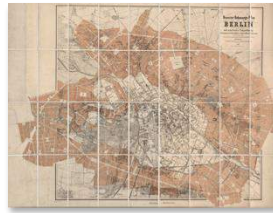
²⁹ The Berliner Verkehrsaktiengesellschaft (BVG), renamed in January 1983 Berliner Verkehrs-Betriebe. It has been operated under this name since December 1930, having been previously called the special tariff area Berliner Stadt-, Ring- und Vorortbahnen (Berlin cross-city, circular, and suburban railways).

³⁰ Debates among prominent urban planners, such as Martin Wagner, show a large consensus about car-oriented city planning (Interview Kunst, op.cit.).

³¹ Drawing on Le Corbusier's work on urban planning, the concept and the principles of the Functional city were published as part of the Athens Charter.

Maps 3a, b, c, d. Planning the Great Berlin (1862-1936)

Hobrecht Plan 1862



Berlin and its surroundings in 1885



Great Berlin 1920



Rail-based transport network 1936



Source: Aust (2002), Berliner Pläne:

http://www.stadtentwicklung.berlin.de/planen/fnp/pix/historie/Berliner_Plaene_1862_bis_1994.pdf

4.2 The evolution of transport policy objectives and networks since 1945

The War left Berlin a destroyed city, and its population was reduced by 1/3rd. Its public transport network reopened gradually – and selectively, partly because it largely exceeded the population's needs at the time and partly because of the rise of the automobile. This period is considered as a setback in the development of the transport system (Interview SenStadtUm Verkehr 1): two different systems developed independently from one another in terms of both policy objectives and networks. Evolutions in the governance and the organization of public transport were strictly constrained by Cold War politics; transport companies, including the BVG, were divided. In this context, the car-oriented city model acquired its full strength. New ideas that were very much inspired by the model of the Charter of Athens were applied to the reconstruction of the city centre in both parts of the city. This shift in policy goals **was not uniformly applied** due to funding constraints in the East and to growing protest in the West.

4.2.1 Transport policy and governance during the Cold War.

In the Eastern part of the city, economic development is considered a major objective of urban planning in the 1969 Generalbebauungsplan (GBP)³², together with access to nature: new green areas were planned, connecting existing green areas to form a “radial-ring-system” of recreational spaces. In terms of transport policy objectives, this document sets a precise 70 vs. 30 ratio in favour of public transport (Ibid., 35)³³. In the 1989 GBP, urban development is mainly concentrated along radial axes and the prolongation of S-Bahn and tramway lines. By contrast to West Berlin, urban growth draws on the extensive use of agricultural areas³⁴.

³² These plans were elaborated by the council of ministers (*Ministerrat*).

³³ This was later explained due to the lack of financial resources to build modern highways and to difficult access to car ownership for a majority of the population.

³⁴ This plan was discarded after the Reunification because of its political background.

Even though some plans were made to widen major roads and built elevated highways and roads, they were never realized due to the lack of financial resources. Similarly, the underground network was neglected, with the exception of one underground line, the U5 (still under construction). By contrast, the electric tramway network was substantially extended. Following the construction of the Berlin Wall, the S-Bahn was operated in two separate subnetworks of the Deutsche Reichsbahn (DR), the national railway company of the GDR.³⁵ The S-Bahn became the most important mode of transport, due to the lack of private cars. Several S-Bahn lines were built in order to service large new housing districts, and other lines were renovated and improved.

In West-Berlin however, urban development sought to thin out the inner city and to densify the outskirts. Following the construction of the Wall, open space is considered a rare resource and urban concentration emerges as a major objective. The contact with nature is considered important, insofar as it doesn't hinder the segregation of functions laid out in the guidelines of the Charter of Athens. In this context, transport policy objectives are clearly dominated by the car-oriented city model, whereas public transport is considered as a more residual element (see above). Transport emerged as a major policy priority in the 1965 Baunutzungsplan (BNP) due to the exponential rise in motorization (Aust, 2002, 32-34). While the need to accommodate economic development and traffic congestion is not mentioned as such, the main rationale was to conceive "efficient traffic flows" and urban highways connecting to East Berlin.

The construction of major roads and draft plans for an inner expressway network (with an inner-city ring, an outer city ring and tangential roads in between) was promoted in West-Berlin. Up to the 1980s, the western part of the city ring and access roads from the north and south were built with funding from the FRG. Many housing blocks had to be demolished; Inner-city neighbourhoods were entirely redesigned by enlarging existing roads, developing intersections and junctions. Public transport was developed to the extent that it did not significantly impact rising traffic levels (Interview Kunst, op.cit.). The Western S-Bahn network deteriorated and was later boycotted by the population, being effectively dominated by East-German authorities and considered unreliable. Many lines were closed until the transport authority of West-Berlin (BVG) started operating the remaining 40 km of the network. The tramway network was dismantled, but many lines were substituted by underground lines in this period in order to create space in the inner city. As a result, the U-Bahn network expanded rapidly between 1953 and 1989.

These infrastructure developments were accompanied by major demonstrations from local residents and environmental organizations from the 1970s onwards. Protest against the so-called *Westtangente*³⁶ is unanimously considered as a major turning point in the implementation of post-War transport policy goals and in the structuring of green organizations in Berlin, such as BUND³⁷. Protests were particularly strong around the Gleisdreieck area, close to the Kreuzberg Borough where the students and the squatters' movements was strongest. Citizen initiatives developed alternative projects to the Westtangente, such as a "Green tangent" that would strengthen cycling and walking. It should have joined the inner-ring road from the north, and continued through downtown to the southern city ring - via the current Potsdamer Platz. The project also included a long tunnel under the Tiergarten. The political decision to give up the Westtangente as a highway in 1981 is considered a first turning point in West-Berlin (and Federal) Transport Policy (Rucht 1984). Numerous highway projects were gradually abandoned or put on hold as a long-term planning option.

These protests did not, however, lead to immediate changes in transport and land-use plans. A shift was first noticeable at Federal level, as part of a progressive reshuffling of transport policy priorities and with some direct effects in West-Berlin. In addition to the downscaling of the Westtangente project, traffic mitigation policies such as the covering of urban motorways, e.g., the Schlangenbaderstrasse, were actively encouraged through Federal subsidies and pilot projects. **At the West-Berlin level, however, car-oriented thinking remained largely dominant.** It was only during the revision of the 1987 Land-Use Plan for West-Berlin

³⁵ The S-Bahn network was operated by the railway authorities of East-Berlin, but property rights in the Western part remained with the transport authority of West-Berlin. DR and BVG (1 January 1992 absorbing BVB of East Berlin) operated individual lines end to end, both into the other party's territories. In 1994 the DR and the former West Germany's Deutsche Bundesbahn merged to the Deutsche Bahn.

³⁶ It was to join the inner ring road from the north through downtown to the southern city ring, with a tunnel under the Tiergarten, a large recreational area.

³⁷ Friends of the Earth Germany.

(Flächennutzungsplan) that a growing focus for the quality of life³⁸, densification policies and prioritizing public transport was introduced (Aust, 2002, 40). Unlike its 1965 counterpart, it is less driven by Cold-War politics and more so by urban issues: the focus is on West-Berlin and in doing so it somewhat abandons the idea of a swift reunification. Its elaboration is seized upon as an opportunity for local authorities to give some space for debate about urban planning policy goals. Many former opponents to the Senate's policy were successfully co-opted as part of social housing and urban regeneration programmes in those areas where opposition had been strongest. Over the years, the growing leadership of Social-Democrat and Ecologists over this Senate administration contributed to a major policy transition. Change was less unequivocal in the case of the traffic administration and the Senate Department in charge of it, which remained mostly under control of the Christian-Democrats.

The implementation of the 1984 FNP was postponed due to the Reunification, but the principles laid out in the 1984 FNP were considered a major source of inspiration for the development of an alternative urban planning model in Berlin during the 1990s (Interview Kunst, op.cit.). During this period, some 300 km of existing road projects were put on hold and motorway expansion plans were either abandoned or, in most cases, maintained in transport planning documents as long-term planning options. In the case of the Westtangente for example, part of the projected infrastructure, including the tunnel under the Tiergarten, was built after Reunification, albeit with some significant changes. Yet the daily management of roads and the allocation of resources still operated according to the car-oriented city model and considered the automobile as dominant. Sidewalks were narrowed in order to develop bicycle lanes while at the same time ensuring traffic fluidity.

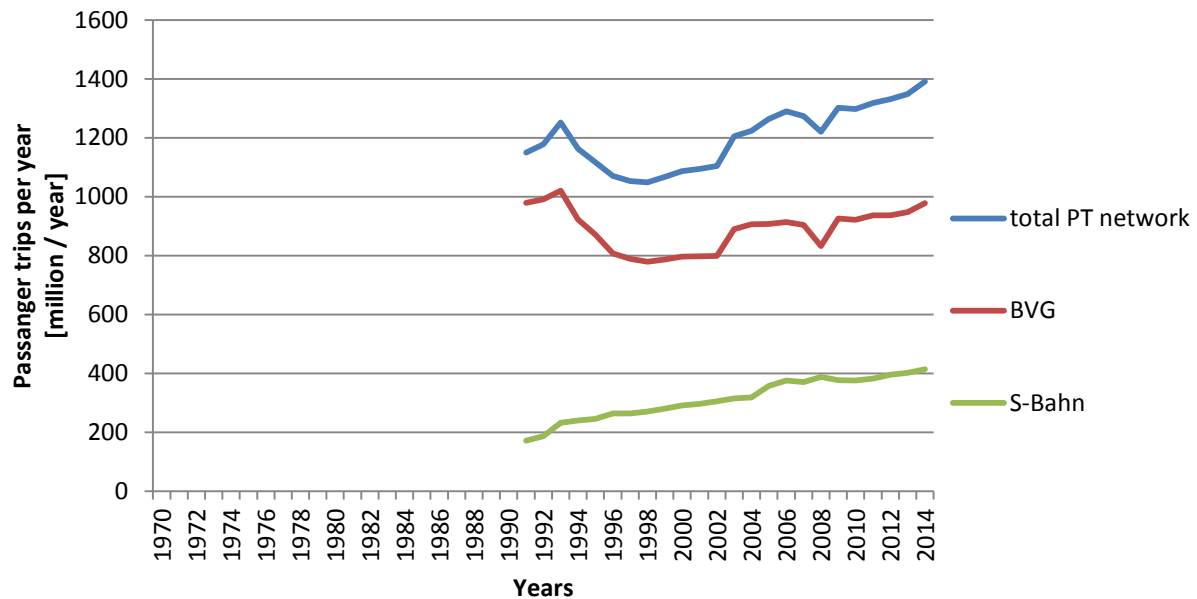
4.2.2 Transport policy change on-hold: Reunification through infrastructure-based policy

Unlike the situation observed in other cities in Europe, Reunification slowed down this policy transition process away from the car-oriented city. Following this rapid and abrupt change, policy priorities were reshuffled to the detriment of other issues and concerns. **In terms of transport policy goals, immediate post-Reunification policy documents and measures at federal and metropolitan levels converged towards a single overarching goal: to achieve effective reunification through infrastructure development.** Networks had to be re-joined and re-integrated. Major roads and rail connections had been destroyed, abandoned or experienced chronic underinvestment.

In public transport, priority was given to reconnecting existing networks (e.g., S-Bahn Ring in 2002), developing some new tramway lines and connections with Brandenburg, and modernizing existing lines. Night services were also introduced gradually. The network now consists of a dense and well-integrated system throughout the city (Table 4). Recent developments show how public transport in Berlin is strongly related to that of municipal leadership and to public transport infrastructures. The BVG operates the entire public transport network, apart from the S-Bahn and the regional train networks which are operated respectively by the S-Bahn GmbH and the DB Regio. Even though the BVG experienced many changes in its status and competences, it still hangs on to its historic acronym, thus contributing to this illusion of continuity. The respective shares of public transport modes are presented in Figure 3a.

³⁸ A special program for landscape and the protection of the environment is introduced

Figure 3a. Development of the number of public transport passengers by company
[million trips/year]



Source: SenStadtUm 2001-2014; CNB 2016b, Extracted from CREATE Project, D3.2 Berlin Report, p. 80.

In regard to motorized private transport (motorisierter Individualverkehr, MIV), Berlin did “catch up” with suburbanization and motorization trends in other West-German after the Reunification³⁹. Trips by car-drivers declined impressively from 30 per cent to 22 per cent since 1998, but the share of motorized individual vehicles remains non-negligible⁴⁰ and in the context of renewed demographic growth, the number of registered vehicles is rising again (Figures 4). According to several interviewees outside SenStadtUm, absolute numbers of registered vehicles continue to rise although the relative part of car use in the modal split decreases (Figure 3b). The strong development of tourism since the early 2000s also accounts for car use decline. In 2014, some 11,9 million tourists and convention participants visited Berlin, with some 27,7 million nights spent (VisitBerlin.de, 2015). Since 2010, it is estimated that almost 10 per cent of the total population are tourists, most of which arrive by plane and depend on non-motorized transport during their stay. This suggests that there is a general trend towards non-motorized individual modes of transport, but that many still do not forego their car.

In this context, the development of public transport infrastructures in order to allow both the recreation of past networks and the development of new ones was considered an absolute political priority across levels of government and political parties. In a context in which the population was declining, there was no political will to extend the network apart from a few exceptions.

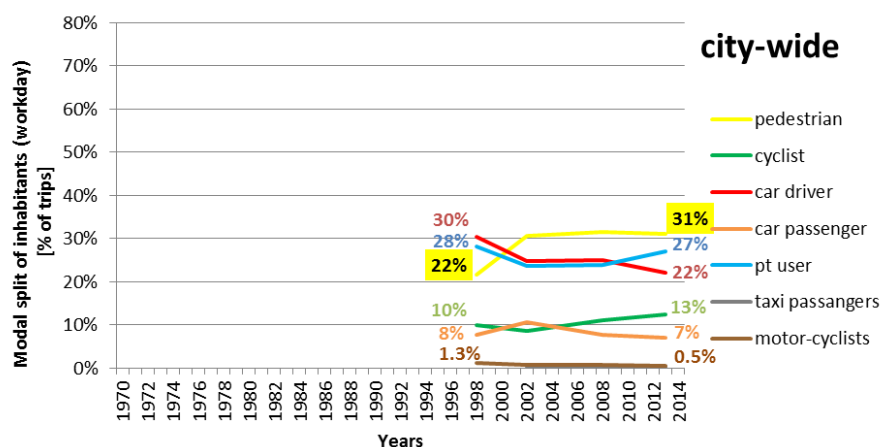
³⁹ This observation extends to cities under study in WP4. See D3.2 Berlin report.

⁴⁰ As stated in D3.2 Berlin report: “The share of car-passenger trips has also been decreasing as well as the proportion of trips by motor-cyclists. All in all, it is clearly visible that that all individual motorised transport modes lost importance within mode-choice behaviour. Non-motorized trips have increased most (e.g. walking and cycle trips) whereas the share of PT trips has remained, more or less, at the same level in 2013 as in 1998. In other words, the growth of public transport mileage (addressed above) mainly resulted from the extension of trip lengths by public transport. Today, environmentally-friendly transport modes (non-motorised or public transport modes) have a proportion of more than 71 per cent of the modal split.”, p.65.

Table 4. Overview of current transport offer in Berlin

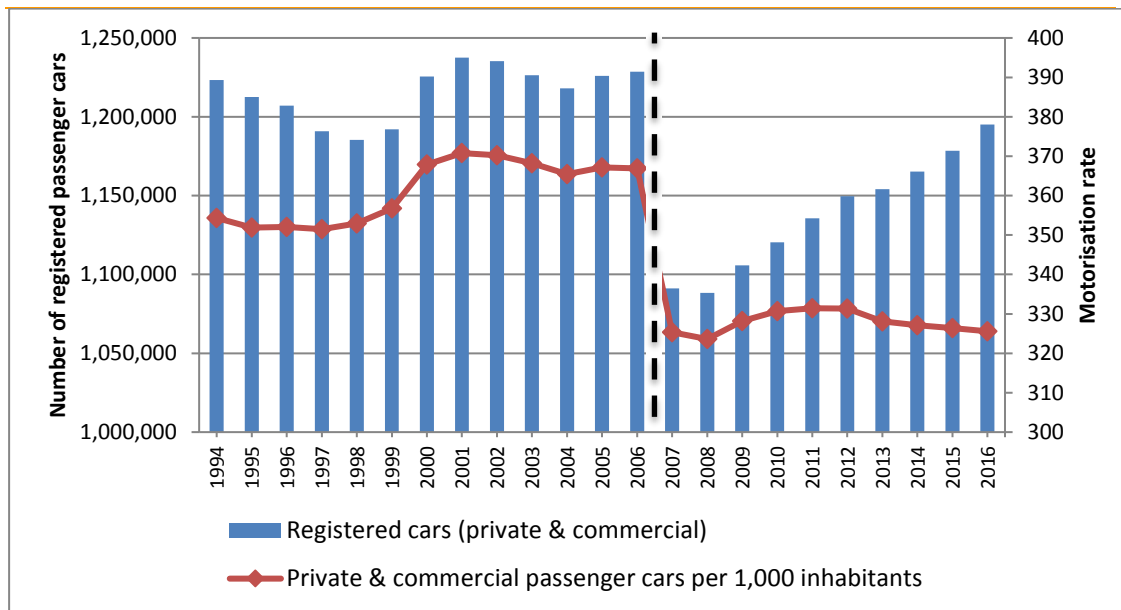
Roads	
Road network	5334 km, of which 73 km are motorways (under the responsibility of the Federal government)
Cycle lanes & paths	1,470 km of so called street accompanying bicycle facilities available, incl. 285.8 km of bicycle lanes and protective lanes on street, 968.4 km of structural cycle paths on the side walk and 216.1 km shared foot and cycle paths The Berlin Bike Main Route for long distance cycling, which connects major locations in the City.
Motorisation (cars / per 1000 inhabitants)	324
Public transport	
S-Bahn	15 routes, 331 km (S-Bahn)
U-Bahn	9 lines, 173 stations, 147 km. During peak hours, trains run every 2-5 minutes. The service is provided by 1266 carriages carrying 400 million passengers over 123 million km every year.
Tram	22 lines, 377 stops, 294 km (incl. 9 MetroNetz lines or express lines in areas poorly served by the underground or S-Bahn system). Mostly located in the Easter part of city, except for new extensions towards main railway station (Hauptbahnhof).
Bus	149 daytime routes, 2634 stops and 1675 km (incl. 17 MetroNetz routes or express line). 63 night routes, 1508 stops and 795 km.
Ferries	6 passenger ferry routes.
Cycling	
Cycle lanes & paths	1,470 km of so called street accompanying bicycle facilities available, incl. 285.8 km of bicycle lanes and protective lanes on street, 968.4 km of structural cycle paths on the side walk and 216.1 km shared foot and cycle paths The Berlin Bike Main Route for long distance cycling, which connects major locations in the City.
Bike rental system	150 stations and 1,750 bikes (as of end of 2014).

Figure 3b. Development of modal split of inhabitants (workday) [% of trips]



Sources: BVG 1998, MID 2002, SrV 2008, SrV 2013 (HTS), extracted from D3.2 Berlin report, p.65.

Figure 4a. Registered vehicles and motorisation in Berlin since 1994



Source: SenStadtUm, based on Kraftfahrtbundesamt (KBA)⁴¹ & Population register (Einwohnermelderegister), published by the © Amt für Statistik Berlin-Brandenburg, Potsdam.

Major flagship projects were developed together with or under the leadership of Federal organizations or governmental agencies. From the point of view of public transport infrastructure, much attention was devoted to the reconstruction of a strong, reliable local and regional rail-based network. In addition to reconstructing most of the old S-Bahn-network (e.g. the reopening of the Ringbahn), the development of a regional and national railway hub followed the principles that were laid down in the so-called “mushroom concept” (Pilz-Konzept) by the Deutsche Bahn AG and the Federal government (DB AG, 2001)⁴². Following intense negotiations between these two actors and the Berlin Senate, intercity train stations were modernised and new crossing train stations were built such as the Hauptbahnhof, located at the former Lehrter Bahnhof. Areas located around these crossing stations were developed such as around the Potsdamer Platz and at a southern crossing station (Südkreuz, former Papestraße). Together with already existing crossing and inter-city stations in the west (Westkreuz, Spandau) and in the east (Ostkreuz, Lichtenberg), this infrastructure layout followed the form of a mushroom.

In addition, new high-speed rail and road infrastructure was developed, such as the tunnel under the Tiergarten and the A100 motorway (see Map 4). In both cases, these projects re-enacted pre-existing infrastructure plans that had been abandoned, thus leading to major protests. The tunnel under the Tiergarten aimed at developing a road and rail link through central Berlin as part of the EU TEN-T Network, by connecting long distance lines via the new central station (Hauptbahnhof). Plans started in 1992 and two distinct planning processes were organized: the road tunnel led to some 1300 objections during the consultation process, and over 19.000 objections were raised against the rail tunnel. Notwithstanding some readjustments, it was formally approved in 1995, and due to further delays (litigation procedures, financial constraints), construction works begun in 1999 and it eventually opened in 2006.

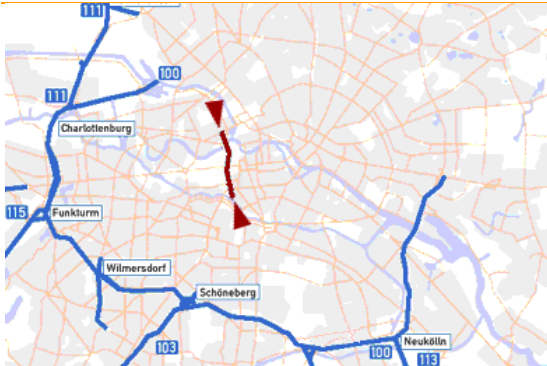
By contrast, the A100 Motorway project (or the so-called “eternal motorway project”) is still underway. This infrastructure was planned during the 1950s in West-Berlin and its first segment opened in 1958. Plans to expand this proposed “city ring” were later abandoned due to protest and to the presence of the wall. After the reunification, the Federal government announced its intention to pursue its south-eastern extension as part of the infrastructure aiming at reconnecting Eastern and Western Germany. Until this date, construction has been postponed but the German Parliament only recently reaffirmed its commitment to continue its development during

⁴¹ Change in statistics (dashed line): From 2007/2008 onwards, only permanently registered vehicles (meaning the “flowing car traffic”) were taken into account. For additional information, see D3.2 Berlin report, p.57.

⁴² See the Deutsche Bahn’s publication: http://www.khd-research.net/Bahn/Reports/DB_Pilzkonzept_2001.pdf. This approach still dominates rail-based infrastructure and policy developments, as recently demonstrated by parliamentary debates in Berlin: <https://www.parlament-berlin.de/ados/17/IIIPlen/vorgang/d17-2518.pdf>

debates about the latest Federal Road Infrastructure Plan (December 2016). Several civil society initiatives, some of which have been active since the 1980s onwards, joined as part of the association “A100 stoppen” in order collectively mobilize against this project (see below).

Map 4. Tunnel Tiergarten Spreebogen



Source: SenStadtUm,
http://www.stadtentwicklung.berlin.de/bauen/strassenbau/en/bild_tts_verkehrsanlagen.shtml

Both projects made tensions between the Land and the Federal State visible. These projects also showed the extent to which Berlin's political and administrative elites tried to avoid blame during public debates and consultations processes by shifting it towards the Federal State and the EU. In the case of the Tunnel under the Tiergarten, mobilization campaigns drew on the anti-Olympic movement ⁴³(Colomb, 2012) and worked against the great coalition and directly contributed to strengthening the Green party and Die Linke with the support of a number of Bezirke (Halpern and Häußerman, 2003).

A closer look at the evolution of transport policy objectives, processes and measures provides a number of explanations and confirms the long-term impact of the strategic alliance that was made between public transport and automobile advocates⁴⁴.

4.2.3 Redefining transport policy objectives and planning processes

An interesting paradox became increasingly visible throughout the 1990s: on the one hand, most resources were concentrated on transport infrastructure development – both public transport and road networks –, but on the other hand, the daily management of transport policy still considered the automobile as a dominant transport mode. In addition, the lack of planning documents delayed implementation. Their elaboration fostered intense discussions about alternative transport policies and highlighted the need to revise transport policy objectives in view of changing mobility patterns in Berlin and within the metropolitan region. It also showed the weak ability of the Berlin Senate – both its administration and the Big Coalition – to overcome internal fragmentation, institutional competition from other levels of government, and political and social challengers. In this context, new coordination mechanisms and forms of governance were developed. Also, the design of policy objectives often overlapped with planning procedures (Aust, 2002, 50-52).

The Stadtforum as a first attempt to increase coordination and leadership

Several initiatives were introduced in order to seek new ideas while at the same time limiting scope for protest and institutional competition. The introduction of the Stadtforum initiative, under the leadership of Volker Hassemer, CDU Senator for Urban planning and environment between 1991 and 1995, follows this rationale. This citywide public forum invited some 50 to 70 fixed members, representing stakeholders and experts from across a large variety of organizations, to meet up to twice a month in order to discuss a number of policy issues. As an *ad hoc*, informal assembly, the Stadtforum did not enjoy any decision-making powers and was considered somewhat suspiciously by a majority of administrative and political elites. It was only in those areas where policy recommendations aligned with that of political parties within the Big coalition that the Stadtforum exerted some

⁴³ See Section 3.3.3

⁴⁴ This point will be further developed in the context of the integrated transport approach.

influence. Discussions did, however, strengthen a growing political and social opposition to dominant policy goals within the Senate.

Preparatory works for the land-use plan (FNP 1994) or the so-called “spatial structure concept”, which was also the first planning document adopted after the reunification, were conducted as part of this assembly, including revised demographic and economic growth scenarios, discussions about polycentricism and ways through which housing, economic development and transport policies could strengthen this form of urban development. The document also renews urban concentration policies and the protection of free and public spaces. Up to today, it remains a cornerstone in Berlin’s land use policy⁴⁵.

Discussions about transport confirmed on the one hand the lack of a social and political consensus between civil society organizations, political parties and the administration, and on the other hand, the dominant role of the car-oriented city model. Automobile associations were particularly active in advocating this approach. By contrast, alternative approaches were more fragmented between, on the one hand, public transport advocates who drew upon old 19th Century planning principles and tools, and on the other hand, environmentalists that promoted a radical change away from current transport patterns and behaviours. As demonstrated in the 1994 FNP, post-reunification transport policy objectives clearly prioritize public transport while at the same time avoiding limitations to the development of road transport. This is justified in relation with the reduction of social inequalities between East- and West-Berlin together with economic growth and the shift towards a service economy (Aust, 2002, 53). In spite of rapid motorization and suburbanization processes, traffic congestion is not considered an issue. Most transport policy resources are divided between these two modes. In the case of public transport, these general policy objectives were made operational in the 1998 NVP and first transport contract with the BVG (see above).

While discussions within the context of the Stadtforum created some frustrations among those actors who advocated a profound change in transport policy objectives, they also fostered the emergence of an integrated approach to transport. Drawing on the ideas and principles laid out in the 1984 FNP in West-Berlin, they promoted a shift away from the car-oriented city while, at the same time, recognizing its pivotal role. Its advocates (e.g., urban planners, architects, greens, members of SenStadt administration, etc.) recommended developing a transport-specific plan in order to lay out these main policy principles and to challenge the pro-automobile and the pro-public transport coalitions. This idea faced strong opposition from within the Senate administration. In addition, in a context of deep budgetary crisis, most resources were devoted to transport infrastructure investments and budgetary discussions in Parliament primarily addressed the general budget and less so specific policy issues and measures. As a result, this approach could only be introduced a decade later as part of the 2003 StEP Verkehr and following the reshuffling of portfolios between the CDU and the SPD, the nomination of Dr Kunst, an urban planner as head of the transport administration, and a major political change in 2001.

The StEP Verkehr: a major breakthrough in terms of transport policy goals and processes

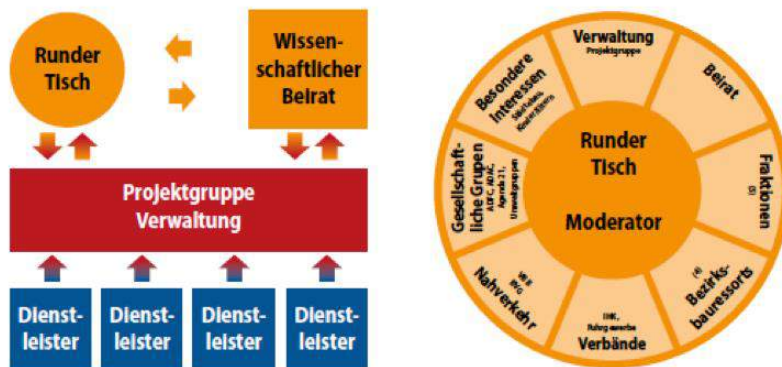
This document constitutes a major turning point in the evolution of transport policy objectives. It introduces the idea of an integrated approach to transport that avoids stigmatising car users and recognises the added value of the automobile to the transport system as a whole. **Yet it also suggests reprioritizing transport policy goals in relationship with sustainable development principles.** Drawing on the long-term tradition of integrating urban development with transport planning, the plan highlights the strategic role of rail-based transport networks in shaping the location of major infrastructure projects. For the first time since 1961-1964, traffic congestion is considered an issue again: while highlighting the need for traffic fluidity, the 2003 StEP Verkehr seeks to improve quality of life in Berlin and lays down key principles for a “city-friendly mobility”. Last but not least, it also develops a citywide perspective on transport policy and considers sub-regional particularities and implications for Brandenburg. In addition to these general principles, this document unequivocally defines qualitative and quantitative objectives: 1) Reducing car traffic in favour of ecomobility (e.g., public transport, cycling and walking), 2) Cutting traffic-related pollution from airborne pollutants, noise and CO₂, and 3) Increasing road safety. These three overarching goals are to be further delineated into a series of comprehensive policy packages or “strategies”.

⁴⁵ It was later amended in 1998, 2004 and 2015, in which a shared use of spaces was introduced, as well as a system of green and recreational areas, and the development of the water systems.

The process through which this document was developed and implemented is also indicative of a major shift in transport policy making. For the first time, outsourcing was used in order to rely on alternative sources of information and expertise. Moreover, a new collaborative procedure was applied (see Figure 5 below) by drawing on the Stadtforum initiative. A “Round Table for Transport” (*Runder Tisch Verkehr*) was convened, in which a large consultative assembly made up of representatives from across major stakeholders in order to discuss preparatory works from the Senate administration. Some 25 people from political parties, business, and environmental and automobile associations were selected at the beginning of the process and encouraged to participate during the entire process. Since parallel discussions were being held about the revision of the 1998 NVP and the first generation of transport contracts, no representatives from the transport companies were permanently invited to contribute to the Round Table, but it did include representatives from the district administrations – mostly heads for traffic – and members of every political faction represented at the Berlin Parliament – mostly transport policy spokespeople. In short, all veto-actors were represented. In a very positivist perspective, the aim was to organise informed discussions in order to avoid passionate, ideological discussions about transport that is akin to “the prevalence of ideology over facts” (Interview Kunst, op.cit.). Overall, some 100 policy measures about infrastructure investments, land-use planning and transport governance were submitted to the debate. In openly seeking consensus between participants, the administration also indirectly committed itself to revising its initial proposal and to agreeing, up to a certain extent, to take into account suggested changes.

This changed approach to policy design accelerated the diffusion of alternative thinking within the Transport Department, its main counterparts within the Senate administration as well as among politicians. Yet by adopting this pragmatic view, this also meant that more radical policies aiming at reducing car use and actively promoting active modes (e.g. cycling, walking) remained marginal – thus explaining later criticism from cyclists’ representatives. The budget plan reflects the dominant role of public transport, and to some extent, the fact that negotiations about public transport were partly led outside the Round table’s reach: between 2003 and 2013, an average of € 800 to 900 million was allocated every year by the Transport administration, including some 2/3rd to public transport (infrastructure and operation) and 1/3rd to road infrastructures, including cycling lanes and sidewalks.

Figure 5: A collaborative approach to transport planning



Source: SenUmStadt, 2011.

By adopting a strategic, long-term planning perspective at horizon 2020, this policy design process also sought to create a series of “lock-ins” at the implementation stage. Direct reference to sustainable development principles and its three axes – economic, social and environmental – results less from an ideologically-driven position than from a pragmatic need to include three highly demarcated sets of actors and policy networks. Its formal adoption resulted from intense negotiations within the Senate, both at political and administrative levels, in order to reach a consensus between Senate administrations, especially with the Environment and the Housing Departments. Several compromises had to be made in order to avoid tensions and to commit to the initial timeframe. By contrast to previous plans and in order to ensure implementation beyond electoral cycles, this document also includes a medium-term budget plan, a mobility programme and several monitoring tools. This proved particularly instrumental as the big coalition came to an abrupt end in 2001 following a large corruption scandal. A “red-red” coalition was elected under the leadership of Klaus Wowereit (SPD). Unlike the situation observed in other policy domains, the ‘urban transportation development plan’ was adopted in 2003.

A similar approach was adopted in the early 2010s, as part of preparatory works on StEP 2025, which was adopted in 2013. By then, the SenStadtUm administration had benefited from an additional merger and now

included the former administration for the Environment, which had played a pivotal role in introducing some major and highly visible policy measures during the 2000s (see below about LEZ). A 2nd Round Table was organised in order to involve a selective number of major stakeholders as well as representatives from other Senate administrations (See Table 5 below)⁴⁶. Most efforts concentrated on discussing concrete policy measures in support of cycling and walking, minimizing the impact of austerity policies and strengthening monitoring procedures.⁴⁷

Few changes were introduced as far as policy objectives and policy processes were concerned, but a closer look at the guidelines and requirements included in the 2014-2018 NVP, which was elaborated between 2012 and 2014 in parallel to the StEP 2025, highlights the strengthening of the SenStadtUm administration during negotiations with public transport companies.

Table 5. List of stakeholders participating to the Round Table for the second urban transportation development plan

Bezirke (Head of local administration)	BA Marzahn-Hellersdorf, BA Charlottenburg-Wilmersdorf, BA Treptow-Köpenick, BA Steglitz-Zehlendorf
Handwerkskammer Berlin (Chamber of crafts); IHK Berlin	
Fuhrgewerbe-Innung Berlin-Brandenburg e.V.	
ADAC Berlin-Brandenburg	
ACE Auto Club Europa e.V.	
BUND (Friends of the Earth, Germany)	
Grüne Liga Berlin e. V.	
Landeselternausschuss (Parents' committee of parents, Berlin)	
BVG	
VBB Berlin-Brandenburg	
IGEB	
Planergemeinschaft (Urban planners' group)	
ADFC Berlin e.V.	
Fraktion AH (Speaker for transport policy, Berlin's Parliament)	SPD, Die Linke, Bündnis 90/Die Grünen, CDU, FDP
Center Nahverkehr Berlin	
SenStadt VII A (Head of the unit for Principle Affairs of Transport Policy, Leader of the StEP project group)	
DLR (Head of the scientific advisory board)	
Extended core group (within the Senate Departments)	Senatsverwaltung für Stadtentwicklung: SenStadt I A (Department for Urban and Open Space Planning, Unit for City Development); SenStadt VII B (Transport Department, Unit for the Planning and design of streets and squares) SenStadt VII C (Transport Department, Unit for public transport) Senatsverwaltung für Gesundheit, Umwelt und Verbraucherschutz, Referat III D (Department for environmental policy, Unit for emission control)

The latest version of the NVP includes:

- A basic evaluation of public transport developments between 2009-2011, including an assessment of the results achieved by former NVPs;
- An update of transport planning principles, which takes into account up-to-date figures and projections about demographics, economic growth and land-use

⁴⁶ Runden Tisch zum Stadtentwicklungsplan Verkehr 2.0. It was moderated by Dr. Christian Neuhaus (Daimler Chrysler). See below the discussion about the choice of stakeholders and the role of the automobile industry.

⁴⁷ For example, progress reports (*Fortschrittsberichte*) are prepared on a regular basis (2014 and 2016) and discussed in Parliament.

- A comprehensive participation process, including the 2nd Round Table for Transport
- New principles for service provision, small-scale infrastructure developments, increased quality targets and quality control measures for the 2014-2018 period.

Before considering current debates about transport policy processes, the next section introduces the current state of transport policy measures in Berlin.

4.3 A selective analysis of major policy measures in Berlin: design and implementation

Notwithstanding the priority given to road and public transport infrastructure improvements, a growing number of transport policy measures were introduced from 1995 onwards. The pace and scope of transport measures promoting a shift away from the car-oriented city intensified after 2003. **Transport policy is traditionally enacted through a classic command-and-control approach, by combining regulatory tools, agreement-based tools and standards.** Most of the policies introduced since 2003 could not be operationalized through tailor-made policy tools but drew upon pre-existing tools from the traffic planning tradition. In a few cases – and increasingly so since 2011, policy measures addressing new priorities in non-motorised traffic and the environmental dimension of transport were introduced by strategically tapping into environmental, climate protection and health policy objectives. This is reflected in the choice of policy tools, which increasingly draw on economic and information-based policy tools⁴⁸. **As a result, the distinction between those policies aiming at mitigating the negative impact of car use (Stage 2 policies) and those seeking to promote sustainable mobility transport (Stage 3 policies) is not clearly demarcated.**

A brief overview and key figures are introduced in Table 6, and some of these policy measures are discussed in more detail below. A closer look at their design and implementation reveals the limitations and ambiguities of the integrated approach.

4.3.1 Traffic regulation in a classic command-and-control approach

Parking management and the ongoing Land-districts power struggle

Parking management was introduced in 1995 in the entire city. Some adjustments were made for residents and parking was also made available for other uses: loading zones, bicycle lanes or storage. The development of parking spaces itself decreased after a change in the Building Code in 1996: until this date, it was required for new buildings to include a certain number of parking spaces or to pay a € 500 fee for each non-built parking space. As of 1996, there is no obligation for a fixed number of parking lots, but this number is part of the negotiation between the investor and the competent public authority, apart for people with reduced mobility. In addition, it is now required to provide new buildings with parking spaces for bicycles.

While all interviewees recognise the potential strength of parking management in shaping behaviours through price incentives, most of them also highlighted major hindrances to its effective use as an instrument to reduce car use. This is mainly explained through the changed distribution of power competences between the Land and the districts over revenues from parking fees. Until 2001, the Land enjoyed this power but in a context of a deep budgetary crisis and major social and political debates about transport policy objectives, little adjustments were made in order to strategically use this policy tool. Since 2002, districts are competent over parking management, but they have no incentive to generate more resources since the budget is now entirely managed at the city level. As a result, there has been no attempt to significantly increase parking fees for residents, which remain extremely low in comparison with public transport fees. This sends a “wrong signal” to users (Interview IHK).

Table 6. Selective list of policy measures introduced since 1995.

Policy measures	When / Aim	Functioning
Parking management	Introduced in 1995, adjustments for residents, parking areas are also made	103,210 parking spaces managed in Berlin, 40 parking zones (2014), total area: 2,980 hectares,

⁴⁸ The typology of policy tools refers to the work of Lascombes and Le Galès (2007, 12).

	available for other uses (loading zones, bicycle lanes or bicycle storage)	"resident parking permit": 20.40 € for two years craftsman parking card: 200.00 € per year, + 40.00 € for every additional car, not more than 3
Reduction in traffic speed	« city-friendly traffic », first introduced in West-Berlin in the 1980s as "traffic calming measures" (verkehrsberuhigte Zonen)	30 km/h speed limit for side-streets in Berlin (over 70% of the road network), over 60 sections of main roads 30 km/h limit between 10 pm and 6 am to reduce traffic noise
Low-emission zone (LEZ)/"Umweltzone"	Improve air quality within the S-Bahn-Ring area (approx. 1 out of 3,5 million inhabitants). It applies to all motorized vehicles except motorcycles. Air quality plans (Luftreinhaltepläne 2005-2010; 2011-2017).	Stage 1 in 2008: old vehicles with particularly high pollution levels are replaced with cleaner vehicles. Stage 2 in 2010: Only vehicles with a green sticker or vehicles with special license in the zone allowed. Stage 3 in 2015: end of exemptions and new criteria.
Cycling Strategy	Since 2003, revised 2011	Modernisation and extension of cycling infrastructure Creation of a Cycling Council Additional targets to be achieved by 2025: Increase bicycle traffic share up to 18-20% of all journeys Increase the attractiveness of cycling on longer routes: average distance traveled to increase by 25% from 3.7 to about 4.6 km Increase links with public transport: additional parking facilities, increase the proportion of combined path Reduce the number of injuries by 30% and of fatalities by 40%
Walking Strategy	2003, revised 2011	"Meeting areas" reduced traffic speed (Tempo 20) citizen participation
Car-sharing	2011, planned	Multi-modal application

In this context, parking management is strategically used in power struggles with the Land, leading to negative side-effects on the development of alternatives to car use, such as cycling policies for example. Even though new bicycle lanes were planned by SenStadtUm administration as part of its Cycling Strategy and StEP 2003 and 2011, their development was blocked by the districts because no compensation for lost parking spaces could be found. Cooperation is particularly difficult with those districts where there is a different political majority. Interviewees from the SenStadtUm administration for transport confirm this view in regards to parking management, Berlin is *"not as advanced as other cities ... Because the districts always have a say. They have the competence to implement the concepts that are introduced at city level, but the city has no say on how these concepts are implemented"* (Interview SenStadtUm Verkehr 2)". More generally, the situation observed in the case of parking management reflects a broader disconnect between levels of policy-making and implementation across policy domains.

Even though the Bezirke's responsibility is highlighted by a large number of interviewees, some outside the SenStadtUm administration also highlighted the need to increase cooperation during policy-making and to introduce some level of differentiation between districts according to density levels, land uses etc. A minority also expressed some concern about an "overcentralized" form of decision-making and the need for stakeholders and residents at infra-metropolitan levels (Bezirke or Kieze) to be consulted.

The Berlin Low Emission Zone

Following the introduction of the London congestion charge in 2003, discussions in Berlin ultimately led to rejecting this policy tool in favour of alternative measures aiming at creating alternatives to car use through

spatial regulation. More generally, this is coherent with the choices made in the German context, where economic regulation tools, such as a congestion charge, are considered difficult to implement due to the structure of the urban network and to the legislation on privacy protection. Moreover, in the Berlin context, congestion was not considered an issue in the inner-city area until the recent period - "*a congestion charge only makes sense if there is congestion*" (Interview Interview SenStadtUm 3) - and its introduction in the wider metropolitan region appeared unrealistic from a political and an institutional point of view⁴⁹.

The introduction of the **low emission zone (LEZ)** or so-called Environmental zone nevertheless represents a policy measures that could have been expected to have an impact on car use, although this was not a principal objective. It was, however, discussed as part of the 2005-2010 Air Quality Plan, in view of its expected impact on air quality and the reduction of emissions. It seeks to mitigate the negative impact of car use as it "helps to protect health" (SenGuv, 2010), and not specifically to reduce car use. Berlin was considered a pioneer within the German context with the introduction of the Berlin LEZ in 2008 by drawing on the EU Commission regulation on improving air quality. It was introduced under the leadership of the Senate Department for Environment, Health and Consumers, who drew on external expert input from the Berlin Energie Agentur, a consultancy firm specialized in energy efficiency⁵⁰, and the Verkehrsclub Deutschland (VCD), an organization representing the interests of all transport users and favouring the diffusion of sustainable principles across transport policy objectives. The Berlin LEZ was restricted to the inner-city area (see Map 5) and applies to all motor vehicles except motorcycles.⁵¹ This area displayed the highest concentration of pollutants in the air due to both the urban structure and the concentration of traffic. Motorized vehicles entering the area must satisfy minimum standards of pollutant emissions and carry a sticker making a clear mention of their pollutant emissions. The marking is carried out by groups of pollutants by means of a red, yellow or green "environmental badge" behind the windshield. Its introduction followed a 2 stages process, respectively in 2008 and 2010, with the strengthening of standards. The introduction of the Berlin LEZ was combined with a series of subsidies and mitigating measures, such as tax reliefs, specific funding programmes and subsidies in support of retrofitting, etc., and with a large-scale communication campaign about "a cleaner motor fleet" (*Sauberer Fuhrpark*) (see Figure 6). Introduced 2 years ahead of the Berlin LEZ, this communication campaign targeted residents and businesses in the metropolitan area, including in Brandenburg.

In regards to the LEZ's impact on transport, the Senate administration for Health, Environment and Consumers' protection (SenGuv) acknowledged "the absence of measurable impact on traffic flows"⁵². By contrast, it did contribute to "a reduction of almost 60 per cent, or 173 tonnes, of diesel soot, and 20%, or 1517 tonnes of nitrogen oxides each year" (2011-2017 Air quality plan⁵³), thus justifying the end of all exemptions by 2015 and the introduction of measures supporting cleaner vehicles and technologies (e.g., natural gas, electric and EURO 6 vehicles for individuals, public transport and public authorities), as well as traffic control, displacement and prevention measures (e.g. promotion of public transport, walking and cycling, mobility and parking management, car-sharing, etc.)⁵⁴. While the strategic use of the Air quality plan is perfectly coherent with

⁴⁹ A traffic control center was developed in 2008 in order to make traffic "more fluid and safer".

⁵⁰ About their input during preparatory works: <http://www.berliner-e-agentur.de/beratung-information/sauberer-fuhrpark>

⁵¹ Interestingly, this LEZ is also the only regulatory framework for commercial freight in Berlin. For more details, see the WP4 City questionnaire for Berlin (Fiechtner and Menge, op.cit., 21-23).

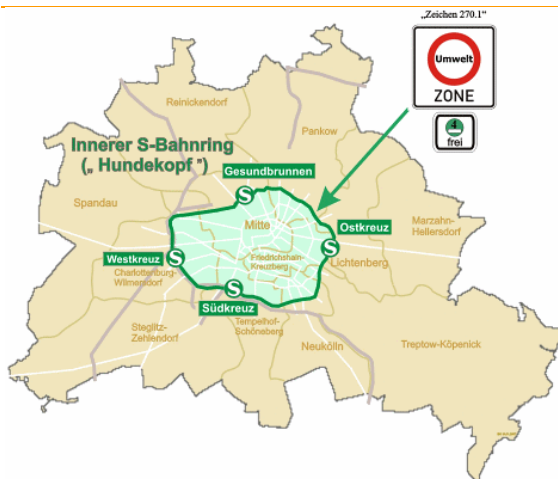
⁵² Lutz M., Rauterberg-Wulff A., *Ein Jahr Umweltzone Berlin: Wirkungsuntersuchungen*, Senatsverwaltung für Gesundheit, Umwelt und Verbraucherschutz, Abteilung Umweltpolitik, Referat Immissionsschutz, Mai 2009.

⁵³ Luftreine- und Aktionsplan 2005-2010 and Available here: http://www.stadtentwicklung.berlin.de/umwelt/luftqualitaet/de/luftreinhalteplan/download/lrp_150310_en.pdf

⁵⁴ On its website, the Senate Department for health, environment and consumers' protection declares that: "In 2012 around 96 per cent of diesel cars and approximately 85 per cent of all trucks had a green sticker. To achieve this, some 60,000 diesel vehicles were retrofitted with particle filters. And there are only minor differences between the environmental zone and the rest of the urban area of Berlin. Without the environmental zone only around 80 per cent of diesel cars and 50 per cent of trucks would be awarded a green sticker. The introduction of stage 2 achieved a reduction in emissions of diesel particles of more than half compared with the assumed trend, and nitrogen oxide emissions fell by around 20 per cent. This represents around 173 tonnes of diesel soot and 1,500 tonnes of nitrogen oxides less each year." (SenGuv, website, 2016). See also the reports published following the introduction of the Environmental zone's 1st and 2nd stages (SenGUV, 2009; 2011), as well as preparatory reports. <http://www.stadtentwicklung.berlin.de/umwelt/luftqualitaet/umweltzone/en/allgemeines.shtml>

the choices made by the SenStadtUm administration as part of negotiations on successive StEP Verkehr, it also shows the need to tap into environmental and health policy objectives in order to support ambitious and visible measures likely to have an indirect, yet strong, impact on the existing motorized vehicles fleet. In line with the principles laid down in the integrated approach, it includes policy measures applicable to all three transport modes. By contrast with transport policy tools, it primarily draws on the use of technologies, emission levels and price incentives, which characterizes forms of environmental policy instrumentation in Germany, rather than a more classic “command-and-control” approach that is often found in transport policy domain.

Map 5. Environmental zone Berlin



Source: SenStadtUm:

<http://www.stadtentwicklung.berlin.de/umwelt/luftqualitaet/umweltzone/en/allgemeines.shtml>

Figure 6. Communication campaign “Sauberer Fuhrpark”



Source: Senatsverwaltung für Gesundheit, Umwelt und Verbraucherschutz, 2006.

This strategy nevertheless created some tensions and resistance among transport policy stakeholders. In Berlin as in other cities in Germany, the environmental NGO BUND acted as a watchdog during the implementation phase, and drew on litigation against localities, districts and companies reluctant to implement the LEZ policy⁵⁵. In Berlin and across the country, this measure was strongly opposed by car users’ representatives (ADAC in particular) and the automobile industry (Verband der Automobilindustrie - VDA) in the local and the national media, public forums and through the production of assessment studies. Some districts, political parties and civil society organizations also called for a “metropolitan LEZ” that would take into account commuters’ flows between Berlin and Brandenburg. Additional resistances came from business owners who particularly depended on motorized transportation for the delivery of goods or their daily activities (Interview SenStadtUm Verkehr 3). This justified the introduction of exemptions and public subsidies between 2008 and 2015. In addition, introducing the LEZ as a pilot project meant that Berliners could not apply for the Federal funds made available some 6 months later in order to facilitate the acquisition of new vehicles (Interview IHK). Few interviewees within the Senate administration commented on this and generally blamed “politicians wishing to make a grand gesture”, and in one case, referred

⁵⁵ Their right to act as watchdogs was recognized in a 2013 ruling. It should be noted that all attempts to contest the LEZ policy through litigation was rejected by the court in successive rulings.

to some tensions between the transport and the environmental departments about this measure⁵⁶. The introduction of later stages in the LEZ policy did, however, seek for increased coordination with Federal regulations. Finally, similarly to the situation observed at Federal level, the LEZ had a strong impact on the car fleet (e.g., new investments, less polluting vehicles, new technologies, etc.) but less so on modal shift and “getting people out of their car”.

The reduction of traffic speed: new wine in an old bottle?

The reduction of speed limits and associated traffic calming measures were introduced in West-Berlin during the 1980s in order to address residents' concerns about safety issues and noise pollution, especially due to car traffic on paved streets. It was progressively extended under the leadership of the Transport administration throughout the 1990s as a preferred mitigation measure. It also justified the continued allocation of additional resources to road infrastructures in order to upgrade the carriageway. This policy was continued and intensified after 2003 (Tempo 30). Traffic is limited to a 30 km/h speed limit in nearly all side-streets in Berlin (over 70 per cent of the road network). There are also mandatory speed limits of 30 km/h on some 60 sections of main roads between 10 pm and 6 am. In this case, the strongest resistance came from the BVG and unions representing bus drivers who denounced this measures' negative impact on the bus network's attractiveness. It also called for the reopening of negotiations about performance indicators as mentioned in successive transport contracts, and denounces it as contradictory to the principles laid down in the integrated approach to transport (Interview SenStadtUm 1).

These findings suggest that, until now, traffic regulation is not primarily understood as a way to actively reduce car use, except maybe for the inner-city area. Rather, traffic regulations aim at mitigating or reducing the impact of car use on air quality and safety. A closer look at policy measures introduced in support of alternatives to individual motorization confirm this first result.

4.3.2 Cycling and walking: towards the normalization of active modes?

Walking and cycling play a major role in transport, especially for those living and working in the inner city (D3.2 report Berlin, p.34). It is considered a key element of Berlin's sustainable mobility strategy since the late 1990s, and together with public transport, they are considered part of an “environmental alliance” (*Umweltverbund*). In order to implement the **walking and cycling strategies**, a modernization and extension of cycling and walking infrastructures was planned on a large scale.

The limits of the integrated approach were made visible during implementation processes and account for these issues continued salience. So far, walking has not been considered a major issue in Berlin, and the city relies on the high quality of its streets network for supporting this transport mode. As part of its 2011 Strategy for pedestrians, the following indicators were introduced in order to monitor implementation: rise in users' satisfaction (*Nutzerzufriedenheit*), decrease of accidents, accessible spaces (*Barrierefreie Räume*), experimentations (*Modellprojekte*), levels of funding. In addition, some 10 pilot projects were initiated, such as “encounter zones”, with the participation of children and adolescents in order to get the perspective of different users of public space. In these areas, traffic speed is reduced to 20km/h. Similarly to the strategy adopted for other transport modes, an advisory board (“Berlin zu Fuß”) was set up in order to support the development and monitoring of the Strategy for pedestrians.

By contrast, cycling policies recently led to major controversies, and shows the limits of the “hands off” approach that prevailed until the very recent period and in a context in which scarce resources were mainly devoted to developing public transport. This is somewhat paradoxical as some 50 per cent of the entire urban area is covered by cycling infrastructure. In addition, the level of bike ownership is high – over 800 for 1000 inhabitants. Recent estimates showed that the number of bikes increased on average by 40 per cent between 2004 and 2012, and on average, some 1,5 million day trips are done per bike that is, 13 per cent of mode shift in 2013. The aim is to increase this share up to 18 to 20 per cent by 2025 (see D3.2 Berlin report, p.67).⁵⁷ Yet a

⁵⁶ Tensions between these administrations are regularly highlighted in the urban studies literature about Berlin (Fleury, 2009).

⁵⁷ As part of the Cycling Strategy, specific building programmes were introduced in order to increase links between cycling and the public transport network. The S-Bahn GmbH (since 1999) and the BVG (since 2006) have built, respectively, 8,500 parking spaces for bicycles at the Berlin S-Bahn stations and 3,000 parking spaces for bicycles at underground stations, tram and bus stops. All in all, over 27,000 Bike & Ride spaces are available in the vicinity of public transport stations.

number of cycling organizations claim that such developments are poorly reflected in the development of designated infrastructures and projects, and few policy-led developments were observed since 1990. This justifies growing social demands in favour of more interventionist and visible cycling policies. These controversies confirm the above-mentioned limits of the integrated transport approach in regards to Stage 3 policies.

The controversy over cycling.

The “Initiative Volkentscheid Fahrrad” was created in 2015 by three activists, and took the opportunity of the 2016 regional elections in order to build pressure on political candidates before the election and since then, on the new red-red coalition in order to shape the coalition agreement about policy priorities in transport. In early 2016, it launched a referendum initiative in favour of a new law prioritizing cycling above all other means of transport and introducing precise indicators about the amount of spending in cycling infrastructures. It received above 90.000 signatures and is now suing the Senate administration for “its lack of responsiveness in the processing of the demand”⁵⁸.

How to account for such saliency? This is partly due to new ways to measure cycling lanes since 2012 (see Table 3 above and D3.2. report, p.35), which contributed to making visible the relative stability in this type of infrastructure. Yet the cycling controversy is also due to changes in the ways through which cyclists’ interests are represented and to the opening of new opportunities outside the transport policy domain and in a context in which historical gatekeepers – pro-public transport and pro-car coalitions – were unable to block such demands. This was observed during the development of the Urban Development Strategy Berlin 2030 (Stadtentwicklungskonzept Berlin 2030), which included several public meetings, and during which cycling “unexpectedly” emerged as one of the most controversial issue on the agenda, together with housing affordability (Interview SenStadtUm Stadt). It is also related to the emergence of new policy entrepreneurs, which repeatedly claim that “not enough has been done” by the Senate as opposed to other transport modes and by drawing on the example of other cities in Europe, such as Copenhagen.

By contrast, other transport policy stakeholders in Berlin, including the long-established ADFC, argue this initiative far exceeded the outcome of the discussions within the “Cycling Council” (FahrRat). This forum was created in 2003 under the Berlin Senate initiative in order to monitor the implementation of the cycling strategy and the development of cycling in Berlin. It also represents the interests of the cycling community through several transport policy stakeholders and acted as a public debate forum on all issues related to cycling as it also includes representatives from the administration and the transport companies.⁵⁹ In effect, the FahrRat plays the role of a gatekeeping organization insofar as it channels demands from civil society organizations while at the same time offering some formal opportunity to shaping policy-making and implementation. In this perspective, the proposal developed by the Initiative Volkentscheid Fahrrad is considered as standing in conflict with the interests of other transport users and stakeholders, among others, public transport companies and priority bus lanes (Interview SenStadtUm Verkehr 1, op.cit.). Following the decision to sue the Senate, the cycling association ADFC (see above) – which is a member of the FahrRat – also publicly expressed some critical views about the implementation of the Senate’s Cycling strategy. Although it supported the referendum initiative and acknowledged sharing similar long-term goals, this organization generally prefers more formalized influence-seeking strategies through the *FahrRat*, for example, policy talks before the elections and public debates.

Delays in processing the referendum results are partly explained due to the Senate administration’s efforts to seek a compromise within the Cycling Council. In addition, increased efforts were made in order to communicate those policy measures that were adopted as part of the Senate’s cycling strategy (*Radverkehrsstrategie*). **Yet this on-going controversy also shows the limits of the compromise-seeking approach that was developed in Berlin since 2003 as part of the integrated approach to transport in case some actors chose to develop free-riding strategies in order to impose more radical views.** It confirms the lack of consensus between transport policy stakeholders regarding the development of cycling as well as the rhythm and scope it should follow. In a number of cases, the development of new bike lanes was hindered as a result of on-going conflicts within the current political majority, within the Senate administration, and between the Senate and the districts, as it implies the reduction of available parking space, which is under the responsibility of

⁵⁸ For more information, see: <https://volkentscheid-fahrrad.de/>

⁵⁹ Full list of participants as of March 2016 available here:
http://www.stadtentwicklung.berlin.de/verkehr/politik_planung/rad/fahr_rat/download/FahrRat_Mitglieder.pdf

districts⁶⁰. The 2011 Berlin Cycling Strategy also clearly states that the development of more ambitious policy measures and projects requires additional funding sources. At present, the minimum level of investment funding in cycling as well as the distribution of powers between levels of government in German context were introduced in the 2020 National Cycling Plan (NRVP)⁶¹. This policy document states that a minimum of € 5 per inhabitant per year should be invested in cycling infrastructures and projects by the Länder, and it makes some funding available for non-investment projects at Federal level (see Figure 7 below). In a context of fiscal austerity, the development of cycling relies upon the SenStadtUm administration's ability to reshuffle a share of transport policy resources between transport modes, such as investment in road infrastructures, or to impose additional requirements on public transport companies, private developers or Bezirke administrations, etc.

Figure 7. Basic financial structure of cycling promotion (2020 NRVP)



Source: 2020 BMBVS/NRVP, DIFU, Cycling expertise 2010.

Current debates about cycling also shows this transport mode's ambiguous status in the context of the integrated approach to transport. Cycling became more and more important on the social and the governmental agendas, but when it came to making policy objectives operational, the City lacked financial resources and infrastructure development measures. Prioritizing the development of public transport alternatives did contribute to reducing the level of support and policy resources towards other non-motorized transport modes. As argued by one of our interviewees, "the length of cycling facilities reveals nothing about the density of the cycling network or the bicycle friendliness of a city. It can at best give a rough idea of the process of completing the main roads with cycling facilities" (Interview SenStadtUm Verkehr 1). Nevertheless, the first Cycling strategy was introduced in 2003 in order to modernize and extend cycling infrastructure on a large scale (roads and parking) and the Cycling Council was created in order to bring together major stakeholders. In order to express their demands, cyclists' representatives preferred institutionalized policy forums and forms of influence-seeking strategies. They repeatedly called for additional safety, express cycling routes to be built in order to address commuter flows and to be given priority above other transport modes. By contrast, exclusive lanes are shared with the BVG's bus network. Car users and districts (see above) also resist the loss of parking spaces, because of the lack of alternatives (Interviews ADFC & SenStadtUm Verkehr 1). Within the SenStadtUm administration itself, the "Initiative Volkentscheid Fahrrad" is considered with caution, first because it challenges the consensus about the integrated approach to transport by focussing only on cycling issues as well as threatening existing power relations between transport modes, and second because it hinders "current negotiations about the use of public space" (SenStadtUm Verkehr 2).

More fundamentally, the cycling controversy shows the limits of the integrated approach as defined and operationalized in 2003 for further developing Stage 3 policies.

⁶⁰ Media coverage in local newspapers regularly highlights these dissensions.

⁶¹ The first NRVP was introduced for the 2002-2012 period, and the 2020 NRVP was adopted in 2013. For more information, see: https://nationaler-radverkehrsplan.de/sites/default/files/forschung_radverkehr/cye-o-01.pdf

The development of a municipally-owned bike-sharing system

As part of increased efforts to make their actions visible, the Berlin Senate funds a bike sharing system. Over the past couple of years, the Berlin Senate increasingly acknowledged the bike-sharing system's pivotal role in the transport system, first within the city centre and as of late, for commuter traffic flows from outer districts. Considering existing levels of cycle ownership, it was originally considered to be mainly beneficial for tourists and was thus postponed for a long time. In addition, the Deutsche Bahn had developed a highly flexible bike-sharing system "Call a bike" in 2004/2005 that was later introduced in all train stations across large cities in Germany. Bikes could be stationed anywhere in the city, and not only in exclusively designed areas. It was further developed as a station-based system in 2008 with the support of the Federal government and eventually led to some resistances among existing users who valued the old system's flexibility as its main added value vis-à-vis the use of a private bike. Cyclist representatives also criticized the system's poor integration in the local public transport network, and repeatedly demanded for the pricing system to be integrated into the public transport tariff system (Interview ADFC, op.cit.).

Since 2012, the Berlin Senate directly supports the extension of bike-sharing system's station network through public funding. The public bike-sharing system is mainly concentrated within the S-Bahn ring and in 6 districts (see Table 3 above). In 2015, the total number of rides added up to 330.000 rides per year and some 90.000 users (see D3.2 report, p.35). Following a new call for tender in early 2016, NextBike now operates the public bike-sharing system; it plans to extend the network up to 175 stations and a minimum of 1750 bikes⁶². Also, it will now be integrated into the public transport tariff system. This recent evolution confirms a changed approach towards the bike-renting system, which isn't considered anymore as a poor replacement for bike ownership or as a tourists-driven transport system.

This is not done, however, at the expenses of public transport, but rather tends to confirm this transport mode's role as the backbone of Berlin's transport system. Cycling as a whole is supposed to contribute to the transport system's overall efficiency, including in those areas where the public transport network is less dense. In this perspective, the bike-sharing system is considered as an additional "building block" that contributes to making the public transport network more attractive. Several interviewees expressed this view: *"The bicycle should become a component of people's everyday mobility, by connecting them from their home to the railway station with their own bike and from the railway station in the inner city to their workplace with a shared bike. This should prevent people who do not live at a walking distance from a railway station to take their car. Because then usually, they take the car all the way"* (Interview SenStadtUm Verkehr 3). Another interviewee highlighted remaining coordination issues with the regional network mainly: *"The bike-sharing system relieves pressure from regional trains with bicycle compartments, which take up a lot of space for other passengers. An issue to be resolved, however, is the storing of bicycles at railway stations in the outer city, because thefts occur regularly"* (Interview ADFC)⁶³.

More generally, this recent evolution puts an end to the somewhat ambiguous role of cycling in Berlin's transport policy and confirms the shift that took place in 2015-2016. Cycling is now increasingly integrated in urban transport policies as a transport mode in its own right. As such it benefits from increased policy resources and justifies the development of flagship projects.

4.3.3 Car sharing and ride-sourcing: a first step towards a smart mobility approach?

Over the recent period, another change has been taking place in Berlin in terms of the development of an approach to transport policy that favours the "user's choice". This includes the development of car-sharing and ride-sourcing, and there again, the development of new forms of mobility contributes to transforming the role of the SenStadtUm administration as regulator and highlights the need for new policy processes.

⁶² Nextbike was founded in Leipzig in 2004 as a regional enterprise and operates bike sharing systems in more than 100 cities worldwide: "35,000 Bikes, 23 Countries, 4 Continents". <http://www.nextbike.de/en/berlin/company/>

⁶³ According to an expert from the ADFC, large groups of organized criminals are responsible for stealing large numbers of bicycles and selling them in Eastern Europe. No other source was found in order to support this claim.

Car-sharing as a unique case of privately regulated mobility offer

Car-sharing was introduced in Berlin as a measure aiming at reducing pollution within the city, and the city is considered a pioneer in the context of Germany. Its development follows that of similar citizen initiatives in other European cities (Huré, 2012). Car sharing originally developed in the form of a citizen initiative “StattAuto” (roughly: *instead of a car*), whose members wished to increase the use of their private cars by sharing it when they didn’t need it. It was founded in 1988 with only one car being registered, and by 1993, some 54 cars were being shared before the organization was taken over by Dutch company Greenwheels in 2005. Between 2007 and 2012, this small market underwent a rapid development phase, with several public and private operators offering car sharing services: Stadtmobil, Cambio, Hertz on Demand, Flinkster (by Deutsche Bahn), DriveNow (by BMW), Car2go and Multicity⁶⁴. The latter were the first to offer a fleet of 100 per cent electric cars. Until 2012, it was often referred to as “the biggest privately regulated car-sharing system in Europe and in the absence of any mobility plan” (Interview car-sharing expert, Paris, November 2014). These mobility services were mainly intended as complementary to other transport systems (“last mile”, or rather less than 3kms). As of today, Berlin draws on the largest offer worldwide of “one-way trips” car-sharing services, that is a system allowing to rent a vehicle in one location and drop it off in another thanks to a geolocation system.

Even though some districts used their jurisdiction over parking management in order to support car-sharing through the provision of parking spaces, the City of Berlin only recently begun to discuss car-sharing issues. The overall urban benefit (*gesamstädtischer Nutzen*) is considered limited (Interview SenStadtUm Verkehr 2).⁶⁵ As part of the StEP 2011, there have been some attempts to better coordinate this mobility offer as part of the mobility plan. Similarly to the situation observed in the case of the bike-sharing system, the city sees some potential added value to the development of car sharing as a complement to public transport. Yet it does not consider developing such a system itself. Rather, it supports its integration into the public transport tariff structure by fostering cooperation between the BVG and car sharing companies (ibid.). This is mainly achieved through information management and a mobile application neutral of interest is currently being developed in order to integrate information about public transport with information from car sharing organizations. This app illustrates the superiority given to public transport in relation to other forms of transport and mobility in the context of the City’s transport policy. According to the views represented within the SenStadtUm, this administration only considers new forms of mobility insofar as they complement the public transport network and contribute to enhancing its attractiveness and efficiency. The development of this multi-modal application might, however, also represent a first step towards a “shared” and “smart” mobility” approach that would put greater emphasis on users’ choices by encouraging original combinations between transport modes and facilitating compatibility between modes as a preferred way to further support alternatives to car use.

Within the Senate administration and among experts, this strategy is considered compatible with the integrated approach to transport only to some extent and allows integrating new forms of mobility without challenging existing power relations between main transport stakeholders. In addition, it also offers the SenStadtUm administration an opportunity to mobilize support from the private sector and among citizen initiatives during current negotiations with the automobile industry and public transport operators such as the DB regarding the use of public space. As expressed by one of our interviewees: “*citizens are invited to participate in current negotiations about the use of public space by informing them about alternatives to the use of an individual vehicle*”⁶⁶. Nevertheless, the development of a “shared” and “smart” mobility” approach that puts greater emphasis on users’ choices is also considered a potential threat to the priority given to public transport as the backbone of the transport system.

⁶⁴ The Federal Association of Car-sharing (Bundesverband Carsharing) listed some 110 companies offering car-sharing services in 2015.

⁶⁵ According to one of our interviewee: “if 3000 shared cars are used four times a day, this only adds up to a total of 12000 itineraries. By contrast, a total of 12 million itineraries are listed every day in Berlin”. This could not be checked through other sources.

⁶⁶ See below for a more detailed presentation of concrete policy measures.

Ride-sourcing and the controversy over Uber services⁶⁷

By contrast, the development of ride-sourcing⁶⁸ in Berlin is considered a highly controversial issue due to the mobilization of taxi drivers and companies against the development of Uber services. Unlike the controversy over cycling, it was primarily addressed through legal rulings as a preferred action repertoire. Uber started developing its ride-sourcing services in Berlin in 2013, until it was suspended by the Berlin Senate's decision on the ground that the driver's insurance contracts did not cover the carriage of passengers. Between 2014 and 2015, a long series of legal rulings and appeals progressively led Uber to reduce its services in the German capital and to strictly restrict it to the uberTAXI option – using traditional taxis riding at standardized city fares⁶⁹. In December 2015, it counted with 1,600 drivers, against 50,000 taxi drivers from local companies across the country and 7,600 in Berlin alone.

Germany seems to be one of Uber's most difficult fronts. Previously found in Frankfurt, Düsseldorf, Hamburg, Berlin and Munich, it is now only present in the last two. Among the reasons for the company's retreat are increased regulations and local hostility to the Uber model (from both licensed taxi businesses and users). Here, it may be possible to suggest the prevalence of the solid German legal system. This process seems to have strengthened local actors such as MyTaxi, a subcompany of Moovel GmbH (Daimler AG), and Taxi.eu run by Hermann Waldner, the managing director of a Berlin taxi dispatch centre. Both companies offer services across several European cities, including Vienna. Additionally, the taxi industry developed new services in order to become more attractive: possibility to order via an application, tailored services (e.g., van, child seat, drivers who speak other languages), price range as to be more attractive, additional payment methods (e.g., credit cards, Paypal, etc.).⁷⁰

Analysing the design and implementation of specific transport policy measures in Berlin accounts for the prevalence of Stage 2 policies, and more specifically, the dominant role of public transport as the main alternative to car use in combination with a low degree of pressure on car users. The development of ride-sourcing and car-sharing, together with recent controversies about active transport modes, also highlights the way through which such policy priorities are deeply rooted and reproduced in forms of transport and urban governance. In this context, the development of stage 3 policies is initiated outside institutionalized forms of policy-making and under the pressure of policy outsiders and new entrants.

4.4 Future challenges in transport policy processes

The evolution of transport policy objectives, processes and measures in Berlin suggests some elements of both continuity and change. It also shows that no radical shift away from “the car-oriented city” was introduced, in part because public transport always played a leading role in urban expansion and development. These policy choices and traditions, inherited from the industrialization age in the beginning of the century still have an impact on how transport policy is expressed in Berlin. The development of new forms of governance as part of the Stadtforum and their institutionalization as part of the StEP 2003, did contribute to the development of alternative sources of expertise and information, policy tools and coordination mechanisms and to the building of new alliances within and outside the Senate administration. The operationalization and implementation of the integrated approach highlighted the limits of this consensus-seeking strategy in a context in which the “pro-public transport” and the “pro-automobile” coalitions still hold a vast share of resources and veto-power. As such, the integrated approach has not been able to fundamentally change transport policy goals.

⁶⁷ These paragraphs draw on research input provided by Gabriela Neves da Lima, during her internship at Sciences Po, CEE.

⁶⁸ As defined by Flores and Rayle, ride-sourcing are “smartphone app-based ride services, offered for profit, not incidental to the driver's trips, using personal vehicles” (2015: 1).

⁶⁹ On April 2014, the Berlin Taxi Association filed a case against Uber to the Berlin district court, which banned Uber services. Later, in August, the Taxi Deutschland trade association filed a legal complaint against the company, claiming that the drivers did not have licenses to operate nationwide. This decision was altered only fifteen days later (September). Finally, in March 2015, the Frankfurt regional court ruled that all Uber drivers must hold official permits to operate, without which they were violating passenger transport law and imposing unfair competition on taxi drivers. Despite the decision, they continued to offer the low-cost service for a while and tried to recruit licensed operators to build services within legal terms. However, they could not persuade them even after offering to pay for licenses and help with other regulatory costs that totalled \$400 for new drivers.

⁷⁰ Apart from tourists, the added value of this service is unknown as credit card use is generally lower in Germany.

The SenStadtUm administration nevertheless acknowledges the increasing complexity of transport governance and the need to include new actors, address new issues, and develop new coordination mechanisms.

4.4.1 The changing role of the SenStadtUm administration: from an administrative authority towards a regulator

In addition to its classic role as an administrative authority, the SenStadtUm administration increasingly acts as a regulator. It faces repeated challenges from a large variety of self-interested actors (public authorities, private companies, professional organizations, transport companies, civil society organizations, etc.). This highlights the need for new coordination mechanisms in order to strengthen its leadership both internally and externally. Also, it highlights the pivotal role played by human resources and sources of professional expertise over transport policy developments over time.

The development and diffusion of the integrated approach to transport occurred gradually by combining individual leadership⁷¹, successive administrative reforms (see section 3) together with political changes and the development of new policy initiatives, such as the Stadtforum⁷². Even though this approach is considered a cornerstone in Berlin's transport policies since 2003, its effective implementation still required continued efforts from the SenStadtUm administration in order to mobilize resources both internally and externally. To a large extent, each administration still follows its own interests, priorities and preferences in its daily work and this might sometimes lead to some contradictions (Interview SenStadtUm Verkehr 1). Also, this ability to ensure this approach's effective implementation depends upon continued political and administrative support within the ruling coalition and this administration's political and administrative hierarchy.

In addition, this diffusion process relied upon the changes taking place in the organization of transport and Dr Kunst strategically used the need to produce mobility plans and transport contracts as an opportunity to progressively induce policy change and increase its autonomy vis-à-vis traffic planners, transport companies and the construction industry. To some extent, this strategy also resulted from the need to cope with major cuts in both human and financial resources and allowed additional room for manoeuvre vis-à-vis traditional approaches to transport planning.

First, recruitment strategies led to the arrival of a younger generation of urban and transport planners that supported the integrated approach to transport. Second, the administration also outsourced some of its tasks, for example preparatory works on the second local transport plan (NVP), to private contractors. This was considered an opportunity to benefit from an outside perspective, to develop new tools and methods, and to rely upon diverse sources of professional expertise. This was summarized as follows during interviews with SenStadtUm: *"We've managed to buy in a competitive group"* (Interview Kunst, op.cit.). Another one added: *"We generally work with a lot of contractors, we are a pretty small team, [...]"* (Interview SenStadtUm Stadt).

The reduction of personnel does, however, raise new challenges in order for the SenStadtUm administration to keep up with new tasks and mobility issues, and in a context of renewed demographic growth (Interview SenStadtUm Verkehr 2). Dismantling in-house resources may, over time, lead to the loss of knowledge and steering capacity. In addition, changes in transport and mobility, including the development of new forms of mobility, as well as regulatory constraints related to managing policy processes (e.g., calls for tender, indicators, reporting, etc.), elaborating plans, strategies and programmes, monitoring their implementation and assessing their impact, also contributes to the above-mentioned shift in this administration's role from an administrative authority towards a regulator. This requires different sets of skills and diversified sources of expertise. Also, change was less unequivocal in the case of the traffic administration, thus leading to some tensions within the SenStadtUm administration. Conflict solving capacity now lies with the responsible Senator – by contrast to the previous period when it involved lengthy political and administrative discussions between several Senate departments – thus somewhat contributing to depoliticizing internal decisions (Interview SenStadtUm Verkehr 1).

⁷¹ Dr. Kunst played a critical role in this process. Trained as an urban planner, he had been working with the SenStadt administration in West-Berlin during the 1980s and was appointed Head of the Transport Department, Senatsverwaltung für Stadtentwicklung des Landes Berlin between 2002 and 2013.

⁷² This is further developed in D4.1 report.

As a result of these internal changes, the development of new transport policies and projects increasingly relies on both internal and external expertise, and more importantly, on highly diversified sources of expertise such as lawyers, urban planners, economists, etc. In this context, the administration increasingly acts as a mediator. The Berlin Strategie 2030⁷³ offers a good and recent example of this evolution. It was developed by a Swiss company based in Potsdam. By contrast, the administration acted as project manager, coordinating the document's content and acting as the interface between the political and the administrative spheres on the one hand, and between Senate departments on the other (Interview SenStadtUm Stadt). In order to avoid internal conflicts – and the need to seek for political mediation at the Senators' level – and ensure implementation, new coordination tools were developed internally in order to seek other Senate departments' contributions, especially the departments of economics, and social affairs. These tools drew on participatory processes with citizen and stakeholders, as a way to build internal consensus.

The cycling controversy and the discussion about ride-sourcing (see below) nevertheless suggest the limits of the integrated approach and of the consensus reached in 2003. Apart from the 2016 regional elections, preparatory works for the Berlin Strategie 2030 (Strategic planning document) opened some opportunities for new issues and actors to increasingly challenge current transport policy objectives insofar as they are embedded in forms of governance and tools that primarily benefit to public transport and partly seeks to reduce car use⁷⁴. Following the 2016 elections, political agreements and organizational changes also suggest that advocates of a more radical approach to “greening” transport have gained increased power within the Senate administration⁷⁵. The inclusion of new issues and actors in future transport policy developments highlights the need to challenge current power relations between major stakeholders.

4.4.2 Innovations in transport governance: integrating civil society actors in transport policy processes.

Another characteristic of transport policy developments in Berlin is the role played by citizen organizations and social movements as critical transport policy challengers and a driver for change in a consensus-driven political system. As shown in previous sections, civil society organizations have played a critical role since the 1970s as veto-players⁷⁶, whistle-blowers, watchdogs and agenda-setters. They also exerted an indirect role on politics and policy-making by developing strategic relations with political parties, as observed in the case of the Greens for example, or with districts, as observed in the case of successive anti-road campaigns including protest against the A100. Although some differences can be observed over time and between organizations, influence-seeking strategies usually combine protest, litigation, knowledge production, and lobbying.

Despite their pivotal role, the formal integration of civil society actors in transport policy processes remained limited until the recent period. At first, the large diversity of civil society organizations encouraged strategic – and selective – approaches to participatory processes in order to target grassroots organizations, NIMBY groups, representatives of various transport modes, etc. Due to repeated opposition from civil society organizations and other interest groups, several attempts were made in order to integrate them from an early stage on in the planning process in order to avoid conflict. Drawing on the experience of the Stadtforum, different participatory devices were introduced in close relationship with the integrated approach to transport in order to

⁷³ Its content is presented in further details in the following section.

⁷⁴ This document a “common direction, a common ground, to which all actors can refer when proposing new policy measures, tools or new projects” (Interview SenStadtUm Stadt). Unlike its predecessor, the Berlin Strategie 2025, introduced in 2005, its development mobilized a large number of Senate departments and stakeholders outside the Senate. It was formally adopted by the Senate in order to increase its legitimacy.

⁷⁵ Following the 2016 elections, the reshuffling of portfolios confirmed the merger with the creation of the Senate Department for the Environment, Transport and Climate protection, with Regine Günther as Senatorin (formerly working with the green organization WWF, no party affiliation) whereas Urban development and Housing now form a separate Department. The new State secretary for transport, Jens-Holger Kirchner, also from the Green party, is considered a pragmatist and was formally elected at district level in Pankow.

⁷⁶ In the work done by Tsebelis (2002) in his analysis of a political behaviours, the notion of “Veto players” is used as a tool for highlighting the role of specific actors within the system who have the potential to block any change in the status quo and as such, to influence policy outcomes.

target specific civil society organizations: stakeholders from the transport policy domain, stakeholders across policy domains, and public debates. Yet the SenStadtUm administration recognizes the constraints and costs associated with large-scale participation processes while at the same time failing to provide sufficient representation to citizen as opposed to organized groups. This also explains why additional efforts were devoted to the development of participatory devices at the level of the Bezirke (Interview SenStadtUm Verkehr 2)⁷⁷, as well as monitoring tools in order to encourage and guide Bezirke's administrations in using such devices.⁷⁸

Until the recent period, participatory devices were introduced on an ad hoc basis. Similarly to the situation observed in other European cities, the inclusion of civil society organizations in transport policy-making and implementation in the Berlin context raises classic issues of representativeness as well as questioning the Senate's motivations. To some extent, the development of collaborative forms of governance is considered a preferred way to reducing opposition and transforming some of these organizations into transport policy insiders while other groups are marginalized. Nevertheless, the recent referendum on cycling policies confirmed the limits of this approach. Over the recent period, the SenStadtUm administration seeks to improve the quality of participatory devices by developing a more coherent and comprehensive strategy. Drawing on the support from outside contractors, such as Gehl Architects for example, the aim is to reduce the paradox of civil society participation between efficient planning and the opportunity given to the largest possible number of actors to express their view (Interview SenStadtUm Verkehr 3). The recent referendum on cycling policies also highlighted the need for increased information and communication campaigns in order to better highlight policy achievements among the wider public.

Nevertheless, the extent to which the integrated approach effectively transformed transport policy objectives, processes and outputs remains a hotly debated topic among three groups of civil society actors: those in favour of a more radical shift towards sustainable mobility policies, those protective of the status quo and those representing the interests of a particular transport mode. It also questions the ambiguity of civil society organizations and the need to further differentiate between stakeholders, grassroots organizations, NIMBY groups and citizens.

First, while acknowledging the amount of resources invested in this policy domain, most actors are also critical of the fact that changes in transport behaviours are "poorly reflected" in transport governance and policies: the lack of coordination between Berlin and Brandenburg, resistances from the districts, or the dominant role of public transport companies. In this perspective, the focus on infrastructure investments and public transport services is considered "old school", and opposed to the development of other forms of mobility, new technologies and a "users' choice approach". Second, the disconnection between sustainable mobility policy goals and effective implementation and enforcement is often highlighted in relationship with the resistance from car users and bus drivers. The administration itself recognizes some deficits and delays in implementing pro-cycling policies, as "it should rather take two years than five to build a bicycle lane" (Interview SenStadtUm Stadt). Nevertheless, as consensus-seeking strategies prevail, effective planning and implementation only starts when negotiations with the districts, the BVG and self-interested civil society organizations resulted in an agreement. Indeed, some actors express mixed views about the role played by the tradition of "a politics of the middle", and consider it both an enabling driver of change ("pragmatist", "consensual") or a hindering factor ("lack of political ambition", "the recycling of old ideas"). Whereas the role of the "environmental alliance" is often referred to by political and administrative representatives, civil society organizations argue that public transport and individual motorization are overrepresented in policy-making and the allocation of resources to the expenses of other transport modes who benefit from "mere lip service" (Interview IGEB).

Third, the transparency and inclusiveness of forms of governance is questioned, in the context of the ability of public transport companies and the automobile lobby to shape policy design and implementation during negotiations on transport contracts and yearly budgets, as well as during negotiations taking place at Federal level. The case of the A100, and its successive extensions, is regularly mentioned by interviewees as a "vivid homage to the ideal of the car-friendly city" from the conservative party, either at regional or at Federal level, and in support of the automobile and the building industries (Ibid.). Another interviewee adds that the only difference

⁷⁷ This includes a wide range of devices: online-participation tools, modelling projects, collaborative project design, "meeting areas".

⁷⁸ This includes guidelines and toolkits, a common online platform for all participatory processes city-wide, workshops and networking activities across Bezirke's administrations, etc.

lies in the policy framing that justifies current extension projects as a way to “alleviate traffic congestion” at neighbourhood level as opposed the 1980s, when it was justified in order to “improve traffic flows and driving conditions”. Nevertheless, as with any other large infrastructure project, the development of urban highways remains a form of “urban destruction” (*Stadtzerstörung*) and major connecting nodes are likely to observe a rise in traffic flows.

This leads to a fourth stream of criticism about the long-term impact of the integrated approach over the active reduction of car use. Priority is given to mitigating the impact of individual motorization and promoting public transport. One interviewee summarized this as follows: “there are many policies implemented in order to strengthen pull factors for public transport, but almost none to strengthen push factors from car use” (Interview ADFC). The City pushed for implementing indirect push factors to reduce parking space and regulate parking, e.g. with parking management and enlarging the cycle lane network. This raises the issue of influence-seeking strategies from organizations representing car users, such as VDA, and the automobile industry. According to a number of interviewees, this is not specific to Berlin, but to Germany as whole, considering the critical role of the automobile industry in the national economy. These associations participate actively in public debates about emission standards and the elaboration of policy measures aiming at reducing the impact of transport and the automobile on air quality and climate change⁷⁹. Recent debates about the so-called “Volkswagen scandal”, and the results produced as part of successive enquiries, support this view. Additional concerns are also raised in view of the recent development of a “shared” and “smart” mobility” approach that puts greater emphasis on users’ choices, especially in those areas in which alternatives to car use are less developed. This is not Berlin specific and as in the case of other Stage 3 cities in the CREATE project, it could also be understood as a new avatar of the car-oriented city model and the result of active lobbying from car users’ representatives in order to reframe mobility issues in a way that allowed distancing themselves from an “all-car” ideology and from Stage 1 infrastructure and policies. Yet by highlighting the essential role of the car for people’s everyday life, and promoting users’ choice throughout the life cycle, this approach suggests putting the car at the centre of the transport system as opposed to public transport, while all other transport modes are considered complementary.⁸⁰

In addition to these critical views about the results achieved by the integrated approach, other civil society organizations express some concern about projected demographic growth, and the need for transport policies to shift from an “inventory management” towards growth oriented policies. Several representatives mentioned that a key challenge would be to manage an increase in population without an increase in car use, and felt that an entirely different approach would be needed, as well as new forms of expertise, in order to maintain public transport as a dominant transport mode. Following preparatory works for the BerlinStrategie 2030, a “Pro-tramway alliance” (*Bündnis ProStraßenbahn*) emerged from across large number of political and civil society organizations. Plans to extend the tramway network, especially in the Western part of the city where it is almost non-existent, were developed during preparation of the 2016 campaign. Together with transport policy experts and with the active support of the SPD, a common proposal was developed across the “urban society” (*Stadtgesellschaft*) and later discussed in meetings organized by the SPD and to which other left-oriented parties (Bündnis 90/Die Grünen, Die Linke) and some 11 associations considered active in the public debate about transport policy, including IGEB, BUND and VCD Nord-Ost among others, were invited. One participant to these workshops highlighted close interconnections between political and social organizations in coproducing transport policy goals and maintaining the primacy of rail-based public transport since their first mobilizations in West-Berlin during the 1980s: “*These actors have known each other for years; they have all been involved in the fight to promote rail infrastructure. They took advantage of this window of opportunity offered by the SPD to create a consensual document*” (Interview IGEP).

Notwithstanding current political and social efforts to ensure the pivotal role of public transport as the transport system’s backbone, demographic and socioeconomic trends further constrain transport policy choices and resources in the context of the StEP Verkehr 2025 and the Berlin Strategie 2030.

⁷⁹ See Interview with Prof. Dudenhöffer about the role of the automobile industry in Berlin: <https://www.uni-due.de/~hk0378/publikationen/2015/201504-Standort38.pdf>

⁸⁰ According to VDA, a student living in the inner-city centre without a family and not owning a car is not a problem.

4.4.3 New challenges in a context of demographic growth?

New challenges, within and outside the scope of transport governance and policies, were identified during the preparation of the StEP Verkehr 2025. For the first time in several decades, the population is expected to grow rapidly up to 3,828,000 by 2030 – some 7,5 per cent growth in total – with an average yearly increase of some 135.000 residents.⁸¹ The recent refugee crisis also contributes to added demographic pressure. Urbanization patterns show, on the one hand, a growing re-urbanization of the inner city and on the other hand, continued urban sprawl. New areas are currently under development outside the inner-city area, thus justifying new infrastructure investments in order to ensure a good level of service throughout the city. These developments are a major source of concern. Two policy areas are particularly salient in debates among policy-makers, practitioners and the general public: housing⁸² and, to a lesser extent, transport. Finally, Berlin is not a rich city – quite the contrary. Funding is scarce, especially in the transport sector, and in a context in which regular Federal local public transport funding sources will disappear after 2019.⁸³

Together, these demographic and socioeconomic challenges highlight the need for additional investments in transport in a city that remains characterized by relatively low levels of income - when compared with other cities in Germany - and high levels of public debts.

In addition to those challenges that are external to the transport policy domain, additional challenges also result from forms of transport governance and policy-making. Transport policy issues remain highly politicized in the Berlin context. Preferred forms of social mobilizations, and the ways through which social movements and civil society organizations channelled their demands have shaped transport policy processes. Beyond their opposition to specific projects and policy measures, these mobilizations also challenged forms of policy-making and implementation. Furthermore, the so-called “S-Bahn” crisis in 2010 highlighted the need for increased control and monitoring over public transport companies, as well as increasingly blurred responsibilities in the context of a multi-level governance system. Interestingly, recent public debates organized as part of the Berlin Strategie 2030 highlighted growing social demands in favour of additional efforts in the field of cycling, including investments for new facilities and services.

⁸¹ See Fiechtner and Menge, Berlin City report, WP4, CREATE Project.

⁸² In the case of housing, this is also explained in relationship with debates about housing affordability and accessibility.

⁸³ The funding scheme will be replaced by a modified scheme of “Regionalisierungsmittel”. For more information, see: http://www.stadtentwicklung.berlin.de/verkehr/politik_planung/step_verkehr/download/StEP_Verkehr_Fortschrittsbericht2.pdf, pp. 4-5.

5 Concluding remarks: Taking stock, looking forward

In a context of increased demographic growth and reluctance to introducing more ambitious car reduction policy measures, how will the Berlin Senate achieve its objective to gain “more citizens without more traffic”? In view of the city’s investment capacity and ability to steer investments from public transport companies, will the public transport network support such increased pressure? How to develop Stage 3 policy innovations on a larger scale and extend them beyond the inner-city area?

Since the year 2000, several indicators show that a major transformation has been taking place in transport behaviour. The reduction of car use in the inner-city area was confirmed, and can be measured by looking at the modal shift, the level of stress onto the road network, reduced numbers of highly polluting vehicles, and reduced numbers of accidents (both fatal casualties and seriously injured)⁸⁴. When it comes to transport modes, Berlin has seen a clear growth in non-motorized transport alternatives. This shift has been achieved in a unique institutional, political, demographic and socioeconomic context.

Analysing the evolution of policy objectives, processes and measures over time also accounts for this shift. It confirms the pivotal role of public transport as part of the integrated approach to transport. When analysed from a public policy perspective and when considering the role played by institutional legacies over time, Berlin emerges as “the European capital of public transport”. This is first explained by the transport system itself, and second, by the active mobilization of a pro-public transport coalition at both the Federal and the city levels. Consensus-seeking strategies combined with a context of financial resource scarcity favoured a gradually transformative approach, thus explaining why the core of transport policies pertains to Stage 2, that is, mitigating the negative impact of car traffic and improving public transport. As a rather vague policy objective, this approach also encourages a certain level of competition between actors for seeking influence over policy-making and the distribution of resources to the benefit of public transport modes and users. It sporadically led to conflicts between dominant transport modes (public transport, car users) and active transport modes (walking, cycling).

The development of new policy tools and the search for alternative sources of expertise also accounts for the shift in transport policies. Successive organizational reforms within the Senate administration, the strategic use of infrastructural crisis (e.g., S-Bahn crisis in 2010) and the development of new alliances with civil society organizations within and outside the transport policy domain have also contributed to strengthening its authority both internally and externally. It also contributed to somewhat de-politicizing transport policy issues and to institutionalizing new forms of coordination within and outside the Senate in the transport policy domain. Some 15 years after the introduction of the integrated approach to transport, this policy domain is increasingly organized by public policies. This is particularly the case in the inner-city area. Yet the analysis also shows that Stage 3 policies and innovations are mainly developed at the margins or outside the transport policy domain by strategically tapping into other policy resources (e.g., environment, climate change, health). Other Stage 3 initiatives are weakly organized by public policies (e.g., cycling, car-sharing), and their recent integration contributes to changing the role of the Senate Department for transport from that of an administrative authority towards acting as a regulator.

As suggested by the analysis done as part of WP4, the Berlin case highlights an interesting paradox: **the reduction of car use probably results from increased political capacity to effectively regulate transport without antagonizing pro-car groups, yet there is a growing demand in favour of more visible and symbolic measures that would mark a definite step away from the car-oriented city.** The analysis done in this report suggest that an additional shift in both policy objectives and policy tools is needed in order to go beyond the changes brought on by the integrated approach to transport since 2003.

1. Unless a definite shift away from the car-oriented city is promoted throughout the metropolitan region, population increase and urbanization patterns are expected to lead to an increase in traffic volumes outside the inner-city area while at the same time, issues related to age, gender and income are also expected to impact transport demands in the metropolitan region.

⁸⁴ See D3.2 Berlin report.

2. This also calls for increased efforts in promoting alternatives to car use and public transport beyond the inner-city area, such as cycling and walking, through communication campaigns and a wider range of policy incentives.
3. Apart from the work done by the VBB, the lack of institutionalized forms of cooperation with the Brandenburg region in order to regulate transport patterns and flows within the metropolitan region contributes to increased uncertainty when it comes to assessing the robustness of car use decrease in the Berlin context. This questions the Berlin Senate's ability and willingness to exert additional pressures on two different groups: car users on the one hand, in order to reduce the role of motorized vehicles for both individual and commercial uses throughout the metropolitan region; and public transport companies on the other hand, in order to make the public transport offer more flexible, multimodal, and adapted to individualizing mobility patterns.
4. Sustainability requirements as well as air quality and noise pollution standards are expected to become more stringent. Such regulatory constraints can only be partly addressed through technological innovations, new technologies and the collaborative economy. This calls for exploring new funding sources and transport management strategies. Increased traffic management and optimization strategies are needed throughout the transport network.

In conclusion, the three stages model only selectively applies to the Berlin case and this is only partly explained by the city's unique history. Similarly to other large European capital-cities, Berlin was "planned, built and constructed when the car did not play a role yet" (Interview VDA). While the car-oriented city model dominated professional cultures and policy objectives until the recent period, its operationalization through policy measures and infrastructure projects was constrained due to the lack of investment and funding capacity on the one hand, and to the ability of anti-road campaigners to develop strategic alliances with other institutional and political challengers on the other hand. When considering economic growth, fiscal revenues and investment capacity, the city can still be considered an outlier case in comparison with other west-European capital-cities.

Yet the analysis also suggests that the transition towards the liveable city model is a work in progress as it is the case for all other CREATE stage-3 cities. The main feature of Berlin's integrated approach to transport lies in the pivotal role of pro-public transport and pro-car coalition willingness to define the terms of the debate. The analysis showed the extent to which forms of transport governance directly contribute to maintaining – and reproducing – existing power relations between transport modes. In a context of demographic and urban growth, continued efforts will be needed in order to ensure that public transport retains its role as the transport system's backbone, including in areas located in outer-city areas and adjacent municipalities in Brandenburg, while at the same time, further developing new forms of mobility as part of the integrated transport approach.

6 Sources

6.1 Documents produced as part of the CREATE project.

Halpern, C., Persico, S., (2016), D4.1 Internal report WP4, CREATE Project, 131 p.

Fiechtner, M., Menge, J., (2016), Berlin city report WP4: past and present changes in urban transport governance and policies, CREATE Project, Berlin, 25p.

Fiechtner, M., Menge, J., Wittwer R. (2016), D3.2 Technical report for Stage 3 city: Berlin, CREATE Project, 107p.

6.2 List of interviews

- Dr. Kunst, Urban planner, former Head of Transport Department, Senatsverwaltung für Stadtentwicklung des Landes Berlin.
- SenStadtUm Verkehr 1.
- SenStadtUm Verkehr 2.
- SenStadtUm Verkehr 3.
- SenStadtUm Stadt.
- Automobile association Germany, Regional office Berlin-Brandenburg (ADAC Berlin-Brandenburg), Phone interview.
- Passenger association Berlin (IGEB), Phone interview.
- Chamber of Commerce and Industry of Berlin (IHK Berlin), Phone interview.
- German Cycle Association Berlin (ADFC Berlin), Phone interview.
- German Association of the Automotive Industry (VDA), Phone interview.

6.3 References

Aust, B. (2002). *Berliner Pläne 1862 - 1994*. Berlin: Senatsverwaltung für Stadtentwicklung. Available at: http://www.stadtentwicklung.berlin.de/planen/fnp/pix/historie/Berliner_Plaene_1862_bis_1994.pdf

Colomb C. (2012), *Staging the New Berlin: Place Marketing and the Politics of Urban Reinvention Post-1989*, London and New York, Routledge.

Fabian T. (2000), "The Evolution of the Berlin Urban Railway Network », *Japan Railway & Transport Review* 25, 18-24. Available at: http://www.ejrcf.or.jp/jrtr/jrtr25/pdf/f18_fab.pdf

Fleury A. (2009), « Espaces publics et environnement dans les politiques urbaines à Paris et à Berlin », *Annales de géographie*, n° 669, 522-542.

Halpern C., Häußermann, H. (2003), « Vers une sortie de la crise ? Les attermoiments de la métropole berlinoise au terme d'une décennie de querelles de clocher », *Revue française d'administration publique*, n°107, 333-344.

Häußermann, H., Kapphann, A., (2000), *Berlin : von der geteilten zur gespaltenen Stadt ? Sozialräumlicher Wandel seit 1990*, Opladen : Leske + Budrich.

IRS (2006), « Zehn Jahre Gemeinsame Landesplanung Berlin-Brandenburg – Leitbilder, Masterpläne und Visionen », *IRS Aktuell*, Institut für Regionalentwicklung und Strukturplanung, n° 51/52.

Kotowski, G. (n.d.). Die Geschichte Berlins seit dem Zweiten Weltkrieg. In G. Langguth (Ed.), *Berlin: Vom Brennpunkt der Teilung zur Brücke der Einheit* (Vol. 288, pp. 48–69). Köln.

Krätke S., Borst, R., (2001), *Berlin : Metropole zwischen Boom und Krise*, Opladen : Leske + Budrich.

Kuhlmann, S., Schwab C., Bouckaert G., (2016), *The Future of Local Government in Europe*. Berlin: Ed. Sigma.

Lascoumes, P., Le Galès, P. (2007), « Understanfin public policy through its instruments », *Governance*, 20(1), 1-21.

Mäding, M., (Hg.) (2002), *Verwaltungsreform und Verwaltungspolitik im Prozeß der deutschen Einigung*, Baden-Baden : Nomos Verlagsgesellschaft, 41-66.

Mayer M. (1997), « Les mouvements sociaux comme acteurs politiques dans les villes européennes : leur évolution entre les années soixante-dix et quatre-vingt-dix », in Bagnasco, Arnaldo, Le Galès, Patrick, (dir.), *Villes en Europe*, Paris : La Découverte, 174-200.

Novy, J., Colomb, C. (2013), "Struggling for the Right to the (Creative) City in Berlin and Hamburg: New Urban Social Movements, New 'Spaces of Hope'?" *International Journal of Urban and Regional Research*, 37, 1816–1838.

Quast, W., & Schröder, W. (1999). Regionalmetropole Berlin. In *Berlin, die Hauptstadt: Vergangenheit und Zukunft einer europäischen Metropole* (Vol. 362, pp. 435–452). Bonn: Schriftenreihe der Bundeszentrale für politische Bildung.

Rucht D., Rose, J. (2001), "The Transformation of Environmental Activism in Berlin", Paper prepared for presentation at the ECPR Joint Sessions, Grenoble, 6-11 April 2001, workshop on "Environmental politics at the local level". Available at: <https://ecpr.eu/Filestore/PaperProposal/05262578-28eb-46a6-9c93-8c4da44d2d98.pdf>

Rytlewski, R. (1999). Berliner Politik: Zwischen Kiez und Stadtstaat. In *Berlin, die Hauptstadt: Vergangenheit und Zukunft einer europäischen Metropole* (Vol. 362, pp. 295–329). Bonn: Schriftenreihe der Bundeszentrale für politische Bildung.

Strom, E., (2001), *Building the New Berlin. The Politics of urban development in Germany's Capital City*, Boston: Lexington Books.

Süss, W. (1999). Die Bundesrepublik und das Politikum der Hauptstadtfrage. Berlin - zwischen östlicher Lage und nationalem Symbol. In *Berlin, die Hauptstadt: Vergangenheit und Zukunft einer europäischen Metropole* (Vol. 362, pp. 194–234). Bonn: Schriftenreihe der Bundeszentrale für politische Bildung.

Tarrow S., Tilly, C. (2006), *Contentious politics*, Oxford, Oxford University Press.

Tsebelis, G. (2002), *Veto players: How political institutions work*, Princeton, NJ, Princeton University Press.

Wettig, G. (1999). Berlin vor den Herausforderungen des Kalten Krieges 1945-1989. In *Berlin, die Hauptstadt: Vergangenheit und Zukunft einer europäischen Metropole* (Vol. 362, pp. 157–168). Bonn: Schriftenreihe der Bundeszentrale für politische Bildung.

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Project acronym: **CREATE**

Project title: **Congestion Reduction in Europe - Advancing Transport Efficiency**

Project website **www.create-mobility.eu**

D4.2 - Technical report for Stage 3 city: London

Work Package 4 “Qualitative analysis of Transport policy
developments”

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1 The CREATE project

1.1 Brief reminder about the CREATE project

How to reduce road congestion in large cities in Europe and the Euro-Med? How to encourage a switch from cars to more sustainable transport modes? Historically, rapid urban growth has led to a growth in car ownership and use, and consequential increases in urban road traffic levels. These increases, in turn, are associated with a range of negative impacts, including traffic congestion, traffic collisions, social exclusion and dangerous levels of air and noise pollution.

Recently, some European cities (Berlin, Copenhagen, London, Paris, Vienna) appear to have been successful in decoupling economic growth from traffic growth – and in the process, have been able to offer urban living environments that are cleaner and less congested, while maintaining increases in living standards. Why have these cities been able to achieve this turnaround, and what lessons can be drawn for other parts of Europe and the Euro-Med?

To answer this fundamental question, the CREATE project (Congestion Reduction in Europe, Advancing Transport Efficiency) brings together a team of international analysts in order to explore historical patterns of urban road traffic and car use, to identify success factors in encouraging modal shift and lessons learnt in Western European capital cities, and to work with Eastern Europe and Euro-med city partners (Adana, Amman, Bucharest, Skopje and Tallinn) to assist them in developing sustainable strategies.

Further information available on the CREATE Website: <http://www.create-mobility.eu/>

1.2 About Work Package 4 in the CREATE Project

How to account for the shift away from car-oriented policies towards sustainable urban transport policies? As part of the CREATE project, the primary goal of Work Package 4 (WP4) is to analyse the historical 'Transport Policy Evolution Cycle' processes in Stage 3 cities, i.e. five Western European capitals (Berlin, Copenhagen, London, Paris and Vienna): Can we identify similar qualitative drivers of change across European cities? What are the main differences between cities and how to account for them? To what extent does the analysis of policy developments over time helps us make sense of recent policy choices and deadlocks? This is done by identifying the qualitative and contextual drivers that have enabled – or hindered – a shift from Stage 1 "urban congestion growth" to Stage 3 "encouraging sustainable mobility and liveable cities" policies. It also contributes to highlighting lessons to be learnt in order to speedup these processes in Stage 1 cities.

The work done as part of WP4 is coordinated by Dr. Charlotte Halpern, at Sciences Po, Centre d'études européennes et de politique comparée (CEE), CNRS, Paris.

This document, **D4.2 London**, is part of the second series of technical reports produced as part of WP4 during Task 3, "Qualitative analysis of transport policy development cycle processes in the five Stage 3 cities during the Shift from Stage 1 to Stage 3". It seeks to develop a comprehensive qualitative analysis of the historical development of policies relating to traffic congestion and car use over the past four decades. It investigates the ways in which transport policies are designed and implemented in the five Stage 3 cities, how they have evolved over time, which policy mix has been favoured at different times, their intended/unexpected effects, and how coordination has been ensured.

By highlighting discrepancies between policy choices and policy results, D4.2 reports contribute to understanding the shift away from car-oriented policies towards alternative transport policies in different city contexts.

This is done across the 5 cities as follows:

- Explore urban sustainable policy dynamics by looking at three policy dimensions:
 - policy objectives (i.e. Which are the main policy documents? How are power and resources distributed among different levels of government? Major policy reforms? Proposed, passed and failed measures?),
 - policy structures (i.e. what are the main resources: legal, financial, organisational? Evolution of budgets? Organisation charts? Creation of new agencies?)
 - policy instruments (i.e. regulatory/legislative, economic/fiscal, agreement-/incentive-based, informative/communication-based).

- Map out the evolution over time since the policy shift began by explaining the dynamics of issue salience, institutional and political changes, as well as changes in the governance of transport.
- Understand how controversies regarding urban sustainability policies were resolved by looking at policy results (failed/accepted measures).

The completion of Task 3 draws on the work done in Tasks 1 and 2, as introduced in the 1st WP4 Technical report. This introduced the common analytic framework, methodology and data collection strategy that is applied in WP4, provided a first assessment of the spatial and chronological perimeter it targets, and a brief mapping out of multi-level institutional and transport governance settings in the five Stage 3 cities, including a chronology of the shift from Stage 1 to Stage 3. Data sources include policy documents, proposed and passed measures, yearly budgets, and expert interviews with key policy actors.

The work achieved as part of WP4 is complementary to other work produced as part of the CREATE project. Particularly noteworthy is the work done as part of WP3 and D3.2 reports, which introduce transport supply data and policies influencing travel demand in each city. When relevant, specific sections from D3.2 reports are referred to. This will be done systematically during Task 4, and as part of WP5.

1.3 About this document, D4.2 London report.

The D4.2 London report develops a case study of this specific Stage 3 city. Similarly to other D4.2 reports, this report was written following the suggested outline developed by Sciences Po in December 2015. Some adjustments were made under the supervision of Dr. Charlotte Halpern (Sciences Po), in order to take into account each city's specificity (see disclaimer below).

More precisely, each D4.2. report includes the following information:

- A short summary
- Context: socio-demographic changes, major evolutions in urban development
- Institutional and political arrangements
- The governance of transport
- The organization of transport, including the transport offer
- Main policies, measures, or projects
- Brief conclusion about the 3 stages approach
- References, including grey literature and major policy reports, main publications about urban governance and transport.

This D4.2 London report provides a first analysis of transport policy developments in Greater London, and provides key data and high-level interpretations for London to feed into the wider cross-city analysis of transport policy evolutions being undertaken for Work Package 4 of the CREATE project. This D4.2 London report is not of itself a definitive synthesis of transport policy evolutions and their causes in London, but rather a compendium of resources, with some basic interpretation, to feed into this further analysis. It is complementary to the work produced by Transport for London (TfL), as part of WP3, which introduces transport supply data and policies influencing travel demand in the city.

Where opinions are expressed about the causes of change or the significance of specific aspects, these are with the sole intention of guiding further analysis under the CREATE programme and to act as a starting point for that further analysis.

1.4 Short summary of D4.2 London report

From the historical analysis undertaken, **London has followed the three 'stages of change' model, but it has not done so categorically.** There is an added level of complexity that has to do with legacy, geography and plurality. As with other older cities there was never a pure stage 1 type situation in London as there was an extensive public transport system in operation well before the mass advent of the motorcar. Furthermore, whilst Inner London has moved from stage 1 type thinking to stage 3, parts of outer London and London's peri-urban area still display aspects of car-based stage 1 type policy making. Even, if there is a general shift in thinking towards stage 3, there will be groups such as the freight industry that still champion stage 1 policies.

2 An analysis of transport policies in London.

2.1 Introduction

There are a number of issues that are of paramount importance regarding transport policies in London, many of these common worldwide to large metropolises faced with the need to enable the effective movement of people and goods for the smooth functioning of the city. One of these, that perennially preoccupies Londoners and their policy makers, is road traffic congestion. The famed urbanist Peter Hall writing in the 1960s stated “Londoners are fond of saying that London’s traffic is grinding to a halt: they have been saying it for at least a century, and probably since the Middle Ages” (Hall 1966). It is not surprising that it has been recently reported in the news that London is the “most congested city in Europe” based on an annual analysis of traffic congestion in the main European cities by INRIX¹.

Low traffic speeds have historically been given as the main reason and justification for all new road proposals in London and even for some public transport schemes - with the idea that they would alleviate traffic congestion by shifting some drivers onto public transport and thus freeing up space for motorists. Martin Mogridge who wrote in the 1990s, noted that traffic speeds in London have been largely stable since 1908 except for some short periods, such as those of the oil crises of the 1970s (Mogridge 1990), implying that new construction had little impact overall. The latest report on traffic speeds in Central London in 2015, reports them as being 8.1 mph on average (Transport for London 2015).

This analysis of transport policies in London is based on the historical evolution of policies and outcomes since the 1940s. It was in the 1940s that the first comprehensive city-wide transport plan was made for London and its surrounding region, in the Greater London Plan, written by Patrick Abercrombie (1946).

The analysis of transport policies in London is geared to exploring the drivers and tipping-points of policy change in London over the decades, largely based on the three ‘stages of change’ model (Jones 2013 & 2016), which are at the heart of the CREATE project. Transport policies are analysed and an interpretation is given as to how well they fit in within the three ‘stages of change’ narrative.

This report uses literature from a variety of sources. It does not aim to provide a comprehensive literature review of post-war transport policies for London, but uses sources that best exemplify the issues that are under analysis and sources are referenced. Emphasis is given to the writings of authors that have commented and analysed both the planning and policies of transport over an extensive period, such as Tony Travers, Michael Hebbert and Peter Hall. Furthermore, unlike many contemporary studies, and with this report being largely a historical analysis of transport policy, it is not confined to recent literature on the subject but also uses some historic literature that has been now mostly forgotten.

Despite London being a city with a developed public transport system, car oriented policies were prevalent for a number of decades from the 1940s onwards. What these policies achieved was to enable a lower density suburban growth, but at the cost of the removal of some of the city’s public transport infrastructure, such as the entire tram network.

The opposition to road-based policies came from the grassroots. It emerged in the 1970s as a popular movement against demolition of houses to make way for urban motorways. Although road based transport policies have largely been eclipsed in London itself they are still pursued in recognisable form in the rest of South East of England.

With the reintroduction of local democracy in London with the election of a Mayor in 2000, there came a remarkable change in the transport policy. The thinking regarding transport changed radically to reflect the concerns associated with stage 3 type preoccupations such as air quality and health. Yet if one were to walk around London one would not see a city geared to the needs of cyclists and pedestrians, but it is clear that transport policies and the public mood are moving increasingly in that direction.

¹ See INRIX London congestion trends report, May 2016: http://inrix.com/wp-content/uploads/2016/05/INRIX_London_Congestion_Infographic_May2016.pdf.

From the historical analysis undertaken, **it can be said that London has followed the three 'stages of change' model, but it has not done so categorically.** There is an added level of complexity that has to do with legacy, geography and plurality. As with other older cities there was never a 'pure' stage 1 type situation in London as there was an extensive public transport system in operation well before the mass advent of the motor car. Furthermore, whilst Inner London has moved from stage 1 type thinking to stage 3, parts of outer London and London's peri-urban area still display aspects of car-based stage 1 type policy making. Even, if there is a general shift in thinking towards stage 3, there will be groups such as the freight industry that still champion stage 1 policies.

2.2 Prioritising the motor vehicle

The type of thinking that planners and politicians typically adopt when facing for the first time the growth of car traffic is to build more roads. This type of thinking characterises the stage 1 of the three 'stages of change' theory. London proved no exception to this.

The use and ownership of the private motor car expanded rapidly before the Second World War. Whilst motoring was a luxury hobby in 1900 with only 8,000 cars registered in Britain, the number of cars on the roads began to rise during the 1920s as manufacturers started to make small, lightweight and cheaper vehicles for a wider market. Driving licences issued to London addresses rose from 100,000 in 1920 to 261,000 in 1930². This increase in car and other motor vehicle traffic led in the 1920s to the beginning of modern traffic management with the installation of Britain's first traffic lights in Piccadilly Circus.

From the turn of the century the government attempted to deal with the new car traffic issue at a citywide level. Up until the 1940s, a variety of road plans were produced most of which included some form of orbital roads around London.

Table 1. List of main plans, prior to 1943:

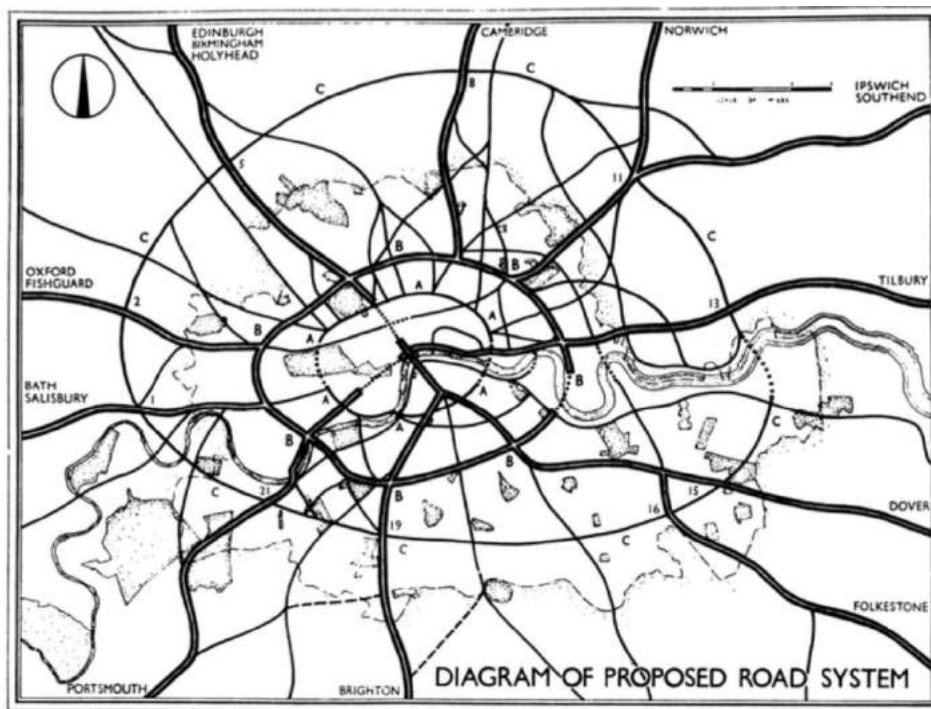
1905 - William Rees Jeffreys on behalf of the Road Improvement association and the Automobile Club to the Royal Commission on London Traffic which included "a boulevard around London".
1911 – London Traffic Branch within the Board of Trade produced the Great Road Plan consisting of over 120 miles of new roads.
1913 – The 1st Arterial Road Conference was held. Over 100 local authorities and other groups participated at the Conference.
1916 – The 2nd Arterial Road Conference was held and effectively approved the Board of Trade's 1911 plan.
1933 – The Greater London Regional Planning Committee proposed 71 new or improved road routes. It suggested that diagonal routes were best suited to London rather than "ring and circumferential roads".
1938 – The Highway Development Survey 1937 by Charles Bressey and Edwin Lutyens for the Minister of Transport was produced. This was comprehensive regional road plan including three orbitals.

2.2.1 Patrick Abercrombie's road plan

Following the end of the Second World War one action characterised London's development for many of the following decades: **it was the creation of a road plan that based on a number of radial roads emanating from the centre and a series of five orbital roads, prescribed in the Greater London Plan, written by Patrick Abercrombie (1946).** The thinking behind the plan was heavily influenced by the writings of the former Metropolitan Police Commissioner for Traffic Alker Trip who advocated traffic segregation in the interests of road safety (Hebbert 1998).

² Now there are over 2.5 million cars licensed in London (Transport for London: Roads Task Force 2013). As car ownership rose, so did traffic collisions. There were 4,886 fatalities in 1926 due to traffic accidents rising to a peak of about 8,000 in the mid 1960s. In 2014 there were only 127 fatalities in London as a result of a road traffic collisions (Transport for London: Surface Transport 2014).

Map 1. Patrick Abercrombie's Road Plan for London



Source: Forshaw and Abercrombie 1943.

The County of London Plan was based on the widespread belief that a modern city should cater for the motor car and was grounded in the idea that road traffic was like a hierarchical circulatory system. Longer distance traffic needed to be separated from ordinary street traffic by running on a segregated road network. At the highest level of the hierarchy would be the arterials, which would be a new kind of road, a grade separated, limited access multi-lane highway similar in form to the newly created Italian Autostrada or the German Autobahn (Hart 1976). Below were various levels of sub-arterials, down to local streets. The creation of the new arterials was seen as a way to remove car traffic from local and residential streets. It was seen as a method of “corrective surgery... that would necessitate the insertion of artificial channels, or canals, to drain away traffic from areas where it was both unnecessary and unwanted” (Hart 1976). The hierarchical road system was seen as natural as the body’s blood circulatory system, whose terms it adopted. Mixing uses for road space was to be avoided. Forshaw and Abercrombie (1943) in *The County of London Plan*, give the example of Oxford Street that is neither a through street nor a local one. They state, “Oxford Street is perhaps the clearest example of the mix-up of through, stopping and pedestrian traffic”.

The legacy of Patrick Abercrombie’s Greater London Plan remained a key reference point for London’s urban development for decades. There had been extensive destruction of property during the bombing of London during the Second World War, which allowed the rebuilding of entire areas of London and the possible construction of new roads.

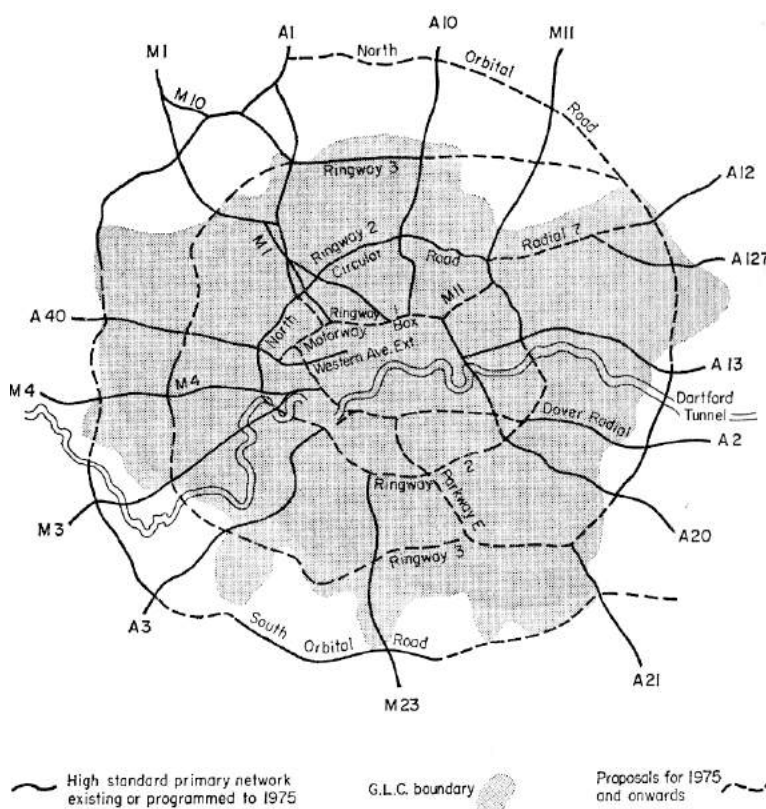
Of the original five orbital roads proposed, only the M25 and the North and South circular roads are recognisable in this form today³. Of these only the 188 km M25 is of motorway standard. It was started in 1973 and completed in 1986. Although the Greater London Council still pursued the motorway plans for London well into the late 1960s (they became known as the ‘Ringways’ and the most inner ring, the ‘Motorway Box’), most were eventually abandoned due to cost and a public mood less inclined to accept urban motorways.

³ These two orbital roads have developed to fulfil the role originally envisaged.

By the 1950s **the issue of increasing traffic congestion was again becoming a common preoccupation in London**. Increasing car ownership was leading to increasing car use partly encouraged by the derationing of petrol, following recovery from the Second World War in 1950. The London County Development Plan of 1951 stated that increased traffic congestion was largely due to a saturation level having been reached at important intersections (London County Council 1951). The road network was seen as unable to cope with ever increasing traffic, leading to ever-declining traffic speeds. According to the government's Road Research Laboratory, during peak times the average speed in Central London was about 11 miles per hour in 1953. Edward Carter (1962) claimed that between 1909 and 1958 vehicle journey speed in central London decreased from 11.4 miles per hour to 10.3 miles per hour. According to John Hart (1979) by 1959 the traffic speed had fallen to almost 8 miles per hour (Hart 1976). In 1956 London's main newspaper the Evening Standard reported how the London and Home Counties Traffic Advisory Committee was forewarning that "unless radical action is taken traffic will come to a standstill" in Central London "within five years" (Hart 1976).

The London County Development Plan of 1951 also bemoans a lack of adequate parking provision. Indeed parking was a main issue for the Ministry of Transport that set up a committee, the London and Home Counties Traffic Advisory Committee, to look at the future of car transport in London. It proposed underground car parks in central squares and they were to have a nominal charge to encourage drivers to use them (Plowden 1971).

Map 2. The Road Plans for London in 1969



Source: Thomson, J. et al. 1969.

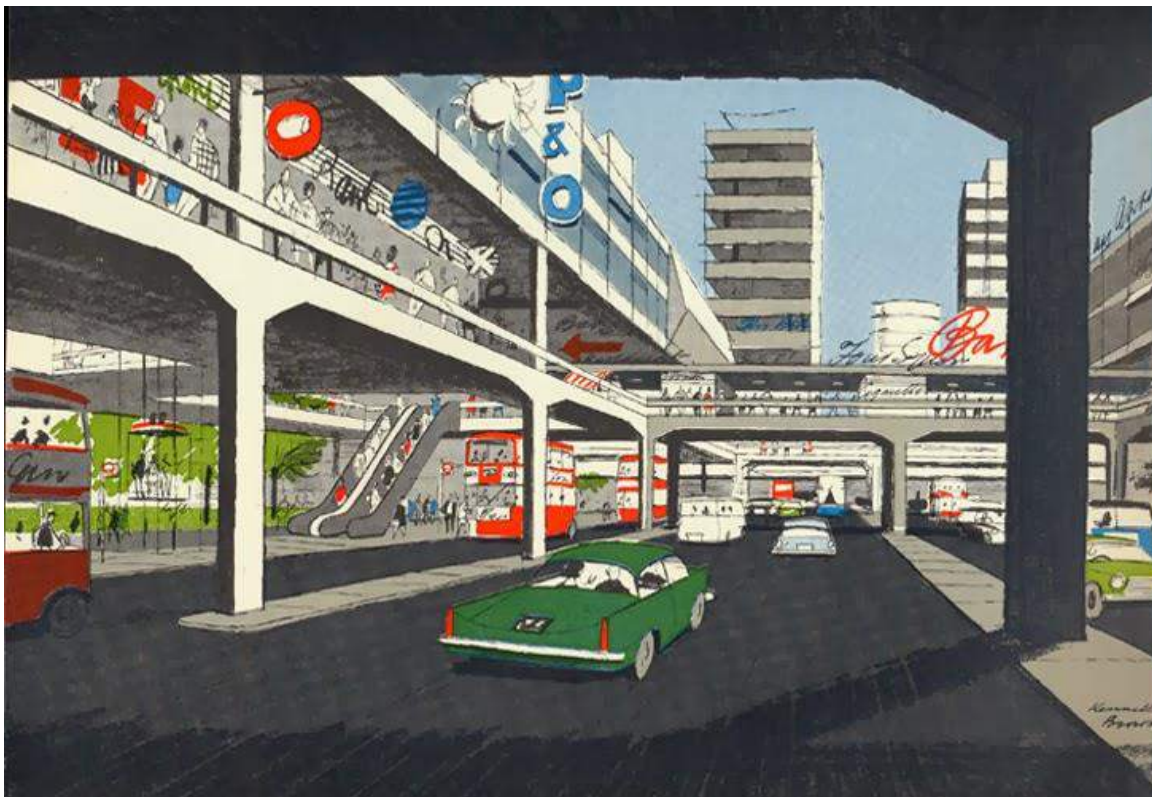
Increasing road capacity to meet the demand of rising traffic was an accepted and largely undisputed orthodoxy with transport professionals, at that time nearly exclusively engineers, the public and politicians. The problem of creating roads for cars in London was not that of opposition but rather that of cost and difficulty of implementing the proposed high volume radials and orbitals in a dense urban environment.

The building of roads had widespread support in the 1950s and 1960s. In 1955 the Roads Campaign Council was formed representing road users' groups and launched its "Roads Crusade". Both the Trades Union Congress and the Employers' Federation pushed throughout the decade for extra road building.

2.2.2 Making the car-oriented city material: the Buchanan report.

It was Patrick Abercrombie who presented the framework for road building in the 1940s **but it was Colin Buchanan who presented the tools for analysis and evaluation in the 1960s**. The 1960s were characterised in terms of transport policy by a report commissioned by the Ministry of Transport and published in 1963, *Traffic in Towns*, also known as the *Buchanan Report* (Buchanan 1963). The report became influential in town and transport planning in Britain. It became so popular that it was published even as a paperback. The report headed by Colin Buchanan had as its primary objective the environmental consequences of increasing car use. It proposed ways to accommodate the car in cities through the creation of appropriate roads, residential areas, enhanced car parking and segregating pedestrians from cars. Although concerned with the impact of the car on cities, *Traffic in Towns* ultimately attempted to accommodate the car through measures such as changing the frontage of shops, from facing the road to look back at more pedestrian friendly squares with multi-story car parks. The report used the area north of Oxford Street in London as an example of how to segregate vehicular traffic from pedestrians if cars and pedestrians were to inhabit the same space.

Figure 1. Buchanan's view of Oxford Street



Source: Buchanan report, 1963

Possibly, after Abercrombie, the *Buchanan Report* was the most influential document regarding transport planning in London and Britain as a whole. Its influence remained undiminished until the end of the century. Indicative of this is that the *Roads and Traffic in Urban Areas*, an authoritative manual of transport planning issued by the Institution of Highways and Transportation and the Department of Transport in the late 1980s commenced by stating: "the '*Buchanan Report*' achieved wide acceptance and continues to provide the basis for many traffic management policies in use in the 1980s. The report demonstrated that whilst there are absolute limits to the amount of traffic that can be accepted in towns, if urban areas are to function efficiently, then land use, transport, highway and traffic developments have to be planned and managed together as part of the same process. This philosophy is true today as it was then, especially as car ownership continues to rise. (Institution of Highways and Transportation and Department of Transport 1987)".

We thus see that in post-war London, the prevailing policies were those of enabling the use of the car, channelling it in 'appropriate' roads, which, for main arteries, meant urban motorways. The Buchanan report managed to bring together those concerned about the need to build roads to cater for increasing motorisation as

well those concerned about the environmental impact new roads would have on the city and especially residential neighbourhoods.

Throughout the 1960s, car ownership and car use continued to rise in London. Some 7.4 million journeys were undertaken by car in London in 1971 compared to 5.4 million journeys undertaken in 1962 (Greater London Council 1985b). In the same period public transport journeys fell, from 5.8 million to 5.0 million (Greater London Council 1985b). Bus fares continued to be higher than car running costs, including parking, for private vehicles (Greater London Council 1968).

In the 1960s much attention was given to roads and the increasing car traffic whilst public transport was viewed as increasingly uneconomic and in need of rationalisation. London's trams and trolleybuses were seen to be uneconomic and were viewed as a barrier to car traffic. By 1952 all of London's trams had been closed down and by 1962 so were all of London's trolleybuses.

Transport planning became an increasingly technical activity to be carried out by highway engineers. This technicalisation was mirrored in the administrative structures of local government with the Greater London Council setting up the Department of Highways and Transportation to perform a particular task: to plan and provide a large increase in highway capacity (Hall 1982). Even when it was later merged with the Planning Department, it was seen as a takeover by the Highways Department and planning became, not a holistic approach to the shaping of the urban sphere but a problem solving one, where traffic was the most important one to be solved. The philosophy of accommodating traffic in the metropolis was prevalent amongst transport and planning professionals well up until the 1990s.

2.2.3 The limits to Stage 1 thinking.

It is argued that stage 1 of the three 'stages of change' theory is characterised by rapid urban economic growth, leading to a fast growth in car ownership and use, and general support for policies to build new roads. The Abercrombie plans, the London Ringways and the Traffic in Towns report fit in very well within this stage. However, London had a developed public transport network well before the growth of car ownership and use. Some public transport was indeed ripped up, such as the tramlines to make way for the car, but to a large extent, public transport was very significant throughout the post-war years, commanding about half of all motorised travel. Some zoning policies and street designs discouraging walking and cycling were adopted in implementing the road hierarchy, segregating the car from pedestrians on top level roads through walkways, as advocated in the Buchanan report, but this redesign and reconstruction of London was not widespread.

London, being an old city, faced traffic congestion, as mentioned by Peter Hall, by people and animals as early as medieval times. The centre of London can be seen as having always been congested. Commuting from the suburbs was occurring in Victorian England well before the car appeared. In London, the roadway plans were to be superimposed on what now are termed "transit oriented developments" of pre-automobile times.⁴ The destruction of parts of London in the bombing of the Second World War would have provided an opportunity for some of the urban motorway proposals to be taken forward. However, in London, only very few of the road proposals of the 1940s were actually implemented, even though they commanded widespread political support, and were championed by the transport planning professionals for a long period of time.

Stage 1 type city structures developed more clearly in the new suburbs that emerged from the 1930s onwards: suburban detached housing with cul-de-sacs, collector and distributor roads. Most of that type of development took place outside Greater London in new towns and developments. Many of these types of car-based developments are still being built in the South East of England outside Greater London, where low density housing prevails.

Thus, while stage 1 type thinking can be seen to have taken hold amongst the transport professionals in London, **the three 'stages of change' does not ideally describe London.** The urban form was already well developed before the advent of the car. So, what can be said about London up until the 1970s and the 'three stages of change' theory, is that although politically it was a stage 1 city, the stage 1 policies were not well implemented because it was an already well functioning metropolis with an established public transport system

⁴ Transit-oriented development or TOD is a form of urban development developed by Peter Calthorpe in 1993 in the United States. It seeks to create "compact, walkable, pedestrian-oriented, mixed-use communities centered around high quality train systems" (Cervero 1998).

based on radial commuter railways and an urban largely underground metro. Thus, the accommodation of the car in the 1950s and 60s did not wholly take place, and certainly not with major urban road construction. Furthermore, from the 1970s these road-based policies faced an intense grassroots rebellion.

2.3 Against motorways

Up until the 1970s there were very few voices that questioned the axiom that building roads was necessary to cater for the inevitable growth of car ownership. The Greater London Council's 1968 Greater London Development Plan advocated an increase in capacity of the primary route network by simply upgrading most of Abercrombie's sub-arterials to arterials which, in the 1960s Greater London Development Plans, meant motorways (Hall 1989).

Yet, by the 1970s the public and the political climate was turning against the urban road solutions. A report commissioned by the London Amenity and Transport Association, *Motorways in London* (Thomson et al. 1969) published in 1969 was a first attempt to suggest that a different transport strategy was required to solve London's transport problems and it did not involve urban motorway construction. By the mid 1970s more voices were being heard opposing new road construction.

2.3.1 Local grassroots anti-roads campaigns.

The changing views on urban road construction were especially vociferous at the local level. The 1970s saw a grassroots anti-roads campaign taking shape in London and coalescing in the 'Homes Before Roads' group. It was a group that married political ecology, environmentalism and a 'not in my back yard' type of reaction. The group opposed the road-building programme of the Greater London Development Plan. It fought it at public inquiries and put up 80 candidates in the 1970 Greater London Council elections. They did not win any seats but it changed the political atmosphere so that the London Labour party started too to oppose the road plans. In the 1973 Greater London Council elections the London Labour Party, which was originally responsible for the motorway proposals (Thomson 1977), fought and won on a political platform that included the abandonment of all urban motorway construction.

Figure 2. Front page of The Guardian in 1995 featuring the Barrier Block

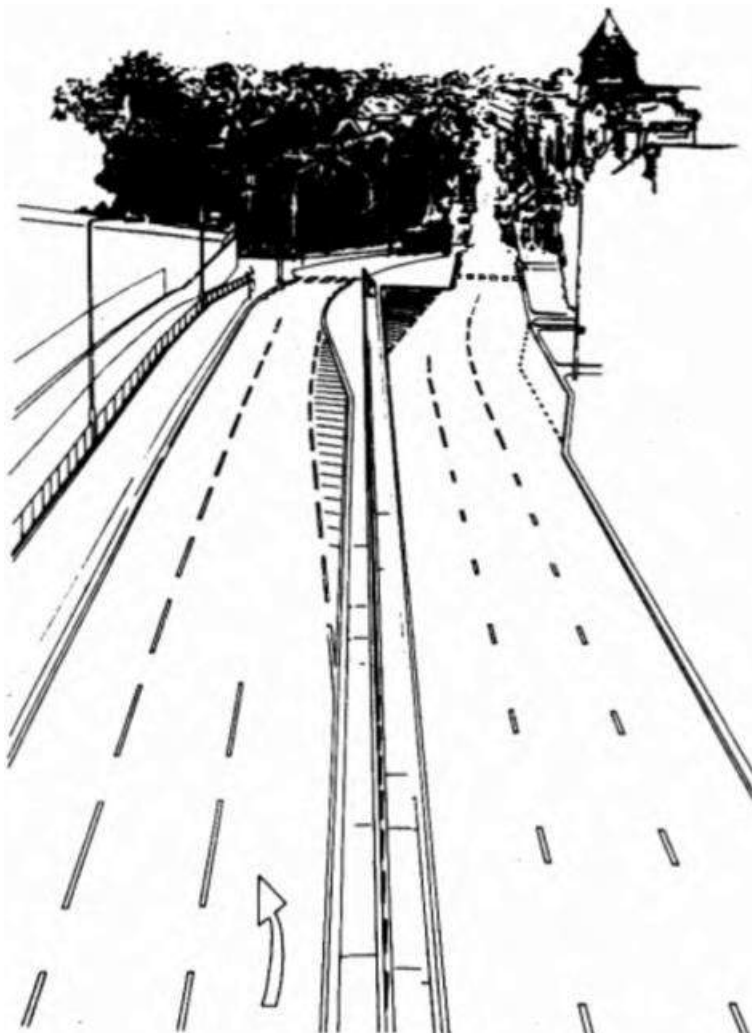


Source: The Guardian, April 27, 1995

Most of the Ringways and Motorway Box plans were never actually realised in Greater London. The only main urban motorway that was completed was the Westway, much of it elevated above ground. However, the negative effects of the plans left scars in the city in other ways. An example of one such destructive element was the 'Barrier Block' (officially named Southwyck House) in Brixton, South London. This was a series of three large multi-storey apartment blocks, commissioned by Lambeth Council in 1970 and completed in 1983, which were characterised by a façade of a long wall with tiny windows, to deflect the noise and pollution of the southern route of the Motorway Box, that they were planned to abut. The motorway was never built but these blocks remained and became one of London's infamous, crime ridden, run down, inner city council estates.

The new philosophy that started to emerge in London in opposition to Buchanan's one of accommodating traffic, even if segregated from residential areas, was that any extra traffic would inevitably create an overspill and thus residential areas would be burdened with ever increasing traffic. This philosophy was embraced by those most affected by the urban road proposals. The main proponents argued that land use planning should seek to provide a maximum range of facilities within easy walking distance without the need for car travel (Hall 1982).

Figure 3. Northward view from the A1 Archway Road



Source: Adams 1981

Throughout the 1970s there was an emerging significant grassroots activism against the road-building programme. Enid Wistrich (1983) notes how remarkable it was that these new activists, residents and public transport users' groups joined forces with existing environmental and civic societies, such as Friends of the Earth and the Civic Trust to campaign together on transport matters.

Indicative of this new grassroots activism were the “infamous” Archway inquiries into the widening of a stretch of the A1 trunk road in north London. Four public inquiries⁵ were held between 1973 and 1984 to create a stretch of urban motorway on the road leading from the north of England to the London docks. The first inquiry started in 1975 and was concluded two years later. The second inquiry, in 1976 was abandoned because of the inspector's ill health and an organised campaign of disruption. In 1977, the third inquiry was adjourned after six months of almost continual disruption and harassment of the inspector⁶. The fourth inquiry in 1984 was also abandoned after the inspector resigned due to severe harassment. Local politicians Ken Livingston and Jeremy Corbyn campaigned by “fighting tooth and nail” against the plans⁷. Most of what was originally proposed was eventually abandoned and now, as can be seen in figure 3, a short six-lane grade-separated highway turns abruptly into the very urban ordinary Holloway Road on one end and the narrow Archway Road in Highgate at the other end.

2.3.2 Managing road capacity as opposed to the car-oriented city.

By 1976, a new approach was being taken by the Greater London Council and became adopted in the updated Greater London Development Plan. The new Plan moved away from the roads solution to London's transport problems. The Greater London Council now adopted a policy to manage road capacity in such a way as to restrain what was considered ‘inessential’ traffic, and to make the best use of the existing system so as to assist public transport and protect the environment and the safety of both drivers and pedestrians (Wistrich 1978). In its transport policy programme of 1977, the Greater London Council declared its intention to reduce peak hour traffic levels in central London by a third (Adams 1981).

The Inner London Parking Area⁸ was extended, meter charges were raised and a number of public car parks were closed. The biggest problem, however, was the number of private car parks in office and shopping centres. Here the Greater London Council was faced with the consequences of its own earlier policies, for in the 1950s and 1960s planning permission for new developments had always required ample provision for off-street car parking. Furthermore, there was the issue of enforcement. According to Peter Hall (1982) fines failed to keep with inflation and this “led to violations of parking and loading regulations on an epic scale”. And by the early 1980s all that had been gained before from traffic management was wiped out (Hall 1982).

The preoccupation of accommodating extra road traffic due to an expanding section of the population that owned a car however still remained orthodoxy in the transport planning profession. The difficulty of achieving that, especially in a large urban area such as London, was the challenge. Traffic restraint, although somewhat necessary, was seen by some as a threat to economic efficiency. In the *Roads and Traffic in Urban Areas* manual, it is stated that some “Scandinavian cities have restrained traffic to minimise the impact of private cars. This type of policy brings with it its own risks such as a threat to the economic prosperity of the area because both car users and businesses may transfer to alternative areas (Institution of Highways and Transportation and Department of Transport 1987)”.

Although there had been quite clear opposition to new roads in London in the 1970s and many schemes were shelved or abandoned, in 1984 the UK Government produced further proposals for major road improvements, the London Road Assessment Studies⁹. The first reports of the Assessment Studies emerged in 1988 and 1989 and, although having the support of some of the outer London boroughs, led to such a high level of public opposition that the schemes were scrapped by 1990. Transport 2000, the national environmental transport campaign, brought together more than 150 action and environmental groups from around London and

⁵ The procedure of the public inquiry was chosen by then secretaries of state for transport, as this was a controversial planning decision and could be better carried politically with an inspector's recommendation. However, it was also politically hazardous as it gave a very public voice to protestors.

⁶ See: Hansard, House of Commons Debate 28 April 1978 vol. 948 cc1934-46 and House of Commons Debate 11 May 1984 vol. 59 cc1268-76

⁷ Source: <http://jeremycorbyn.org.uk/>

⁸ The Inner London Parking Area was created by the Greater London Council in 1969 to restrict parking on main thoroughfares with the aim of both smoothing traffic flow and discouraging parking in high demand areas. This later became a policy to discourage car commuting and speeding up bus traffic in the capital.

⁹ This initiative should not only be seen in a context of changing central-local relations, as some groups and boroughs, mostly outer London ones, supported the Assessment Studies.

the result was the formation of an effective umbrella co-ordinating and facilitating body, known as All London Against the Roads Menace - ALARM¹⁰. By the 1980s, citizens' organisations' ability to fight schemes with over a decade of experience was growing and becoming very effectual (Wood and Blancher 1999).

Figure 4. Activists' poster against the extension of the M11 motorway in the East End of London



Despite the reversals all major road proposals were receiving, in London the transport planning profession was wedded to a system of planning based on the forecasting and modelling of traffic: the so-called 'predict and provide' approach. In London, it gained its prominence from the 1970s to the 1990s through the huge and overarching London Transportation Studies (LTS) model¹¹. This was a traditional type of transport model

¹⁰ ALARM became a national body after 1989 as a response to the Government's White Paper, Roads for Prosperity, detailing a massive road-building programme across the United Kingdom, which according to ministers was the 'largest road building programme since the Romans' (Goodwin 2003). The widespread road protests organised by ALARM and other grassroots bodies led to many of the schemes contained within it to be abandoned in 1996 (and the consequent disbanding of ALARM, which had now achieved its purpose).

¹¹ The LTS was a traditional four stage transport model whose data came from the 1971 London Travel Survey and later the 1981 survey. It was based on a large household survey and a series of roadside cordon surveys, plus some public transport surveys. The model divided London into about a thousand zones. The LTS model was developed at the Greater London Council but from 1986 onwards it was taken over by the Department of Transport and run by private consultants. As with other such type of models, the traffic forecasts come as a 'given', based on population and gross domestic product forecasts. The extra

based on household and roadside data. Traffic forecasts were linked to predicted increases in population and the Gross Domestic Product.

The lack of building new roads did not mean that London turned to investing in the public transport system. Pulcher and Lefèvre (1996) note that in 1975 the Underground amounted to 381 kms of lines and by 1993 it had grown to only 394 kms. Not only was there a dearth of new infrastructure but maintenance was also being neglected, to the point that, as ridership started to pick up by the early 1990s on the suburban railways and the Underground, overcrowding, deterioration of quality and increasing unreliability of service resulted (Bayliss 1991).

2.3.3 Transport infrastructure crisis in Greater London? Characterising Stage 2.

The lack of any type of investment in the capital's transport system was seen as a major liability in an increasingly competitive environment for attracting inward investment as a 'world city'. Peter Hall (1989) summed up what was becoming a common view - he saw the relationship between the development of the city and its transport system was becoming out of synchronisation. He stated, "if we continue thus to fail, the penalty may be severe: London may increasingly lose out to its non-muddled, highly rational neighbours, who are doing the things we should have done and are doing them rather well (Hall 1989).

Throughout the 1980s and 1990s public discontent grew as the Underground and suburban rail were becoming increasingly unreliable due to a prolonged lack of investment in maintenance. For instance, the Northern Line became known in the press and media as the "Misery Line"¹². In popular culture London was becoming the car-choked city whose public transport system was left to rot. Typical of this was a comedy best selling novel, *Gridlock* by Ben Elton (1991). The novel depicts a near-future London in which traffic congestion has reached almost critical levels, such that accidents in a few key places could bring the entire city's traffic network to a halt¹³. Indeed, the idea of potential gridlock became a talking point in the local media in the 1990s¹⁴. Peter Hall (1989) describes a real life incident in December 1987 where a vehicle collision in Blackfriars, a burst water main in Hampstead and a gas leak on the Finchley Road "caused traffic progressively to lock in increasing circles. By about 7 in the evening, an estimated 50,000 cars were stuck in a motionless jam that stretched from Hendon in the north to New Malden in the south".

Stage 2 of the three 'stages of change' theory is characterised by a realisation that road building cannot solve an area's need for mobility. There is no longer a general support for policies to build new roads and there is a shift in thinking from the road vehicle to person based mobility that is better served by public transport, especially rail-based public transport. In London the abandonment of the Abercrombie plans for the London Ringways are very much a part of the thinking and outcomes that characterise this stage. However, although London abandoned new road building as a viable option by the 1970s, in the three decades that followed there was not a concomitant investment into new public transport infrastructure, as the stage 2 model of the three 'stages of change' theory suggests. Instead London from the 1970s right up to the turn of the century saw little investment in any form of transport.

The lack of investment can be partly attributed to a variety of factors; these range from:

traffic had to be accommodated by the local area. The LTS model was extensively employed to validate the London Road Assessment Studies.

¹² The term "misery line" started being used in the 1980s, became common in the 1990s and continued whenever problems reappeared on the line. Example of press, internet, radio and television coverage: BBC News Channel (2005), LBC/IRN (1994), Mail Online (2016) and Thames News (1988).

¹³ In the novel (Elton 1991), the government is aware of the problem and plans a major new road-building program to relieve the pressure. The alternative, heavy investment in public transport, is ignored because it clashes with the government's ideology. The climax of the book sees shadowy forces deliberately instigate the necessary simultaneous accidents that do indeed bring the whole of London to a standstill for several days. The resulting chaos is used as an excuse to press ahead with the road-building scheme.

¹⁴ In the 1990s a number of bomb attacks by the Irish Republican Army and hoax calls caused numerous closures of main roads and evacuation of busy railway stations, causing road traffic to get blocked, often for hours.

- a declining population up until the mid-1980s¹⁵,
- lack of city government between 1986 and 2000 with the abolition of the Greater London Council,
- Financial stringency and new neo-liberal thinking that it is 'up to the private sector to build and operate transport systems'

Thus London can be seen as having entered a stage 2 phase from the 1970s, although it was a particular form of stage 2. It was a phase where the paradigm of the 'predict and provide' approach to road building was effectively abandoned, but where a new mobility paradigm did not take its place. Perhaps because of the pre-car existing extensive public transport network that has been mentioned as an anomaly in the analysis of London's stage 1, there was perceived to be no immediate need to undertake any extensive new public transport infrastructure investment. However, the lack of new investment and the lack of investment in the maintenance of the existing public transport infrastructure, led to a period of widespread discontent with both road traffic and the service offered on London public transport network.

2.4 New thinking for a democratic and liveable city

The 1980s and 1990s can be seen in London as a period of neglect and stagnation. The Greater London Council, which acted as a pole of opposition to Margaret Thatcher's neo-liberal conservative policies, was abolished by parliament in 1986, which left London as the only large metropolis in the world without a central administration¹⁶. Its abolition led to a policy vacuum and an incredible fragmentation of the metropolis' functions.

The transport functions of the capital were transferred to central government. Cutting public expenditure was the key ideology permeating that decade and saw no new transport infrastructure in London, with the exception of a few schemes in the redeveloping Docklands, and a corresponding underinvestment in public transport.

Nothing much changed in the operation of London's transport. The public transport system faced neglect but no new significant road building was undertaken instead. Traffic restraint, although somewhat necessary, was seen by some as a threat to what became termed by politicians as the "car owning democracy"¹⁷.

By the time Tony Blair became prime minister in 1999, both the political and the intellectual climate was changing. The demand for a democratically elected government for London led to the creation of the post of Mayor to be elected through universal suffrage.

The Mayor and the Greater London Authority administer and direct Transport for London, the Metropolitan Police and the London Fire and Emergency Planning Authority. 63 per cent of the Mayor's budget goes to transport (Mayor of London 2016) and hence much of the Mayor's attention and policy is directed to London's transport.

In 2000 Ken Livingstone was the first elected Mayor for London, running on a left-wing platform against both the Conservatives and Labour¹⁸.

¹⁵ See Figure about basic population trend for Greater London, showing relationship to indicators of total travel demand, in D3.2 London report, p.17 (extracted and added in the annex section).

¹⁶ Although the creation of the Greater London Council took three years of deliberations and careful planning, its abolition appeared in the 1983 Conservative Party manifesto "out of the blue" (Hebbert 1998) and was very much a personal decision of the prime minister, Margaret Thatcher (Travers 2004).

¹⁷ The term "car owning democracy" was first used by the Steering Group on the Study of the Long Term Problems in Traffic in Towns in their comments on the *Buchanan Report* (Buchanan 1963). It was also used much later by Prime Minister Margaret Thatcher, who referred specifically to the "great car owning democracy" in defining the neo-liberal philosophy for Britain, similar to the phrase, the "great property owning democracy" that she used.

¹⁸ Ken Livingstone was considered to be too left wing for the Labour party which had shifted to the right under the leadership of Tony Blair. He failed to be selected as the Labour Party candidate for Mayor and stood as an independent. In the first Mayoral elections he beat all other candidates, including the Labour Party's, to become the first Mayor of London. He was expelled from the Labour Party but readmitted few years later to run for the next election for Mayor of London in 2004, which he also won.

2.4.1 Reforming transport governance.

Investment in public transport infrastructure that was sorely required from the 1970s finally came thirty years later. By the late 1990s there was general agreement that it should be a priority to secure investment in London Underground in order to improve services and bring the network up to modern standards after a long period of underinvestment that created a big backlog of maintenance. This could only be achieved with a stable funding regime to allow investment to be planned ahead. While the previous Conservative Government announced its intention to privatise the Underground, the Labour Government that took office in 1997 opted instead for a Private-Public Partnership. Private infrastructure companies were to upgrade and maintain the railway system for a number of years and then hand it back to the Greater London Authority. In taking this decision it faced opposition from a number of quarters, including unions and safety campaigners and the first Mayor of London, Ken Livingstone. Ken Livingstone and his Transport Commissioner, Bob Kiley, took the government to court over the decision and championed an alternative method of raising money, via the issue of bonds secured against future fare revenues from London. The bonds proposal was rejected by the Treasury. Ken Livingstone was ultimately unsuccessful in his judicial challenge and the Public-Private Partnership went ahead in 2003.

Unlike the Bus network, private infrastructure companies were to upgrade and maintain the Underground railway system for a number of years and then hand it back to the Greater London Authority. However, the Public-Private Partnership was plagued by problems. In 2007 one of the private companies went into receivership and Transport for London, the new body set up to run all of London's transport, including roads, took it over. By 2010 the whole Public-Private Partnership scheme had collapsed and it was all taken over by Transport for London. The collapse of the Public-Private Partnership vindicated Ken Livingstone's position and made a severe dent in the proposition that risk could be transferred to the private sector in government sponsored transport infrastructure projects.

With the new millennium London started to see significant investment also being made in other parts of the public transport system. These included:

- Crossrail, a new East-West rail line running underground through central London - building work commenced in 2009;
- The Channel Tunnel Rail Link and the re-building of St. Pancras station;
- On-going improvements on Thameslink - the cross-London rail line linking north and south suburban rail lines through a short underground rail stretch near St. Paul's cathedral;
- London Overground: improved suburban rail lines taken over by Transport for London and rebranded;
- Docklands Light Railway – Eastern extension and river crossing to Woolwich;
- Tramlink – A new tramline opened in 2000 operating in the Croydon area of South London.
- New buses, including the introduction of the articulated 'bendibus' followed by a redesigned rear open platform Routemaster¹⁹;

Most of the finance for these projects has come from central government. In London the biggest single infrastructure project was the new east-west cross-London rail line, Crossrail²⁰, which is still currently being built.

2.4.2 A new generation of transport policy measures and tools.

London's new thinking on transport led to one of the most radical policies ever undertaken in a large metropolis, the introduction in 2003 of the road area-charging scheme known as the Central London Congestion Charge. The new policy involved the introduction of a £5.00 entry fee for vehicles to enter Central London. The scheme is managed by Transport for London and its proceeds, minus administration expenses, are ploughed back into supporting public transport operations. The charge has now risen to £11.50 with a penalty of between

¹⁹ The operation of the bendibus was deemed to be dangerous for pedestrians and cyclists. In a period when articulated buses made up approximately 5 per cent of the London bus fleet, they were involved in 20 per cent of all bus-related deaths. These statistics eventually led to their replacement.

Boris Johnson introduced a new bus designed specifically for London, the New Routemaster. The original Routemaster was a famed standard London bus type, with a rear open platform allowing for quick boarding and alighting, crewed by both a driver and conductor. The last Routemaster was produced in 1968. By 2005 all Routemasters, except two heritage lines, had been withdrawn. It is expected that one thousand New Routemasters, that also have a rear open platform, will enter passenger service by summer 2017 (<https://tfl.gov.uk/modes/buses/new-routemaster>).

²⁰ The Elizabeth line as it will be known when completed and in operation

£65 and £195 levied for non-payment. The scheme initially recorded a 30 per cent cut in traffic congestion in its area. This has progressively been eroded as measures such as the introduction of cycle and bus lanes have reallocated road space away from cars. Now congestion is at a level close to what it was before the introduction of the Congestion Charge, albeit at significantly reduced traffic volumes, but, according to Transport for London, without the Congestion Charging scheme, traffic congestion would now be greater (Transport for London 2014b).

From the turn of the millennium, air quality, vehicle and greenhouse gas emissions have also formed an important determinant of London's transport policies. In 2003 Ken Livingstone first published *The Mayor's Air Quality Strategy*, putting forward a range of policies and proposals designed to move London toward the point where air pollution no longer posed a significant risk to human health (Mayor of London 2001 and Mayor of London 2002). Ken Livingstone also started to make plans to adapt the central London Congestion Charging scheme to be based on the CO₂ emissions of vehicles. This would have created a maximum charge of £25 and zero charge for the least polluting vehicles. The proposal was opposed by many car manufacturers. Volkswagen subsidiary, Porsche, demanded a judicial review. When Boris Johnson, Ken Livingstone's Conservative successor, got elected in 2008 he abolished plans for converting the Congestion Charge to be based on CO₂ emissions as well as removing western extension of the Congestion Charging area instituted by his predecessor.

However, by 2011, the new Mayor had produced strict targets for reductions in CO₂ emissions through the *Mayor's Climate Change Mitigation and Energy Strategy* (Mayor of London 2011). The new strategy document set an overall target to reduce CO₂ emissions in London by 60 per cent, against 1990 levels, by 2025. Transport would be expected to play its part in achieving this overall reduction. According to the *Mayor's Climate Change Mitigation and Energy Strategy*, for the overall 60 per cent reduction target to be met, CO₂ emissions from transport would have to be reduced by 48 per cent. By 2008 London had adopted the London Low Emission Zone (broadly the same as the Greater London area), which is a traffic pollution regulation scheme with the aim of reducing noxious emissions of diesel-powered commercial vehicles in London. Vehicles that do not conform to higher emission standards are charged whilst other, cleaner vehicles, may enter the controlled zone free of charge. In 2015 the Mayor of London announced the introduction in the Congestion Charging area in central London of an even stricter Ultra Low Emission Zone by 2020²¹.

Since the turn of the century there has been a substantial shift in mode share for Londoners. There has been over a ten percentage point shift away from car use towards public transport walking and cycling between 2000 and 2013. Now public transport trips exceed those for private transport in London for the first time. According to Transport for London, "this is a feat unprecedented in any other world city, and means that there are today almost two million fewer daily car journeys than there would have been. This reflects the priorities of successive Mayors to invest in public transport, as well as increasing constraints – both historic and contemporary – on the ability of the road network to accommodate traffic demand" (Transport for London 2014c). London is at the forefront of the so-called 'peak car' effect that has been prevalent in most economically developed nations for over a decade (Focas and Christidis, 2016).

2.4.3 Redefining the role of roads as a means towards the liveable city.

Apart from rediscovering public transport, a radical shift in transport thinking more broadly had also started to take place in London. Although towards the end of the millennium it had become increasingly accepted that "it is shared wisdom that new roads, in any event, appear to achieve only temporary relief from congestion - relief soon swamped by existing or potential suppressed demand" (Focas 1998) and car based solutions to London's transport problems were no longer envisaged, transport thinking started to favour non-motorised solutions which were seen to be more environmentally friendly and made a direct contribution to the health of Londoners.

The thinking that now prevails in Transport for London (the transport body that succeeded London Transport and has taken responsibility for all modes of transport in the capital, including roads and road traffic), is

²¹ The Ultra Low Emission Zone will require cars to meet Euro 6 standard for diesel engines and Euro 4 standard for petrol engines. Non-compliant vehicles will still be able to enter the zone but will be required to pay a daily charge of £12.50 on top of the Congestion Charge. Motorcycles and commercial vehicles will also fall under the scheme.

that what is paramount, other than providing for the necessary transport of residents, commuters and visitors, is improving the quality of life in the capital. This thinking draws on projected population and travel demand growth to 2031²². Cyclists and pedestrians have been given more prominence than ever before in the planning of the city's urban environment. Thus rather than transport being seen as a 'derived demand' for a variety of functions, and transport planning being a mechanism of managing demand, it has started to be seen, other than a necessity and enabler of economic activity, as an integral means to improve the quality of life, including the health of its residents and the environment.

This change of emphasis can be seen in the new (statutory) goal setting Mayor's document on transport (Mayor of London 2010b); this was a revision of the Mayor's first *Transport Strategy* issued in 2001²³. In 2010 the Mayor issued strategy documents both for transport (Mayor of London 2010b) and air quality (Mayor of London 2010a). The Mayor's transport strategy had five goals:

- enhance the quality of life for all Londoners,
- improve the safety and security of all Londoners,
- reduce contribution to climate change and improve resilience,
- improve transport opportunities for all Londoners, and
- support economic development and population growth²⁴.

These goals are a significant change from previous transport strategies for London in that they deal with far more than purely the means of transport²⁵.

Indicative of the change of attitude is the *Mayor's Transport Strategy* approach to roads. In its introductory paragraph on managing the road network, it states "London's road network serves a variety of purposes. It is, most obviously, the means by which people travel from A to B – by foot, cycle, motorcycle, taxi, car, bus – and by which the vast majority of freight is moved, accounting for over 80 per cent of all trips in London. But the road network also constitutes a very large proportion of London's public realm, where people can relax, socialise and enjoy the atmosphere of this world city" (Mayor of London 2010b). For the first time in a citywide transport strategy document there is no mention of any new specific road schemes with the exception of two river crossings in east London, one at Silverown and a possible one at Gallions Reach. By contrast, sixty years earlier, the London Development Plan of 1951 had 81 specific and costed new road proposals in an area a fifth of the

²² See Figures produced in D3.2 London report about Projected trip growth to 2031, and London's changing labour market balance, respectively p.19 and 33 (extracted and added in the annex section).

²³ In May 2009 the Mayor for London published a "Statement of Intent" to produce a new transport strategy (Mayor of London 2009). The reason for a revised strategy was that despite transport improvements that were made in the preceding decade significant challenges remained. "London's roads and public transport services remain among the most crowded and congested in the country (road traffic congestion is worsening in all areas of London including central London), its overall air quality remains the poorest of any region in the UK (with transport emissions as a major contributory factor), and the challenge of tackling climate change continues to be as intractable as ever, with transport (including ground-based aviation) responsible for around 22 per cent of London's total carbon dioxide (CO₂) emissions" (Mayor of London 2009).

²⁴ See Figures produced in D3.2 London report about projected trip growth to 2031, and London's changing labour market balance, respectively p.19 and 33 (extracted and added in the annex section).

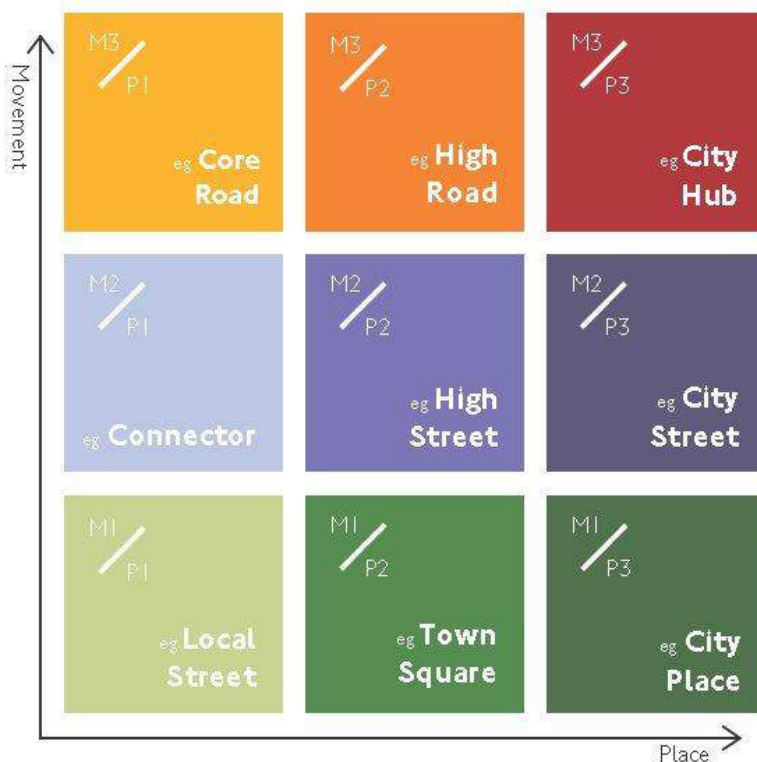
²⁵ Subsequent Mayor's Transport strategies have confirmed and strengthened this approach. The Mayor's latest strategy, published in 2018, proposes to:

- Transform Oxford Street
- Introduce and expand the Ultra Low Emission Zone
- Eliminate deaths and serious injuries on London's streets
- Develop a London-wide network of cycle routes

size of what is now Greater London (London County Council 1951)²⁶. Instead of new roads, the Mayor has championed cycling with a variety of schemes²⁷.

Important in the new type of thinking on transport was the abandonment of the road hierarchy typology of arterials, distributors and collectors to be replaced by a nine-fold classification of 'street-types' (see Figure 5 below), "representing the variety of roles that streets and roads play in a well-functioning and successful city" (Roads Task Force 2013). Roads now are not to be seen nearly exclusively for the movement of motor vehicles but also for walking and cycling. In the new type of thinking roads and other public spaces are not seen only as enabling mobility but also as places to be in and enjoy outdoor living²⁸.

Figure 5. London's new street classification



Source: Transport for London, 2012

Together with increased environmental awareness is also the realisation of how transport and "street environments" impact on health and wellbeing. In 2014 Transport for London issued a document detailing how its transport strategy will have positive results for Londoners' health. It contains explicit action plans to achieve this. This linking of transport and health is a significant policy shift in emphasis of the role of transport in London. The transport and health strategy adopts a new "whole-street" approach to London roads; again a significant departure, from the past where they were seen nearly exclusively as a conduit of traffic. Now the "whole-street" strategy includes 10 health and quality of life indicators: pedestrians, cyclists, air pollution, safety, noise, easy to cross, shade and shelter, seating, good urban design, and stress (Transport for London 2014a).

In London now there is definitely a much greater emphasis put on urban quality of life as would befit the thinking of a stage 3 type city. This shift in policy seems to be driven by a change in attitude of what is important.

²⁶ The schemes mentioned in the London Development Plan of 1951 were confined to the area of the County of London, which was only 303 km², whilst the area of Greater London is 1,569 km².

²⁷ In 2013 the Mayor published a specific strategy to encourage cycling (Mayor of London 2013) comprising "a proper network of cycle routes throughout the city, a substantial increase in cycling, and all the benefits – fitness, enjoyment and easy travel for millions, cleaner air and less traffic for all – that will follow".

²⁸ This is current TfL policy. It does not abolish the official road hierarchy as defined in legislation and by the DoT.

It has become common practice, especially in inner London, to reallocate road space to bus and cycle lanes. Health and transport are increasingly being linked with policies encouraging walking and a widespread preoccupation regarding the high levels of air pollution. An early example of such policies was 'World Squares for All' (Department of the Environment, Transport and the Regions 1998) which led to the high profile redesign of Trafalgar Square, removing vehicular traffic from one side of the square. Now, it's the proposed pedestrianisation of Oxford Street, London's main shopping street, by 2020. Perhaps the most emblematic policy of this change in thinking, is the flagship for the 2013 Mayor's strategy for cycling, a "Crossrail for the bicycle", a substantially segregated cycle route of at least 15 miles including reallocating road-space on the Westway. According to the Mayor, "the ultimate symbol of how the urban motorway tore up our cities, will become the ultimate symbol of how we are claiming central London for the bike" (Mayor of London 2013).

This stage in London is well associated with relative and absolute reductions in car use²⁹. In 2013 the Mayor set up a roads task force to create a new policy on roads. This was the first time that a holistic roads policy was drawn up for the benefit of all road users (Roads Task Force 2013). Particularly interesting is that for the first time there is the realisation of how transport and "street environments" impact on health and wellbeing (Transport for London 2014a) and how reducing car use can improve citizens' health (Mayor of London 2015). Transport for London has even developed an "Integrated Transport & Health Impact Model" to enable the comparative assessment of the impacts of physical activity, air pollution and injuries on the population of London (Woodcock et al. 2013).

Yet any visitor to London will not notice a great difference to what one would expect to see in any large metropolis. There is still a huge amount of road traffic snarling up the streets and a crowded public transport system. It would take far bolder stage 3 type thinking to truly transform the metropolis.

2.5 Concluding remarks

Although it can be said that the development of transport in London has been following the three 'stages of change' model, it has not done so categorically. It is clear that there was never a pure stage 1 type situation in London as there was an extensive public transport system in operation well before the mass advent of the motorcar. Indeed, this leads to the conclusion that a redefinition of the three 'stages of change' model may be needed to take into account of cities and regions with a long history and a developed transport system existing before mass motorisation. This is not to deny that in London there was a distinct stage 1 type of policy making. Stage 1 type thinking was prevalent for a number of decades from the 1940s onwards; however it had to be superimposed on a transport structure that already facilitated mass movement through a rather dense system of urban and suburban railways and an urban fabric not suited to it. What stage 1 policies achieved was to enable a lower density suburban growth in London and the relocation of some activities, such as shopping in new out-of-town shopping centres. This type of policy had also the effect of removing some of the city's public transport infrastructure, such as the entire tram network, and left the rest of the public transport system underfunded and under-maintained.

The period of stage 1 type policy making in London did not have the effect, as it did in other metropolises, of creating a network of urban motorways. The reason for this is that, although there was a commitment at a political level and was also mirrored by the planning profession, it never gained popular appeal.

Stage 2 type thinking came about in London from the grassroots. It emerged as a popular movement against demolition of houses to make way for urban motorways. It was most vocal, sustained and strong as a movement mainly in the more affluent north London. It formed a wide coalition against the road proposals bringing in a variety of groups such as conservationists and environmentalists. From the mid 1970s it was no longer possible to successfully propose new roads in London. The only major road infrastructure constructed in London, was the orbital M25 motorway; this was largely built in the green belt and not necessitating demolition of homes³⁰.

²⁹ See detailed figures about shift in transport mode in the annex, as extracted from D3.2.

³⁰ This major piece of new infrastructure was completed in the 1980s. It is a high capacity motorway that completely encircles the Greater London area (most of it is located just outside the administrative boundary). For a discussion of its effect on traffic levels (see WP3, D3.2 report, p.47).

Although stage 2 type thinking had closed the door to urban motorway construction, it did not have the effect of seeing investment being poured into public transport. The 1980s and 1990s saw London face a period of stagnation, where it lost its elected local government and faced the cuts in public expenditure imposed by the then Conservative government.

Thus in London, stage 2 saw the end of any serious attempt to provide a roads based solution to London's transport and mobility needs, but public transport was not a beneficiary of this. London's roads faced congestion and the public transport was underfunded and unreliable.

With the reintroduction of local democracy in London, there came a significant change in the transport policy. The thinking regarding transport changed radically to reflect the concerns associated with stage 3 type preoccupations such as air quality. Furthermore, substantial new investment was made in public transport; a belated stage 2 type policy. Now transport concerns in London are not just traffic congestion and the meeting the mobility needs of people and freight, but also well-being, high quality of life and increasingly health. Streets, that have been for decades considered only as conduits to vehicular movement, are now seen as urban spaces where people may interact, play, shop and move around.

If one were to walk around London from the distant suburbs to the city centre, one would not see many urban squares or quiet local streets with children playing. However, policies and a large proportion of the public mood are clearly moving in that direction. Flagship proposals, such as the part pedestrianisation of Trafalgar Square, that was undertaken by Mayor Ken Livingstone in 2003 and new Mayor Sadiq Khan's proposal, to pedestrianise Oxford Street by 2020, are leading the way, of what may become part of a wider stage 3 type cityscape across Britain's capital city.

Figure 6. An artist's impression of a pedestrianised Oxford Street



Source: www.urban-graphics.co.uk [may need copyright permission if this report is published].

However, some stage 1 type policies have been present to a variety of degrees at national level and in the counties surrounding London. Although these policies have ceased to be dominant in London from the late

1990s, the national government has persisted with some motorway proposals, such as the recent one crossing the river Thames in the East³¹.

Furthermore, it is clear that it is possible to have stage 2 policy dominating the transport policy discourse in one part of the city while stage 1 type thinking is dominant in another. In the case of London, it can be postulated that stage 2 type thinking became dominant in Central London from the beginning of the 19th century, as it became apparent that no road strategy could serve the unique movement needs of this dense urban area. Yet stage 1 type thinking continued to characterise transport planning in the suburbs well into the 1990s. The stage 1 type of approach to transport planning may still be dominant in many local authorities in non-urban areas outside the M25 motorway.

Table 2 (see below), based and adapted from (Banister 2002), indicates how successive governments in the United Kingdom continued to pursue a roads based transport policy.

³¹ See: <http://www.lower-thames-crossing.co.uk/about/> and (Mayor of London 2014).

Table 2. Continuity of road transport based policies by successive governments from the 1940s

Date	Political party in power	Roads Policy	Road Policies and Plans for London
1946	Labour	Adopted the “tea-room” plan ³² for trunk roads.	Greater London Plan, by Patrick Abercrombie - 1946).
1951	Conservative	Encouraged car ownership and continued the policy but curtailed spending.	London County Development Plan – 1961.
1964	Labour	Revived the trunk road programme.	Greater London Development Plan – 1968.
1970	Conservative	Continued with the strategy and investigated its implementation in urban areas based on land-use transport studies.	Conservative control of the Greater London Council. Urban motorways are continuing to be pursued.
1974	Labour	Attempted the implementation of the roads policies in urban areas until the balance of payment crisis in 1976. Then most urban schemes abandoned, downgraded or put on hold.	The Labour Party won the Greater London Council elections on a political platform that included the abandonment of urban motorway construction - 1973.
1979	Conservative	Continued with a policy of motorway construction but not in London.	The Greater London Council is abolished - 1986. Very low levels of investment in roads and public transport in London.
1997	Labour	Initially adopted a transport policy championing the environment but by 2000 changed it to include substantial road building.	A new mayor is created, who introduces road charging for central London. The Mayor's transport policy encourages public transport, walking and cycling.
2010	Conservative and Liberal Democrats	Road building continuing, but mostly on smaller schemes. ³³	The new Conservative mayor champions health and cycling but halves congestion charging zone and stalls on fully implementing a low emissions zone.
2015	Conservative	Continued with previous governments policies.	The new Labour mayor vows freeze public transport fares for four years.

Source: based and adapted from (Banister 2002)

Thus although stage 1 type thinking has become more marginal from the mid 1970s in London it formed a strand of thinking that has been dominant and to some extent continues to be pursued in national government.

Perhaps, rather than seeing the stages as distinct, it may make more sense understanding them as philosophies that run in parallel with different groups adopting them at various points. The stage 1 type philosophies formed the orthodoxy of transport planning policy up to the 1970s. Thereafter, stage 2 type thinking emerged with stage 3 type thinking only recently entering the mainstream debate.

Thus the three stages may coexist and be espoused by a variety of stakeholders at different times. As shown by the recent LSE Cities study on transport opinions in London and Berlin, there are a variety of public attitudes and views that reflect the diversity within an urban environment (LSE Cities and Inno3 2015). Thus rather than seeing the three phases abruptly succeeding one another it may be more useful to see them as representing different philosophies and policies that coexist but whose appeal and strength varies through time.

³² It is said, that the “tea-room” plan was presented by the then transport minister, Alfred Barnes, in the Members’ tea-room in the House of Commons in 1946. The plan showed an 800 mile network of motorways, which were to be completed within a decade (Banister 2002).

³³ Government transport policy as the government saw it (Department of Transport – Highways Agency 2015).

The historical analysis of transport policy in London, leads to supporting the 'three stages of change theory' but with three added levels of complexity. These can be summarised as:

1. Geography: A large city region may display different stages according to location. The inner city may be more likely to move more quickly from a stage 1 to a stage 3 situation than the outer suburbs. In London the peri-urban area that encompasses most of the South East of England, still has many of the characteristics of car-based stage 1 policy making.
2. Plurality: Many groups in society have different outlooks and aspirations. These groups tend to align themselves with the differing philosophies regarding roads and public space depending on their interests. The strength of these groups and the extent to which their philosophies gain a wider acceptance determines the overall stage of development of the city. For instance, from the 1940s to the 1960s the view of the city accommodating the increase use of the car was dominant in London.
3. Legacy: The 'three stages of change theory' may fit perfectly in explaining the development of a new city. However, older cities may retain legacies of transport systems that pre-date the car. For instance, London had developed an extensive rail-based public transport system from the times of the reign of Queen Victoria. Stage 1 in London had to be superimposed on this legacy. Stage 1 type thinking had the effect of removing London's extensive tram network but it did not close down its urban and suburban railways.

2.6 References

Abercrombie, Patrick (1946) Greater London Plan 1944: A Report Prepared on Behalf of the Standing Conference on London Regional Planning by Professor Abercrombie at the Request of the Minister of Town and Country Planning, H.M. Stationery Office.

Adams, John (1981) Transport Planning: Vision and Practice, Routledge & Kegan Paul.

Banister, David (2002) Transport Planning: Transport, Development and Sustainability – Second Edition, Taylor & Francis.

Bayliss, David (1991) *Transport in London: Entering the 1990s*, Built Environment, Vol. 17, No. 2, Transport in World Cities.

BBC News Channel (2005) “Call for action on Northern Line” (<http://news.bbc.co.uk/1/hi/england/london/4334700.stm> - Accessed 20 September 2016).

Buchanan, Colin (1963) Traffic in Towns: A Study of the Long Term Problems of Traffic in Urban Areas, Her Majesty's Stationary Office.

Carter, Edward (1962) The Future of London, Pelican Books. Chester, Daniel (1936), Public Control of Road Passenger Transport: A Study in Administration and Economics, Manchester University Press.

Cervero, Robert (1998), The transit metropolis, Washington DC, The Island press.

Department of the Environment, Transport and the Regions (1998) A New Deal for Transport: Better for Everyone, The Stationary Office.

Department of Transport – Highways Agency (2015) *2010 to 2015 government policy: road network and traffic* – Policy Paper (<https://www.gov.uk/government/publications/2010-to-2015-government-policy-road-network-and-traffic/2010-to-2015-government-policy-road-network-and-traffic>).

Docherty, Iain and Jon Shaw (2003) A New Deal for Transport?, Blackwell Publishing.

Elton, Ben (1991) Gridlock, Black Swan.

Focas, Caralampo (1998) The Four World Cities Transport Study, The Stationary Office.

Focas, Caralampo and Panayotis Christidis (2016) *Peak Car in Europe?*, Paper to be presented at the 2016 World Conference on Transport Research, Shanghai.

Forshaw, J. and Patrick Abercrombie (1943) County of London Plan, Macmillan.

Goodwin, Phil (2003) Towards a Genuinely Sustainable Transport Agenda in the United Kingdom, in (Doherty and Shaw 2003).

Greater London Council (1968) Greater London Development Plan: Report of Studies, Greater London Council.

Greater London Council (1985a) Metropolis 84' – GLC Papers, Reviews and Study Series: No 24, Greater London Council.

Greater London Council (1985b) GLTS81: Transport Data for London, Greater London Council.

Hall, Peter (1966) The World Cities, World University Library.

Hall, Peter (1989) London 2001, Unwin Hyman.

Hart, Douglas (1976) Strategic Planning in London: The Rise and Fall of the Primary Road Network, Pergamon Press.

Hebbert, Michael (1998) London: More by Fortune than Design, John Wiley and Sons.

Institution of Highways and Transportation and Department of Transport (1987) Roads and Traffic in Urban Areas, HMSO

Jones, Peter (2013) *Integrating TDM within a wider policy framework to influence long-term traffic growth trajectories*, 6th International Symposium on Travel Demand Management, Dalian, China.

Jones, Peter (2016) *The evolution of urban transport policy from car-based to people-based cities: is this development path universally applicable?*, Paper to be presented at the 2016 World Conference on Transport Research, Shanghai.

LBC/IRN (1994) "The Northern (misery) line"
(<http://bufvc.ac.uk/tvandradio/lbc/index.php/segment/0001600112006> - Accessed 20 September 2016).

LSE Cities and Innozc (2015), Towards New Urban Mobility: the Case of London and Berlin, London School of Economics and Political Science and Innovation Centre for Mobility and Societal Change.

London County Council (1951) Administrative County of London Development Plan 1951: Analysis, London County Council.

Mail Online (2016) "Mayhem on the 'Misery Line': Thousands of commuters are stranded outside closed stations as Tube line is shut for over two hours in rush hour after man is hit by train"
(<http://www.dailymail.co.uk/news/article-3588517/Thousands-commuters-stranded-outside-closed-stations-Tube-line-shut-two-hours-rush-hour-man-hit-train.html>) - Accessed September 2016).

Mayor of London (2001) The Mayor's Transport Strategy, Greater London Authority.

Mayor of London (2002) The Mayor's Air Quality Strategy: Cleaning London's Air, Greater London Authority.

Mayor of London (2009) Mayor's Transport Strategy: Statement of Intent, Greater London Authority.

Mayor of London (2010a) Clearing the Air: The Mayor's Air Quality Strategy, Greater London Authority.

Mayor of London (2010b) Mayor's Transport Strategy, Greater London Authority.

Mayor of London (2011) Delivering London's Energy future: The Mayor's Climate Change Mitigation and Energy Strategy, Greater London Authority.

Mayor of London (2013) The Mayor's Vision for Cycling In London: An Olympic Legacy for all Londoners, Greater London Authority.

Mayor of London (2015) Health Impacts of Cars in London, Greater London Authority.

Mayor of London (2016) The Greater London Authority Consolidated Budget and Component Budgets for 2016-17, Greater London Authority.

Mayor of London, Department of Transport & Transport for London (2016) A New Approach to Rail Passenger Services in London and the South East: Working in Partnership to Improve Services and Promote Growth, Department of Transport & Transport for London.

Mayor of London (2018) Mayor's Transport Strategy, Greater London Authority.

Mogridge, Martin (1990) Travel in Towns: Jam yesterday, jam today and jam tomorrow?, Macmillan.

Plowden, William (1971) The Motor Car and Politics 1869 - 1970, The Bodley Head.

Pulcher, John and Lefèvre Christian (1996) The Urban Transport Crisis in Europe and North America, Macmillan.

Roads Task Force (2013) The vision and direction for London's streets and roads, Transport for London.

Sewell, Derrick and Coppock J. (1977) Public Participation in Planning, John Wiley & Sons.

Thames News (1988) "London Underground - Northern Line"
(<https://www.youtube.com/watch?v=Hnsv-ese58k> - Accessed 20 September 2016).

Thomson, J. (1977) The London Motorway Plan, in (Sewell and Coppock 1977).

Thomson, J. et al. (1969) Motorways in London, Sage Publications. Transport for London (2015) TLRN Performance Report: Quarter 2 2015/16, Transport for London.

Transport for London (2016), Technical report for Stage 3 city London, CREATE Project, WP3, 2016.

Transport for London (2014a) Improving the Health of Londoners: Transport Action Plan, Transport for London.

Transport for London (2014b) Public and stakeholder consultation on a Variation Order to modify the Congestion Charging scheme: Impact Assessment, Transport for London.

Transport for London (2014c) Travel in London: Report 7, Transport for London.

Transport for London: Surface Transport (2014d) Casualties in Greater London during 2014, Transport for London.

Transport for London: Roads Task Force (2013) How many cars are there in London and who owns them? – Technical Note 12, Transport for London.

Travers, Tony (2004) The Politics of London: Governing an Ungovernable City, Palgrave Macmillan.

Wistrich, Enid (1983) The Politics of Transport, Longman.

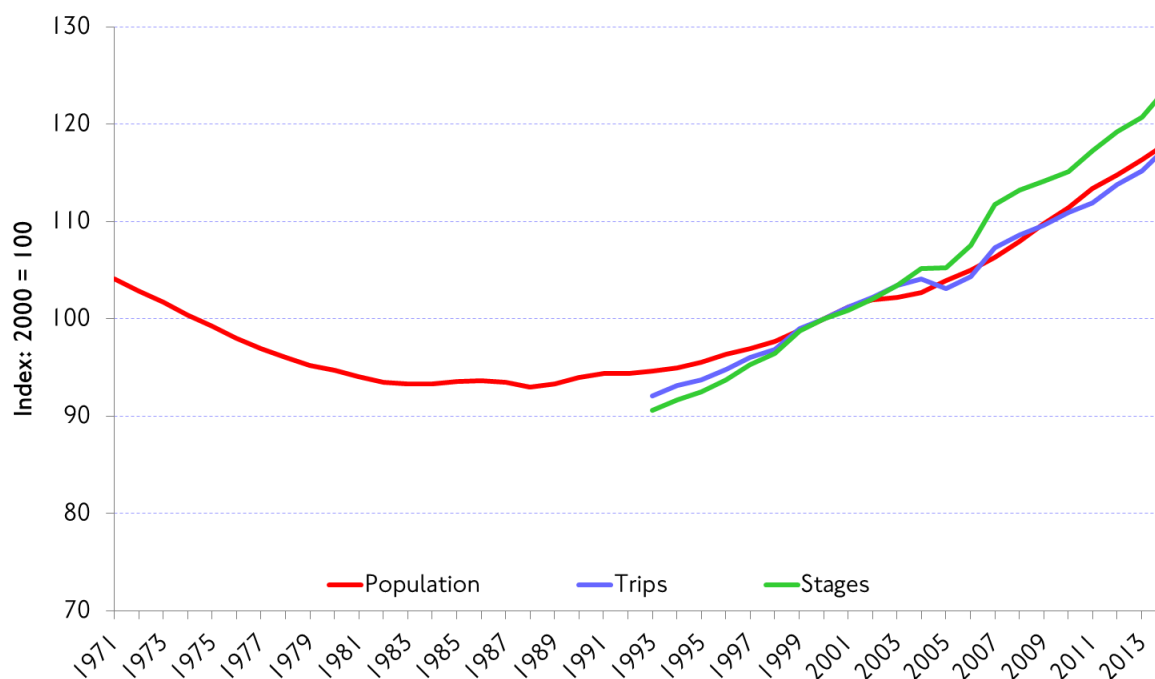
Wood, Chris and Blancher, Philippe (1999) The Role of Citizen Groups in Urban Transport Policy in France and Britain, European Transport Conference, 1999.

Woodcock J, Givoni M, Morgan AS (2013) *Health Impact Modelling of Active Travel Visions for England and Wales Using an Integrated Transport and Health Impact Modelling Tool (ITHIM)*, PLoS ONE, Vol. 8 Iss. 1.

3 Annexes

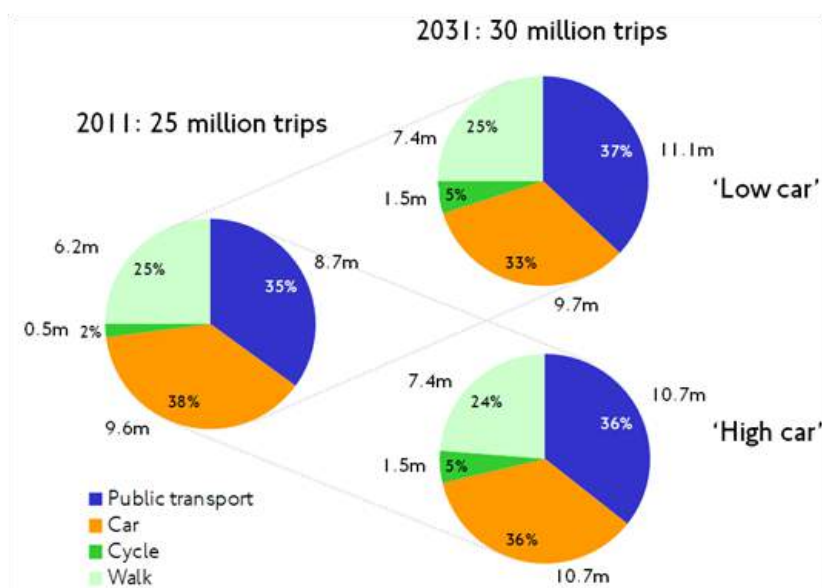
Most figures have been extracted from the D3.2 London report or from presentations made by Charles Buckingham at CREATE meetings.

Figure 1. Basic population trend for Greater London, showing relationship to indicators of total travel demand.



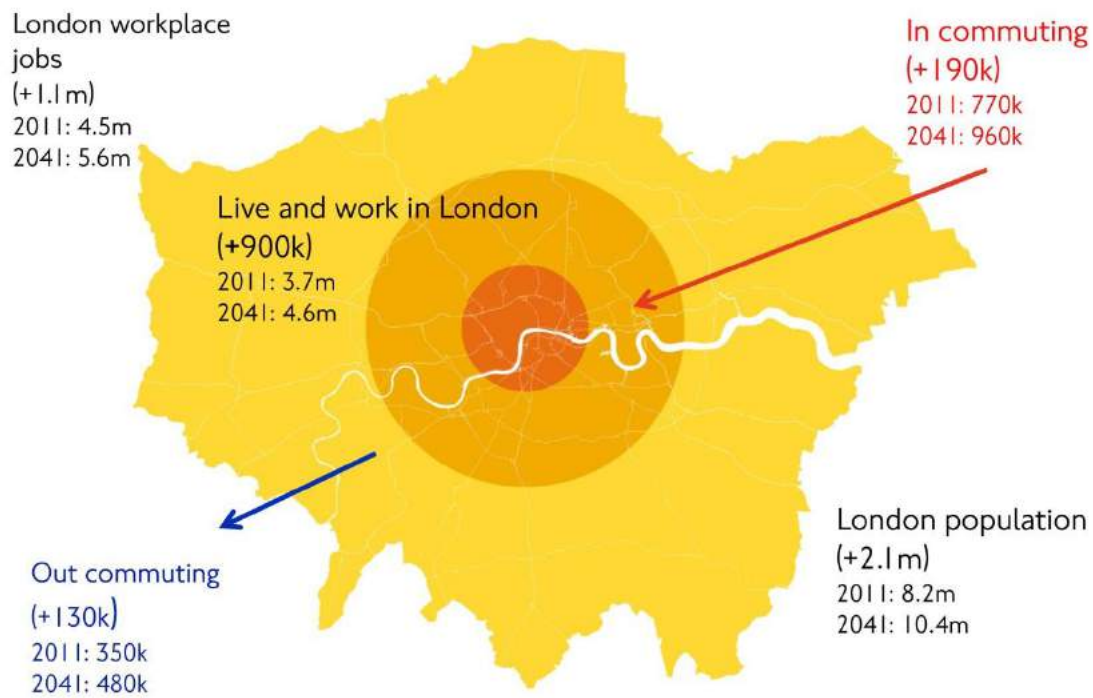
Source: Transport for London, CREATE project, D3.2 report, p.17.

Figure 2a. Projected trip growth to 2031 – ‘high’ and ‘low’ car scenarios compared. CREATE Zones 1 and 2 combined.



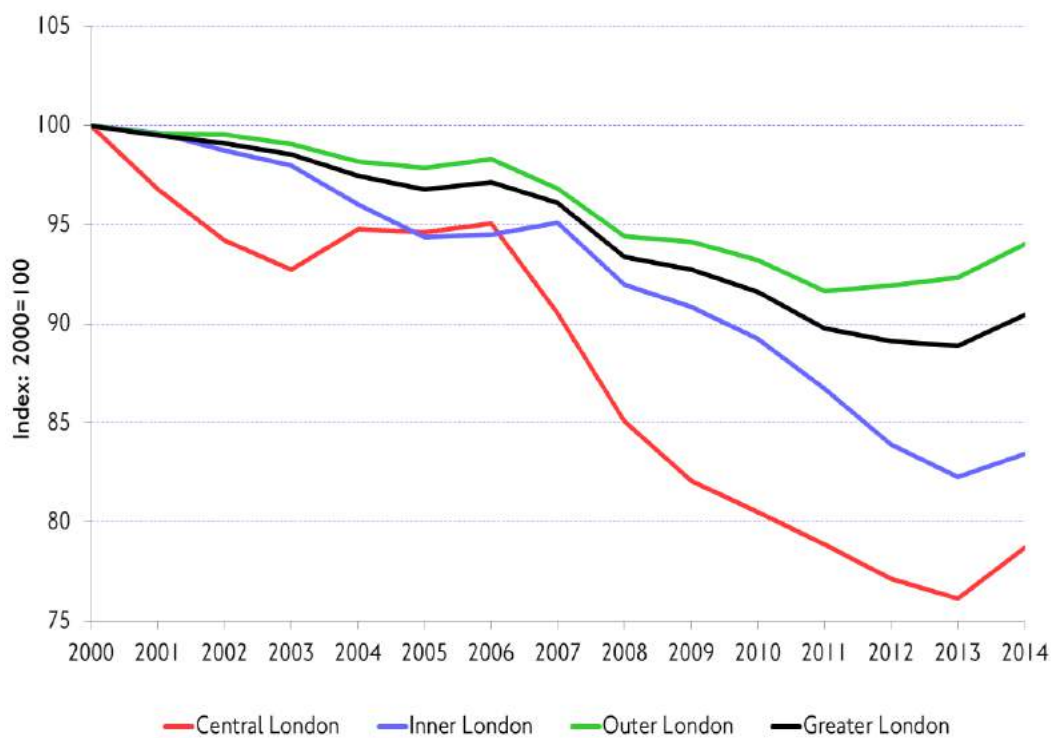
Source: Transport for London, Strategic Analysis, extracted from CREATE project, WP3, D3.2 report, p.19.

Figure 2b: London's changing labour market balance.



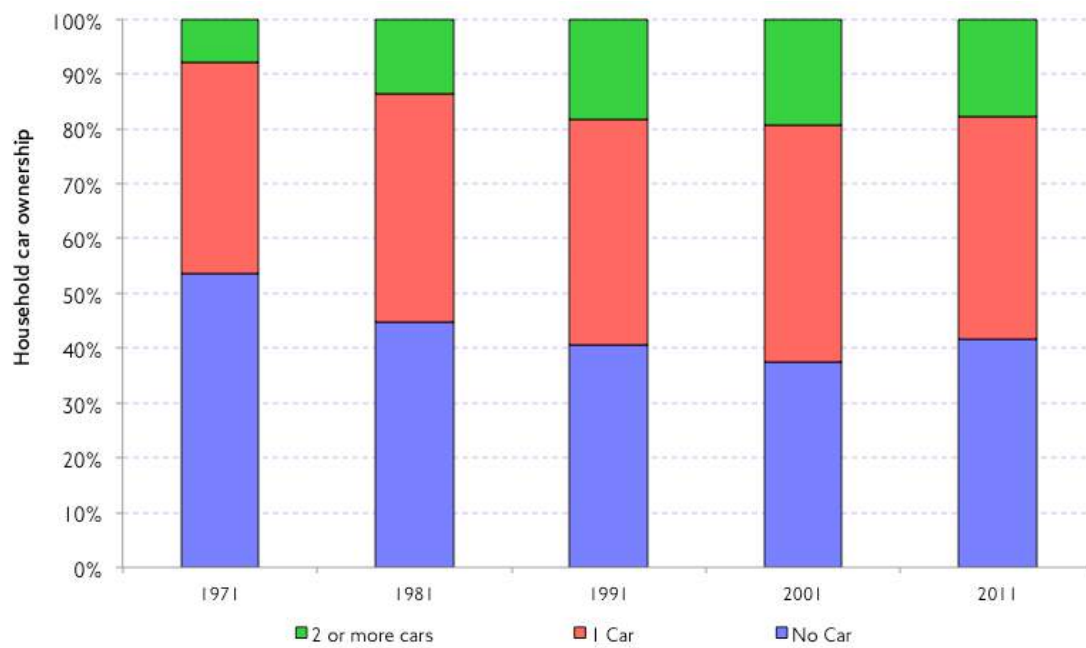
Source: Greater London Authority, extracted from CREATE project, WP3, D3.2 report, p.33.

Figure 3. Decline in road traffic



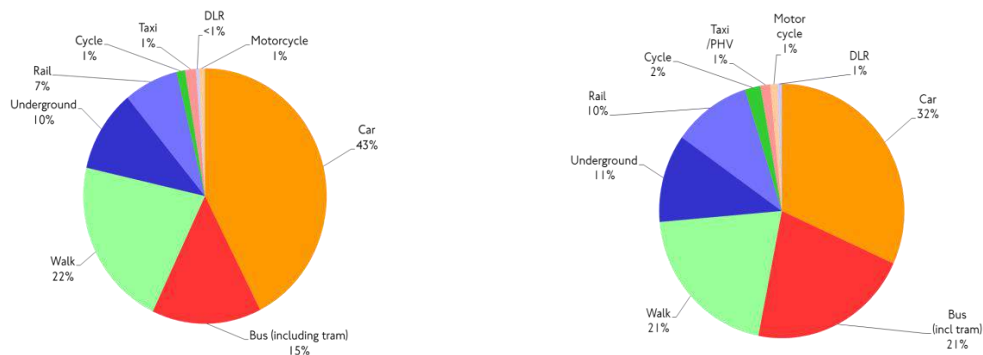
Source: Greater London Authority, extracted from CREATE project, WP3, D3.2 report, p.33.

Figure 4. Long term trend in household car ownership in Greater London.



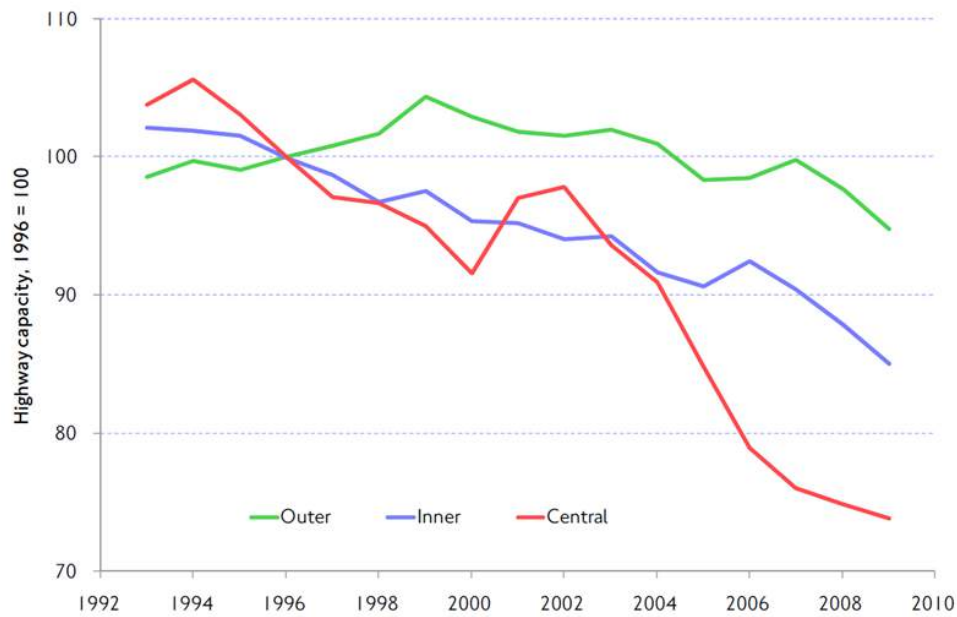
Source: Greater London Authority, extracted from CREATE project, WP3, D3.2 report, p.77.

Figure 5. An 11 percentage point net shift in mode share, 2000-2011.



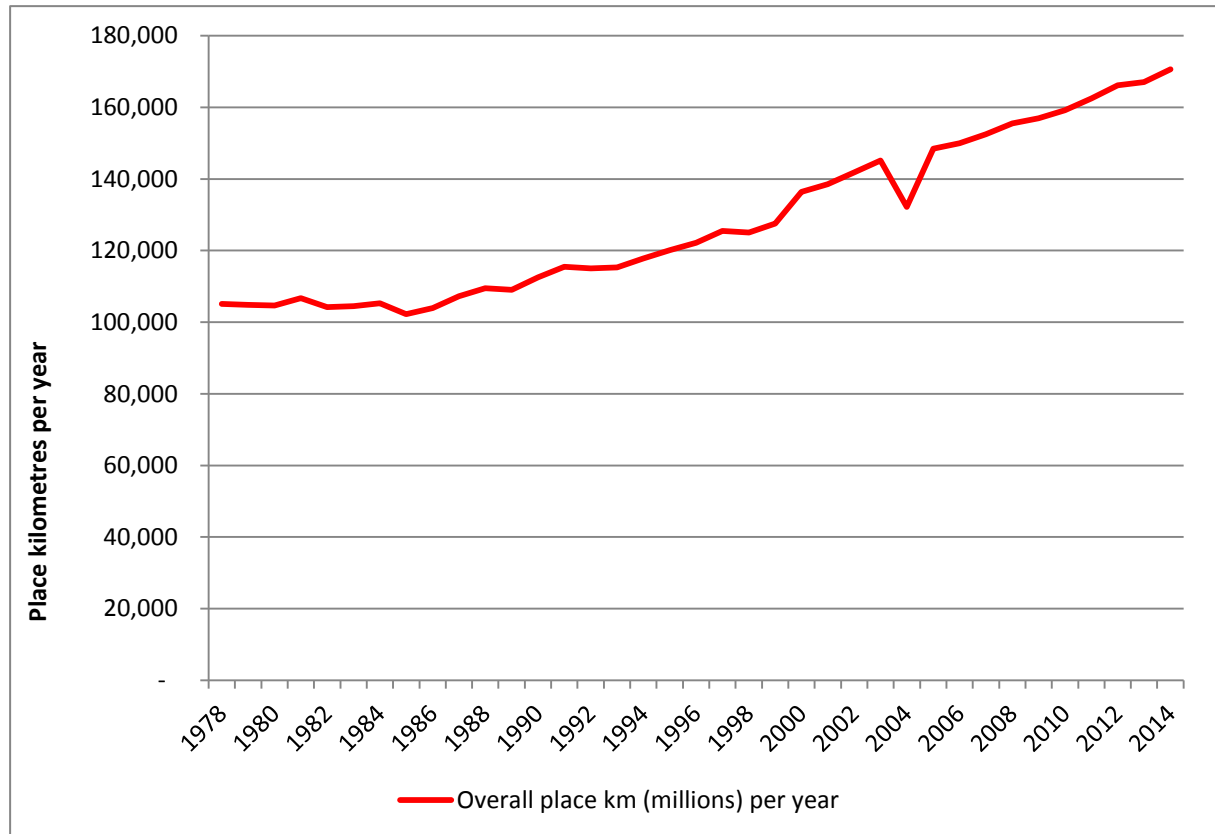
Source: Transport for London, CREATE project, Charles Buckingham, Amman SC meeting, October 2016.

Figure 6. Inferred change in effective road network capacity in Greater London.



Source: Greater London Authority, extracted from CREATE project, WP3, D3.2 report, p.52.

Figure 7. Public transport capacity in Greater London. Million place kilometres provided per year. Indicative trend.



Source: Greater London Authority, extracted from CREATE project, WP3, D3.2 report, p.60.

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D4.2 - Technical report for Stage 3 city: Paris and Ile-de- France

Work Package 4 “Qualitative analysis of Transport policy developments”

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1 The CREATE project

1.1 Brief reminder about the CREATE project

How to reduce road congestion in large cities in Europe and the Euro-Med? How to encourage a change from car use to more sustainable transport modes? Historically, rapid urban growth has led to a growth in car ownership and use, and consequential increases in urban road traffic levels. These increases, in turn, are associated with a range of negative impacts, including traffic congestion, traffic collisions, social exclusion and dangerous levels of air and noise pollution.

Recently, some European cities (Berlin, Copenhagen, London, Paris, Vienna) appear to have been successful in decoupling economic growth from traffic growth – and in the process, have been able to offer urban living environments that are cleaner and less congested, while maintaining increases in living standards. Why have these cities been able to achieve this turnaround, and what lessons can be drawn for other parts of Europe and the Euro-Med?

To answer this fundamental question, the CREATE project (Congestion Reduction in Europe, Advancing Transport Efficiency) brings together a team of international analysts in order to explore historical patterns of urban road traffic and car use, to identify success factors in encouraging modal shift and lessons learnt in Western European capital cities, and to work with Eastern Europe and Euro-med city partners (Adana, Amman, Bucharest, Skopje and Tallinn) to assist them in developing sustainable strategies.

Further information available on the CREATE Website: <http://www.create-mobility.eu/>

1.2 About Work Package 4 in the CREATE Project

How to account for the shift away from car-oriented policies towards sustainable urban transport policies?

As part of the CREATE project, the primary goal of Work Package 4 (WP4) is to analyse the historical 'Transport Policy Evolution Cycle' processes in Stage 3 cities, i.e. five Western European capitals (Berlin, Copenhagen, London, Paris and Vienna): Can we identify similar qualitative drivers of change across European cities? What are the main differences between cities and how to account for them? To what extent does the analysis of policy developments over time helps us make sense of recent policy choices and deadlocks? This is done by identifying the qualitative and contextual drivers that have enabled – or hindered – a shift from Stage 1 "urban congestion growth" to Stage 3 "encouraging sustainable mobility and liveable cities" policies. It also contributes to highlighting lessons to be learnt in order to speedup these processes in Stage 1 cities.

The work done as part of WP4 is coordinated by Dr. Charlotte Halpern, at Sciences Po, Centre d'études européennes et de politique comparée (CEE), CNRS, Paris.

This document, **D4.2 Paris and Ile-de-France region report**, is part of the second series of technical reports produced as part of WP4 during Task 3, "Qualitative analysis of transport policy development cycle processes in the five Stage 3 cities during the Shift from Stage 1 to Stage 3". It seeks to develop a comprehensive qualitative analysis of the historical development of policies relating to traffic congestion and car use over the past four decades. It investigates the ways in which transport policies are designed and implemented in the five Stage 3 cities, how they have evolved over time, which policy mix has been favoured at different times, their intended/unexpected effects, and how coordination has been ensured.

By highlighting discrepancies between policy choices and policy results, D4.2 reports contribute to understanding the shift away from car-oriented policies towards alternative transport policies in different city contexts.

This is done across the 5 cities as follows:

- Explore urban sustainable policy dynamics by looking at three policy dimensions:
 1. policy objectives (i.e. Which are the main policy documents? How are the power and resources distributed among different levels of government? Major policy reforms? Proposed, passed and failed measures?),
 2. policy structures (i.e. what are the main resources: legal, financial, organizational? Evolution of budgets? Organization charts? Creation of new agencies?)

- 3. policy instruments (i.e. regulatory/legislative, economic/fiscal, agreement-/incentive-based, informative/ communication-based).
- Map out the evolution over time since the policy shift began by explaining the dynamics of issue salience, institutional and political changes, as well as changes in the governance of transport.
- Understand how controversies regarding urban sustainability policies were resolved by looking at policy results (failed/accepted measures).

The completion of Task 3 draws on the work done in Tasks 1 and 2, as introduced in the 1st WP4 Technical report. It developed the common analytic framework, methodology and data collection strategy that is applied in WP4, provided a first assessment of the spatial and chronological perimeter it targets, and a brief mapping out of multi-level institutional and transport governance settings in the five Stage 3 cities, including a chronology of the shift from Stage 1 to Stage 3. Data sources include policy documents, proposed and passed measures, yearly budgets, and expert interviews with key policy actors.

The work achieved as part of WP4 is complementary to other work produced as part of the CREATE project. Particularly noteworthy is the work done as part of WP3 and D3.2 reports, which introduces transport supply data and policies influencing travel demand in each city. When relevant, specific sections from D3.2 reports are referred to. This will be done systematically during Task 4, and as part of WP5.

1.3 About this document, D4.2 Paris and Ile-de-France region report.

This D4.2 Paris and Ile-de-France region report develops a case study of this specific Stage 3 city. A preliminary draft was produced by Alessandro Maggioni in September 2016. It was then completed by Dr. Charlotte Halpern (Sciences Po) (August 2017) in order to develop an analysis of transport policy developments in Paris and the Ile-de-France region. It provides key data and high-level interpretations for this case to feed into the wider cross-city analysis of transport policy evolutions being undertaken for Work Package 4 of the CREATE project. More precisely, each D4.2. report includes the following information:

- A short summary
- Context: socio-demographic changes, major evolutions in urban development
- Institutional and political arrangements
- The governance of transport
- The organization of transport, including the transport offer
- Main policies, measures, or projects
- A brief conclusion about the 3 stages approach
- References, including grey literature and major policy reports, main publications about urban governance and transport.

This D4.2 Paris and Ile-de-France region report is not of itself a definitive synthesis of transport policy evolutions and their causes in the Paris Ile-de-France region, but it is rather a compendium of resources, with some basic interpretation, to feed into this further analysis. It is complementary to the work produced by IAU Ile-de-France¹, as part of WP3, which reviews transport supply data and policies influencing travel demand in the city.

This report reflects only the authors' view. Where opinions are expressed about the causes of change or the significance of specific aspects, these are with the sole intention of guiding further analysis under the CREATE programme and to act as a starting point for that further qualitative analysis.

1.4 Short summary of D4.2 the Paris and Ile-de-France region report

The analysis done in CREATE highlights the critical role played by political and institutional conflicts in a context of exacerbated fragmentation and the extent to which a large variety of actors, namely different levels of government, technical agencies, political parties, elite groups and professional networks, compete in order to shape transport governance and the distribution of transport policy resources. This was achieved through continuous institutional reforms, major conflicts and competition strategies, and the development of highly visible policy initiatives and projects.

¹ Institut d'Aménagement et d'Urbanisme Ile-de-France

By contrast to other cities under study in WP4, where consensus-seeking strategies account for policy change over time, competition emerges as the main driver for change in the case of the Paris and Ile-de-France region: competition between levels of government, between political parties, between transport companies and between social and economic groups. Together, this accounts for the coexistence over a long period of time of two highly differentiated models of urban and spatial planning in the capital-city region: on the one hand a liveable, sustainable and compact model in which the automobile is integrated in a larger regional sustainable transport system, and on the other hand, a regional growth model which primarily relies on the automobile in order to ensure daily accessibility for commuters to the core metropolitan area.

Interestingly, such levels of competition have not led to inertia and the report documents the ways in which demographics and urbanization dynamics were instrumental in triggering various forms of collective action across the region. In terms of transport policy developments and transport behaviours, the evolution of transport policy objectives, resources and tools sheds light on both the “What’s” (substance) and the “How’s” (governance) of transport policy change. On the one hand, it shows how a sustainable approach to transport planning and policy-making progressively emerged at the margins of the transport policy sector, through the diffusion of alternative representations and policy solutions, and by drawing on small-scale innovations. But on the other hand, the evolution of transport policy objectives, resource and tools also highlight how state elites and networks are able to successfully resist bottom-up pressures and maintain, in a number of cases, a state-led approach to transport planning in the capital-city region that prioritizes its role as the national powerhouse.

Acknowledging the continued coexistence of both dynamics as well as their interplay over time contributes to better understanding remaining spatial disparities in terms of transport policy developments - a result that echoes the analysis done in WP3 regarding individual/collective choices pertaining to transportation in Paris and the Ile-de-France region. A shift away from the automotive city undoubtedly took place in the Paris Ile-de-France region, and the development of stage 3 policies is precisely documented. Yet this result remains ambiguous: this evolution is unevenly spread – both socially and spatially, recent conflicts over specific transport policy initiatives confirmed the permanence of high resistance capacities and the ability of a number of new entrants and old players to draw on new technologies in order to promote car-based forms of mobility.

The report is organized in two main sections. First, several drivers of transport policy change are examined successively: socio-demographic changes, institutional and political factors and the organization of transport in Paris and the Ile-de-France region. Second, the shift away from the automobile is analysed through the lenses of public policy change, by looking successively at the evolution of policy objectives, measures and tools over time. In the conclusion, the report discusses current challenges in transport governance and policies in the French capital-city region, and the extent to which it holds some valuable lessons for other cities in the CREATE project and beyond.

2 Introduction to the Paris and Ile-de-France region report.

This report examines transport policy processes in Paris and the Ile-de-France region – referred to in this report as the Paris Ile-de-France region – and the shift away from car-oriented policies towards alternative transport policies in the context of rapidly evolving economic, social and urban dynamics. When considering the evolution of transport demand over time, there has been a distinctive shift away from the ‘automobile city’ in the Paris Ile-de-France region – even though its scope and rhythm is unequally distributed in the region. Since the early 2000s, car traffic stabilized. For the first time since 1976, the average number of daily trips made by private cars dropped from 1.54 in 2001 to 1.46 in 2010 whereas demand has been on the rise for all other transport modes. In the city of Paris, the downward trend began in the 1990s, going from 0.77 daily trips by car on average in 1991, to 0.65 in 2001 and 0.41 in 2010. In the inner ring of the region, this shift seems to have occurred much recently. Today, the outer ring of the region is the only area in which increased growth in car use is taking place. At the same time, the use of public transport has sharply increased across the region (+ 21 per cent between 2001 and 2010) and the average number of daily trips by bicycle doubled between 2001 and 2010. In the meantime, there has been an increase of car traffic in the outer suburbs – between 30 and 40 kilometres from Paris.

This report’s main objective is both descriptive and explanatory at the same time. First, it offers a detailed overview of major developments in transport over time. Second it provides some explanation for these changes in transport behaviours by exploring changes – and identifying drivers for change – in transport policies and governance over time. Which policy objectives, instruments and measures were introduced? How were they elaborated? By whom? Were they successfully implemented? What were the main drivers – or combination of drivers – that influenced such transport policy developments over time and account for such outputs in terms of transport behaviours?

Analysing transport policy developments over time, the report seeks to explore the relevance of the ‘three stages’ approach for understanding policy change and the shift away from car-oriented policies in the Paris Ile-de-France region. It also provides some explanation for policy change and the shift towards urban sustainable mobility by looking at different drivers for change and analysing how and why they explain transport policy developments over time.

More precisely, the report argues that transport policy developments over time in the Paris IDF Region are closely related with dynamics of political and institutional competition between levels of government. In this context, policy change is primarily shaped by two competing logics: 1) a highly centralized and state-driven policy domain, in which major policy resources are highly concentrated; 2) continued pressure for increased decentralization to the benefit of democratic or functional levels of governance.

Area selection

The choice made in WP4 to consider both Paris and the Ile-de-France region brings some difficulties when it comes to understanding and explaining policy processes. This has several implications for the analysis done as part of WP4 and explains why the area under study in this report differs slightly from the choices made in WP3 in order to refer to formal levels of functional and institutional governance. It also led to consideration of dynamics at both the region and the city levels.

This choice also had some major implications regarding data availability. Due to high degrees of institutional and political fragmentation, and in the absence of an integrated transport authority at regional level, each level of government has produced its own data management capacity about those dimensions of transport policy and governance it was responsible for. This is particularly the case for car traffic. Recent controversies about transport decisions highlighted the role of data production and expertise (e.g., the choice of indicators, impact assessment methods etc.) as a major policy resource in political, institutional and organizational competition.

Data availability and sources

In addition to the preliminary work done on transport governance in Paris and the Ile-de-France region as part of the Transformative Urban Transport (TUT-POL) project², the report primarily draws on the material collected as part of the CREATE project. This includes contributions from IAU Ile-de-France to WP4,³ a group interview session organized together with IAU Ile-de-France, additional face-to-face interviews, and the input provided by IAU Ile-de-France to WP3 and WP6, and to the CREATE project more generally⁴. Second, a large amount of data was gathered from secondary sources: statistical data and reports, grey literature (e.g., archives) and press archives. Most planning documents are available at the IAU Ile-de-France library. Third, press archives at the Sciences Po Library and the Bibliothèque François Mitterrand were particularly useful in order to access information and identify key actors, regulations, public reports and transport projects for the pre-1990 period. For the recent period, a systematic press review of major national newspapers (e.g., “Les Echo”, “Le Parisien”, “Le Figaro”, “Le Monde”) was done through the Factiva database. This press review also allowed identifying major controversies about transport and mobility in the Paris-Ile-de-France region.

Data collection was systematized as part of the completion of the WP4 database. This was achieved by the Sciences Po, CEE team (Alessandra Carollo, Charlotte Halpern, Simon Persico).

Report outline

The report is organized in two main sections. The first one discusses the role of drivers for change, and successively explores the role of demographic and socio-economic pressures, political and institutional changes, and finally, changes in transport governance. In the second section, the report provides a detailed analysis of transport policy developments over time, in order to provide some empirical evidence for change and to account for it. In the conclusion, the report discusses current challenges in transport governance and policies in the Paris Ile-de-France region.

² This case study has also benefited from the work done outside the CREATE project as part of the TUT-POL project, *Transformative urban transport*, led by Diane Davies, with funding from the Volvo Foundation for Education and Research. The Paris case (Halpern, Le Galès, 2015) is one of the cases examined in this project. Some of the material, including interviews done between March and June 2015, which content was not used in the TUT-POL report, was included when relevant in the analysis done as part of CREATE. Findings from the TUT-POL project will be published as part of an edited volume to be published at Oxford University Press in the Fall (Davis, Altshuler, forthcoming Fall 2018).

³ See Raes (2016) as well as the D3.2 Paris Ile-de-France report (Nguyen, Courel, 2016)

⁴ This group interview was jointly hosted by IAU Ile-de-France and Sciences Po, CEE. It took place on January 29, 2016 at Sciences Po. See D4.1 WP4 report.

3 Major drivers of transport policy change in Paris Ile-de-France.

A set of specific contextual elements (demographic, socio-economic, political, etc.) are introduced in this section in order to examine major drivers for change. As in the case of other Stage 3 cities in CREATE, the Paris Ile-de-France area underwent profound demographic and socioeconomic changes over the time period under study. Urban and demographic growth did undoubtedly contribute to shape evolving transport demands and transportation choices in the Paris-Ile-de-France Region, and this relationship was, to some extent, shaped by institutional and political factors. They also account for the high level of fragmentation in transport governance and to the number of variations in the planning, the funding and the organization of transport systems and services.

After having introduced some elements of context about the Paris Ile-de-France region, we successively examined three main drivers of transport policy change: urban and demographic growth, political and institutional competition between the three levels of government, and the organization of transport. In doing so, the report sheds light on three dynamics, which, together, have shaped policy and governance capacities in the Paris Ile-de-France region and discusses their respective role over time:

- Profound and enduring socioeconomic inequalities within the region,
- The critical role of the state through elite networks, state-owned enterprises and political interests,
- Successive attempts by subnational levels of government to increase their autonomy according to a logic of competition.

3.1 Some elements of context

Paris is a 2000 years old city and a globalizing metropolis in cooperation/competition to London in the European context. Although unevenly distributed within the region, it witnessed continued demographic growth from 8,4 million inhabitants in 1960 to 12 million inhabitants in 2015 (see Figure 1a). In 2013, its population amounted to 18.8 percent of metropolitan France's total population and its GDP amounts to 30.1 percent of that of metropolitan France. It is also the location of large share of jobs and businesses (See Figure 1b).

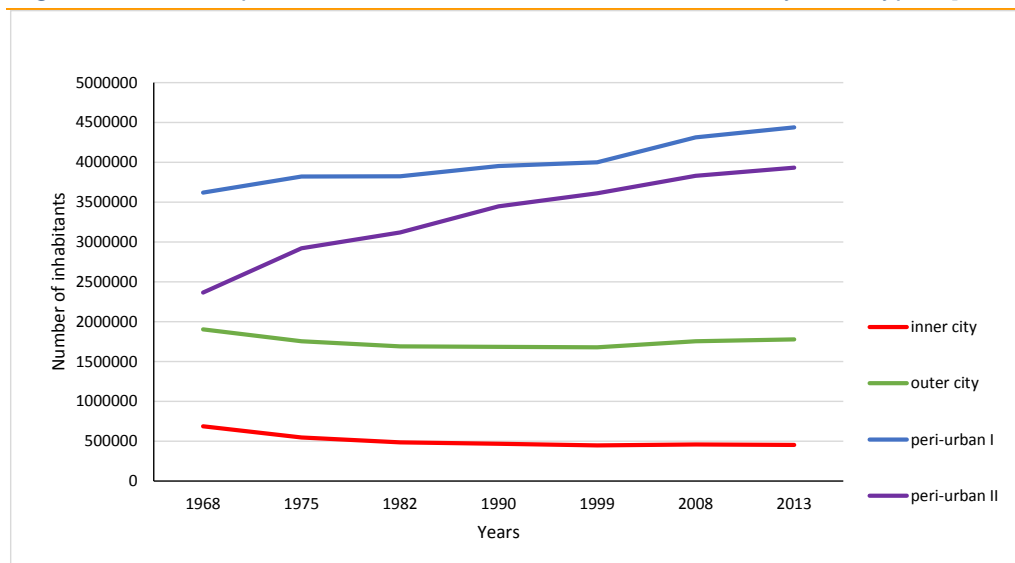
3.1.1 Paris, an old European metropolis in a growing region

The capital-city region is also the country's undisputed political, economic and financial centre (Gilli, 2014, 40-44). From the late 17th century onwards, the French State massively invested in the development of a national and centralized transport network (trains, then motorways) in order to ensure accessibility to the capital-city in a minimum amount of time. It attracts presently a large number of daily commuters from adjacent regions and nation-wide, and the continued development of transport infrastructures and networks over time have contributed to this centrality. This urban area is also a major destination for tourism, with some 30 million visitors every year. City users and transport users are altogether a far larger group than the city's or the region's residents, thus contributing to the diversity of transport and mobility needs in the capital-city region. In 2014, some 33,5 million of tourists came to Paris.

The Paris Ile-de-France area is also a globalizing metropolitan area. It ranks second among the regions of Europe and its per-capita GDP is the fourth-highest in Europe. It hosts the world headquarters of 30 Fortune Global 500 companies⁵. Similarly to London, Paris is structurally different from other European cities (regional capital, capitals of smaller states) and regions organized in networks (e.g., Randstadt, Lombardia, Ruhr area, etc.) (Le Galès and Vitale, 2013).

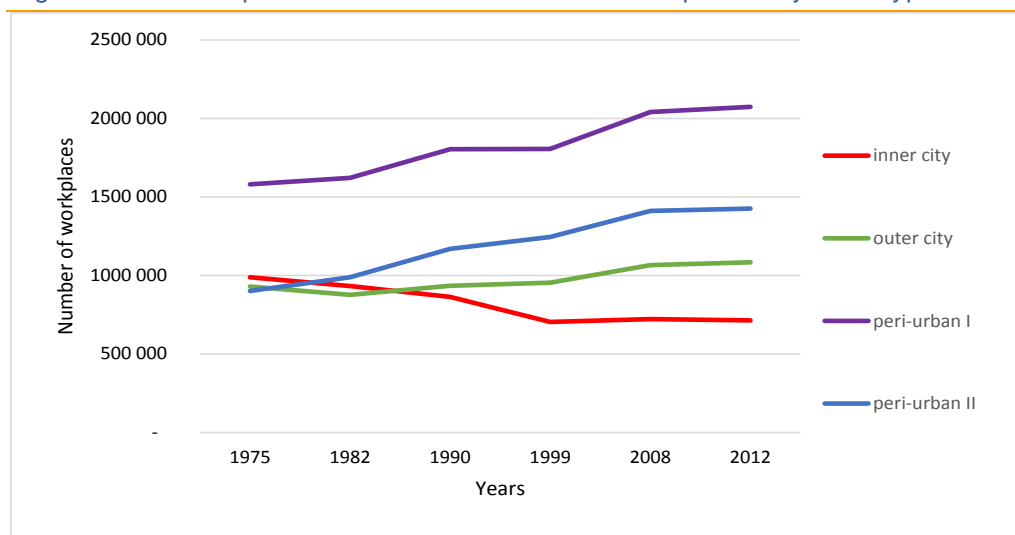
⁵ See D3.2 report, p.21. For a detailed account of the economic structure of the Ile-de-France region, see Gilli (2005; 2014).

Figure 1a. Development of the total number of inhabitants by area types [number] since 1968



Source: French General Census, IAU, extracted from D3.2 report (p.15).

Figure 1b. Development of the total number of workplaces by area type



Source: French General Census, IAU, extracted from D3.2 report (p.15).

From a political and an institutional perspective, there is a clear distinction to be made between the city of Paris on the one hand, and the Ile-de-France region on the other hand (see Table 1). In addition, policy developments within the region itself are far from being homogenous and are only weakly governed by the regional authority (Estèbe, Le Galès, 2003; Gilli 2014).

The city of Paris can be traced to an old historical centre of 2,3 million inhabitants. It is very densely populated⁶ and surrounded by an orbital motorway that strictly demarcates the core city centre from the urban region. It enjoys a specific political and administrative status, and to some extent, a large autonomy in terms of policy initiatives and projects. By contrast, the Ile de France region contains some 12 million inhabitants. In its current political and institutional status, it is considered a recent creation and its development, as a legitimate policy-making and spatial planning authority, results from successive territorial and administrative reforms that

⁶ See also results from WP3 in the CREATE project, D3.4 report, forthcoming.

were introduced by the French state in an attempt to shape urbanization dynamics while at the same time ensuring the effective functioning of the country's powerhouse.

Today, urbanisation dynamics go beyond the region's borders (Bassin parisien) and raise new issues of coordination and competition with adjacent regions in a number of policy areas, including transport. High-speed train networks and air transport have also considerably increased the level of daily commuting between Paris and other cities in Europe (e.g., London, Brussels, Amsterdam, Cologne) (Cattan et al., 1999).

3.1.2 Implications for the analysis done in WP4

From an institutional and a political perspective, a clear distinction should be made between three historic levels of government and strategic scales of planning (see Table 1 and Maps 1a and 1b): the State, the region and the city of Paris. As a result, the analysis done in WP4 distinguishes between the following areas - and some of the figures were adapted from the D3.2 report by IAU Ile-de-France in order to reflect the choices made in WP4:

- The city of Paris (incl. its 20 districts or *arrondissements*)⁷
- The inner suburbs area or *petite couronne* (incl. 3 départements)⁸, which more or less corresponds to the greater metropolitan authority (métropole du Grand Paris⁹),
- The outer suburbs area or *grande couronne* (incl. 4 départements)
- The Ile-de-France Region as an overarching policy-making authority in a selective number of policy areas (see also INSEE, 2011).

Overall, some 70% of the population lives in the core metropolitan area of the Paris Ile-de-France area.

In some cases, the role of specific municipalities within the region or of specific Parisian districts is also discussed in order to account for transport policy developments in the region as a whole.

Since January 2016, one should add the greater metropolitan authority, métropole du Grand Paris, although its precise role and function is still under discussion until 2020. It is likely to play a growing role in the future as a relevant transport planning organisation.

Table 1. Overview of major levels of government in the capital-city region

	city of Paris	métropole du Grand Paris (since Jan. 2016)	Ile-de-France region
Population	2.265.866	7.000.000	11.800.000
Size	105 km ²	762 km ²	12.011 km ²
Density	23685/km ²	10334 /km ²	996 /km ²
Democratically elected political leadership	Mayor of Paris (since 1977), currently Mayor Hidalgo (Socialist party)	President of the Great Paris (since 2016), currently Patrick Ollier (Conservative Party, LR)	President of the Ile-de-France regional council (since 1986), currently Valérie Pécresse (Conservative Party, LR)
Number of local authorities	20 districts	131 local authorities, incl. 4 départements and 12 public authorities.	1291 municipalities, 8 départements.
Budget	Between € 8 and 9 billion	€ 3,7 billion, incl. € 65 million for direct investment	€ 5 billion

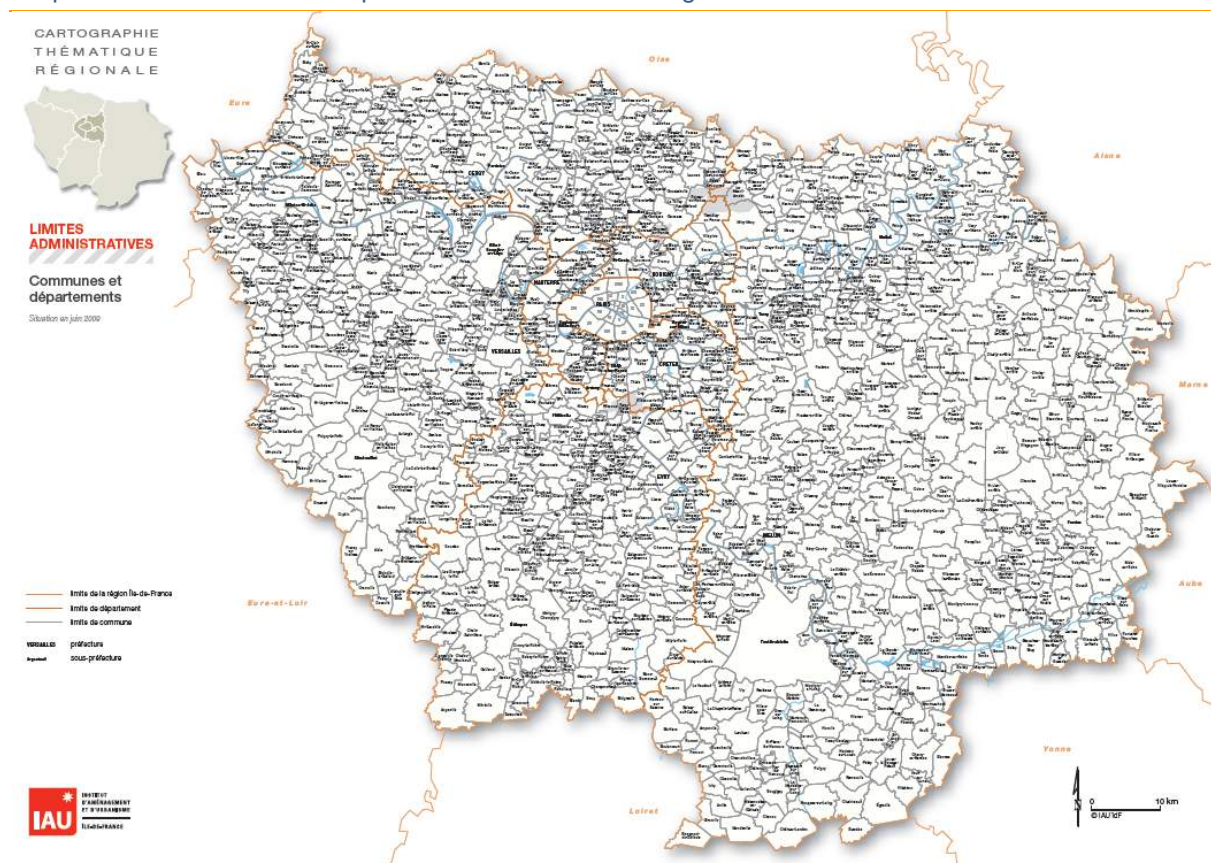
Source: Compiled by Halpern from various sources (Halpern and Le Galès 2016).

⁷ This corresponds to the inner- and the outer-city areas, as defined in D3.2 report, p.10.

⁸ This corresponds to the "Peri-urban area I" in D3.2 report (p.10), that is the area bordering the city (e.g. closest ring around city), fulfilling the criteria of high population density, high density of workplaces, high number of commuters to or from the municipalities.

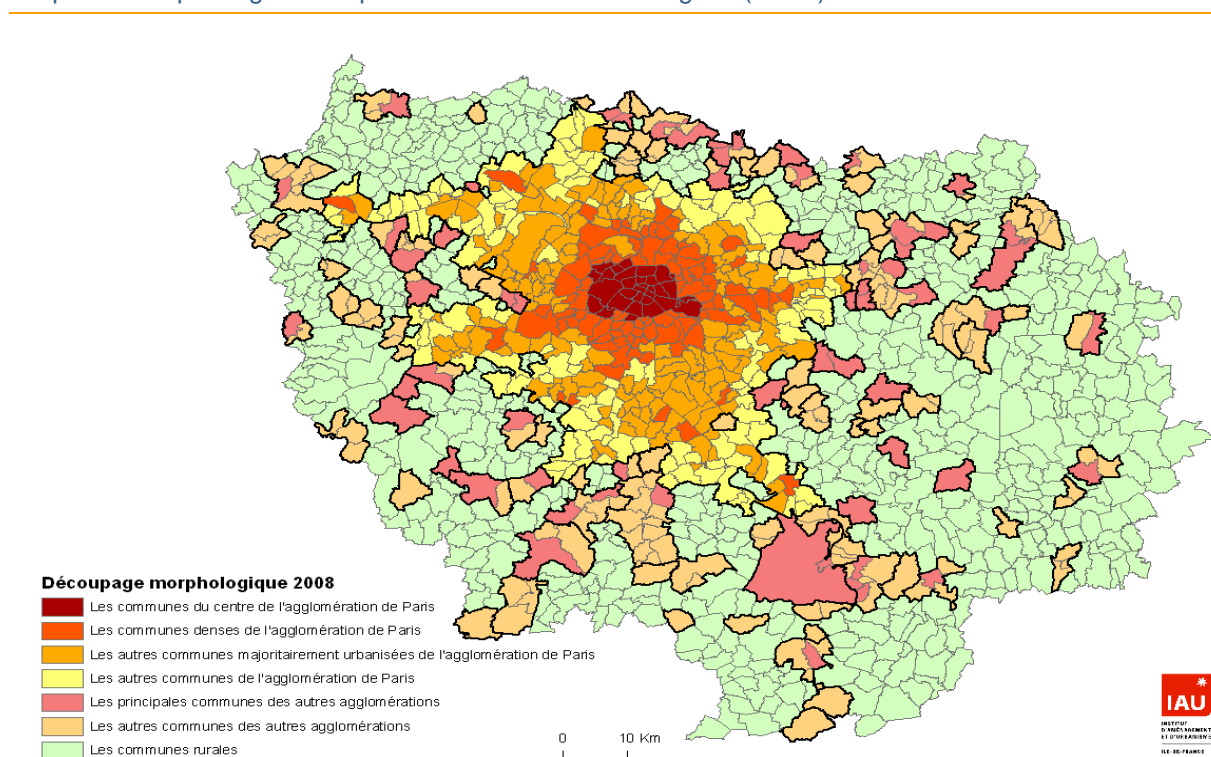
⁹ Introduced in January 1st, 2016 as a new metropolitan authority.

Map 1a. Administrative map of the Ile-de-France region



Source: Cartothèque IAU Ile-de-France, 2017.

Map 1b. Morphological map of the Ile-de-France region (2008)



Source: Cartothèque IAU Ile-de-France. Retrieved from D3.2 Paris Ile-de-France report, p.11.

3.1.3 Socio-spatial dynamics: general trends

From the socio-spatial point of view, a rapid overview of the changes observed in the Paris Ile-de-France Region highlight three general trends which are only briefly introduced here but will be further explained in later stages of the report.

First, the region witnessed continued demographic and economic growth, but these changes are unevenly spread and major economic transformations took place. The Parisian urban area grew continuously since the 1960s but at a similar rate than the national average, that is, some additional 48.000 inhabitants every year. Historically, it is particularly attractive for young adults wishing to pursue their training and start their professional career. The functional metropolitan area now spreads beyond the region's borders and demographic growth is strongest in the outer suburbs of the Paris Ile-de-France area and adjacent regions (Clanché, 2011)¹⁰.

Second, the region underwent massive socioeconomic changes. The number of jobs increased over this time period, and was first measured in the 1975 census¹¹. Since then, it is less concentrated now than in was in the late 1960s: new economic development centres emerged in the inner and outer suburban areas, but at the same time, it also went continuously sprawling further away from the core urban area, and beyond the borders of the Ile-de-France region. While Paris concentrated some 35% of the total number of jobs in the region in 1975, this reduced to below 25% after 2000. The spatial distribution of the job market and its evolution over time is considered a key dimension of urbanisation dynamics in the larger Parisian urban area and primarily driven by real estate prices for commercial and logistics spaces (Raimbault, 2014).

When it comes to degrees of spatial concentration for each type of activity, few changes were observed over time. Yet economic decentralization followed a vertical pattern and led to the development of specialised clusters. Since 1975, important changes were also witnessed in terms of the metropolitan area's structure. Industrial activities (e.g., automobile industry, mechanics and metallurgy) decreased significantly, as did the number of jobs in the field of non-market services, the building industry and the construction of electrical equipment. By contrast, an increase of jobs was witnessed in the field of services, tourism and the banking industry.

Third, the region is characterized by profound and enduring socio-economic inequalities (Préteceille, 2003). The Paris Ile-de-France region is rightly considered to be a rich region: in 2015, its GDP amounted to €650 billion euros. When compared with metropolitan France and other metropolitan areas in France, the median income of households is, respectively, 15% and 27% higher, and amounts to €1816/month (DRIEA, 2011, p.19)¹². Nevertheless, there are some major disparities within the region itself, with enduring forms of poverty and segregation that have been identified at infra-municipal levels. Some 60.3% of the working-age population is employed, and approximately one out of ten Île-de-France workers was unemployed in 2014. These inequalities can be measured in different ways: level of poverty and number of households dependent on social welfare, levels of income and spending capacity between local authorities, highly spatially concentrated forms of inequalities etc. (see above, DRIEA, 2011).

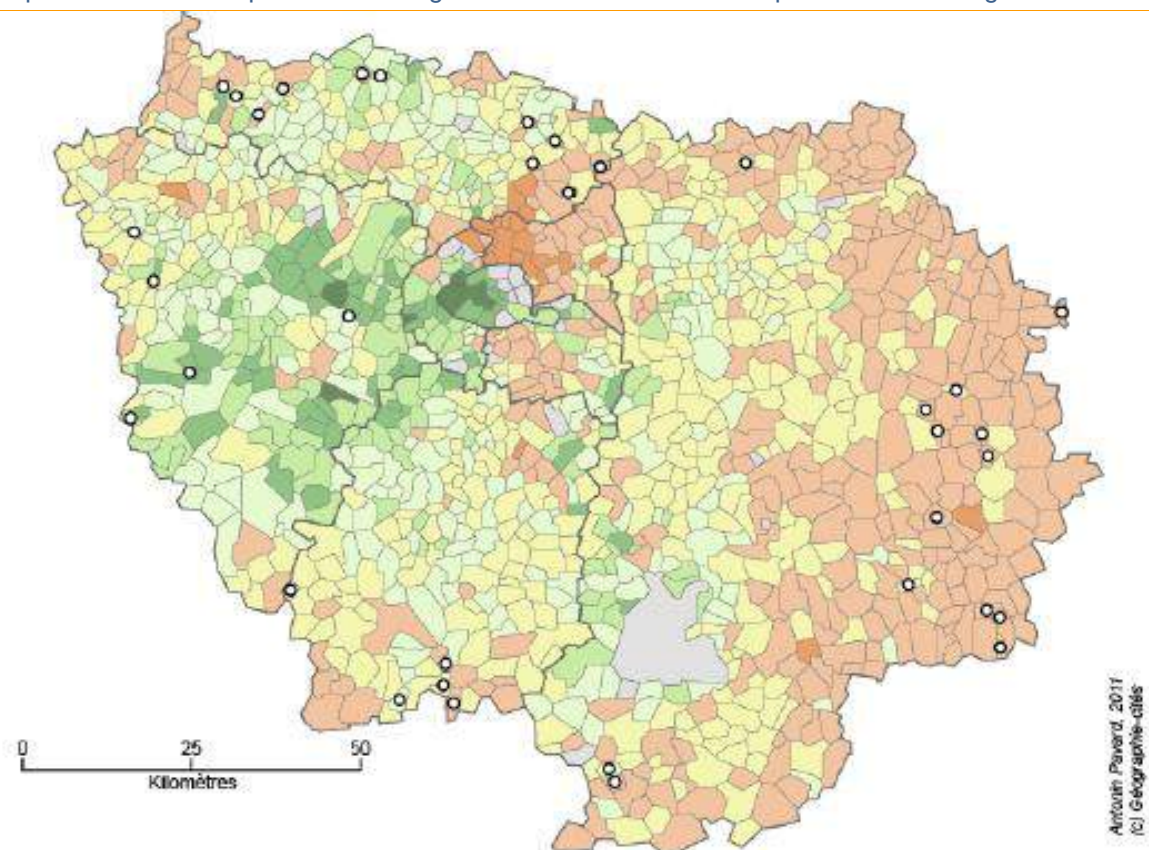
These enduring forms of socio-economic equalities challenge the heroic vision of spatial planning in the capital-city region and highlight the shortcomings of forms of governance and policy-making in this area. They have justified a number of social and political initiatives in which transport policy developments are regularly highlighted as a driver for socio-spatial inequalities as well as a consequence of a poorly inclusive policy-making system. We examine, in the following paragraphs, the specific role of urban and demographic growth as a major driver for transport policy change. Map 1c highlights the current distribution of socio-economic inequalities in the Ile-de-France region.

¹⁰ In the Départements of Oise, Eure et Eure-et-Loir, Loiret. See Clanché (2011): <https://www.insee.fr/fr/statistiques/1280958> .

¹¹ For an overview, see Gilli (2005; 2014).

¹² In most studies, the classic indicator used in order to measure households' revenues is the disposable income; that is, the income reported to the administration plus social benefits and employment allowances. All these revenues are net of direct taxes. The standard of living amounts to the disposable income per unit of consumption.

Map 1c. Income inequalities among households in the municipalities of the region as of 2007.



NB: 8 types of municipalities according to the distribution of households between income deciles in the Ile-de-France region.

Type of households overrepresented	Number of municipalities and share of households in the region
Very well-off households overrepresented	9 municipalities, 3,6% of households
Well-off households overrepresented	74 municipalities, 12,7% of households
Moderately well-off households overrepresented	142 municipalities, 13,8% of households
Upper middle class overrepresented	268 municipalities, 8,2% of households
Middle class overrepresented	408 municipalities, 18,2% of households
No significant overrepresentation	27 municipalities, 13,4% of households
Lower middle class overrepresented	348 municipalities, 22,7% of households
Poorest households overrepresented	23 municipalities, 6,7% of households
o Less than 50 households	

Source: Antonin Pavard, 2011; © Géographie-cités. Retrieved from Rapport DRIEA, 2011, p. 87, translated by the authors.

3.2 Planning urban and demographic growth

Throughout the period considered in CREATE, controlling demographic and urban growth in the capital-city region while at the same ensuring its attractiveness has been considered an overarching goal of policymakers. It is a major obsession among French political elites and in a country in which rural areas and interests are overrepresented in the national politico-institutional system. In this context, all issues related to urban and spatial planning in the region are primarily shaped by national economic development and policy goals, and have justified, until today, strong and direct state interventionism in the capital-city region.

We introduce in this section, a selective list of the most important spatial planning documents that were adopted by national and/or regional authorities in order to structure the development of the capital-city region (Annex 1).

The analysis shows: 1) remarkably stable spatial planning policy objectives throughout the period considered in CREATE, and 2) differentiated capacities to implement and enforce these policy objectives over time and across the region. This holds some important consequences for evolving mobility patterns in the region.

3.2.1 Polycentrism *versus* diffuse urban sprawl (1952-1994)

As of 1960, rapid, and partially uncontrolled urban growth contributed, in combination with rapid socio-economic changes, to the profound transformation of the Parisian region both within and outside the city of Paris. Urban and spatial planning objectives were formalized as part of the 1965 Strategic document for urban and spatial planning (SDAU). The SDAU, which remained the main planning document for the Parisian region until 1994¹³, included long-term policy goals and demographic projections that foresaw an increase up to 14 million inhabitants by the year 2000 that is, an additional 7 to 8 million inhabitants (see Map 2a).

The 1965 SDAU as an attempt for long-term spatial planning in the region.

The SDAU recommended that a polycentric structure should be encouraged through the development of five New Towns (known as *villes nouvelles*) in clear reference to the British experience (Fouchier, 1999). By concentrating a large number of urban functions (e.g., housing, jobs, retailing, leisure activities, etc.) new towns were considered a major planning tool against urban sprawl. They also aimed at structuring the decentralization of public services and business areas (see Gilli 2005, above). Five new towns were planned some 30 kilometres away from the city of Paris and on both sides of the Seine River (see Map 2b)¹⁴. In the capital-city region, this was done under the State's direct leadership and in each new town, a state-led development company was introduced¹⁵ in order to oversee their effective planning and to avoid deviations from original plans.

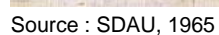
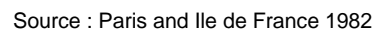
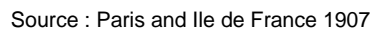
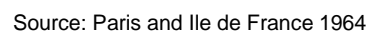
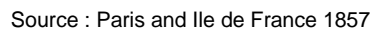
In addition to new towns, the development of the business district of La Défense as of 1969 is also considered one of the most important urban development projects during this period. Accessibility to and from these new urban centers justified the development of a dense network of transport infrastructure, including a rapid transit rail-based system (RER, see below).

Notwithstanding the efforts to constrain urban sprawl, a large number of individual one-household residential units were built outside the new towns between 1965 and 1975. These developments were driven by the rising demands of a new middle-class generation, but other factors account for the development of this type of private property as well: lower real estate costs, advantageous loans from the banking system and a number of fiscal incentives in the housing policy domain (Baccaini, 2009; Callen 2011). Such contradictions in the way urban development objectives were implemented led to dramatic changes in the outer area of the Parisian region: small villages that were located some 30 to 50km from Paris witnessed rapid population growth, and at the regional level, there was a growing mismatch between the location of housing on the one hand, and that of business areas, public services and transport infrastructures on the other hand.

¹³ Some minor adjustments were made during the 1976 revision.

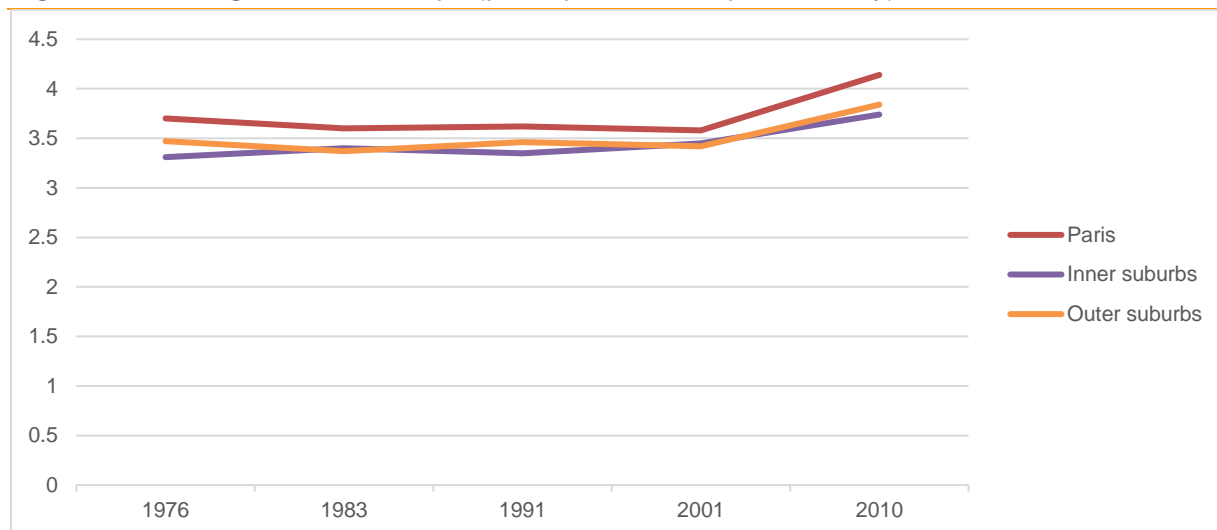
¹⁴ Marne la vallée, Cergy Pontoise, Saint-Quentin-en-Yvelines, Sénart, Evry.

¹⁵ Etablissement Public d'Aménagement - EPA



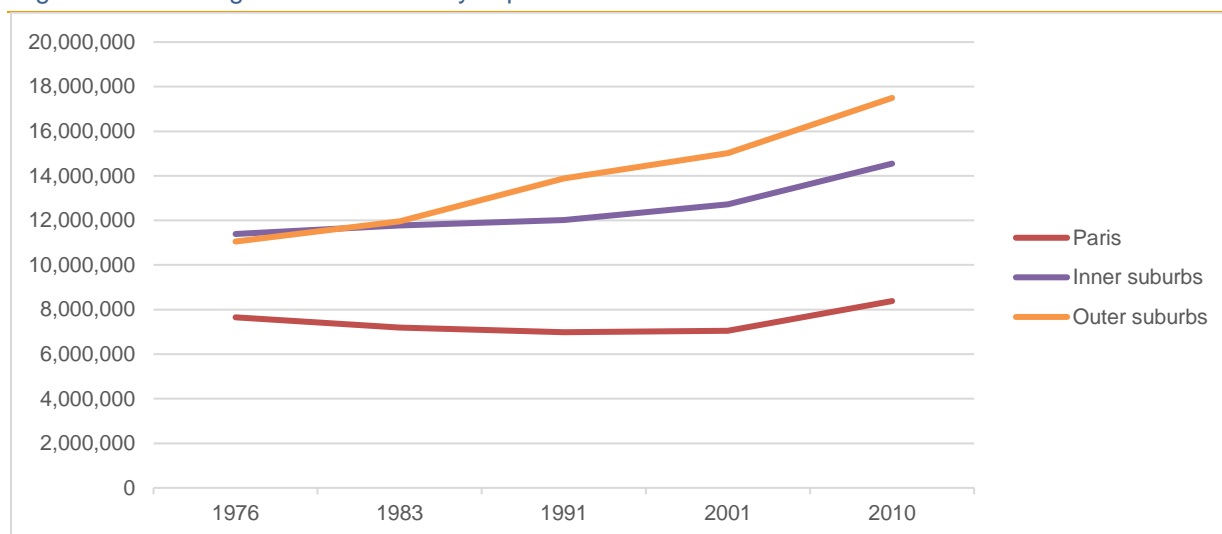
which relied on a dense public transport network, the inner suburbs and emerging outer suburbs were notoriously under-equipped and dependent upon car use (Orfeuill and Wiel, 2012).¹⁶ In addition to centre-periphery commuting traffic, the development of the La Défense business district also induced additional commuting flows. Together, this contributed to growing political profile of transport issues.

Figure 2a. Average number of trips (per tripmaker and per workday)¹⁷



Fields: Ile-de-France residents aged 6 and over; Travels within the Ile-de-France region; Years 1976, 1983, 1991, 2001, 2010.
Source: EGT 1976-2010 STIF-OMNIL-DRIEA - Traitements IAU-IdF

Figure 2b. Average number of daily trips

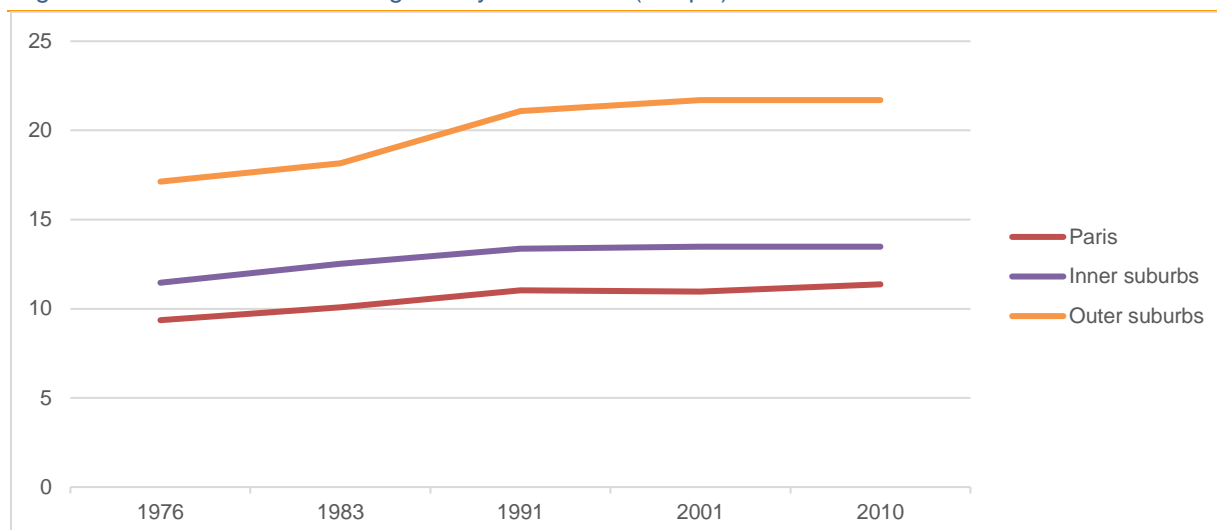


Fields: Ile-de-France residents aged 6 and over; Travels within the Ile-de-France region; Years 1976, 1983, 1991, 2001, 2010.
Source: EGT 1976-2010 STIF-OMNIL-DRIEA - Traitements IAU-IdF

¹⁶ The Paris Metro only served the City of Paris and operated with pre-war rolling stock, only 3 km of additional Metro lines were built between 1945 and the late 1960s. Suburban railway services remained limited, and the lack of connection between public transport networks made transfers extremely complicated. Several road projects were postponed.

¹⁷ We are grateful to IAU for helping us to adapt the figures that were produced for the D3.2 report.

Figure 2c. Evolution of average daily distances (scope)



Fields: Ile-de-France residents aged 6 and over; Travels within the Ile-de-France region; Years 1976, 1983, 1991, 2001, 2010.
Source: EGT 1976-2010 STIF-OMNIL-DRIEA - Traitements IAU-IdF

Urban growth overflows spatial planning objectives (1976-1994).

Both demographic growth and urbanization trends justified the revision of the SDAU in 1976. While spatial planning goals remained unchanged, this revised spatial planning document primarily aimed at strengthening the development of polycentrism through a series of concrete policy measures. This was achieved by strengthening new urban nodes in the suburbs, including in new towns but not exclusively.

National investments and policies also shaped the development of new business centres, as well as their spatial distribution. Only 11,5% of urban growth – and not 24%, as originally planned – was absorbed by the new towns (Larroque et al, 2002, p.269). Similarly, new towns only absorbed part of the total population growth in the region - 44% according to Davezies (2004) (see also Imbert et al., 2011; Table 2) and from the development of new economic activities outside Paris¹⁸ (DREIF, 2002). Those new towns that attracted a largest share of new residents and jobs were those in which the level of concentration of urban functions was highest, most notably public services.

Table 2. The evolution of population of new towns since 1968

Census year	Population	Share in total population of IDF region (%)
1968	178 000	1.9
1975	274 000	2.9
1982	444 000	4.5
1990	654 000	6.1
1999	741 000	6.8
2007	805 000	6.9

Sources : Insee, R.G.P. 1968, 1975, 1982, 1990, 1999 ; RP 2007 (exploitations principales). Adapted from Imbert et al., 2011.

Outside new towns, the rapid development of new business centres (La Défense, Paris-Charles de Gaulle airport, etc.) attracted an increasing number of new jobs and businesses. Small and rural municipalities in the outer suburbs were also deeply transformed by diffuse urban sprawl and the arrival of new inhabitants and businesses in search of lower real estate prices and more advantageous loans (see also D3.2 report, p. 21). Over time, both planned and unplanned urban development contributed to deepening the unequal spatial distribution of housing and workplaces. This benefited the south-western and western side of the capital-city region, where a large share of high-end tertiary and industrial activities, together with research and development activities, are concentrated, whereas the dismantling of industrial activities and the construction of large social housing estates are particularly concentrated in the northern and north-eastern side.

¹⁸ The overall number of jobs within the 5 new towns moved from 92.270 in 1975 to 160.596 in 1982 and 274.870 in 1990 (DREIF 2002)

By contrast to the changes underway in the region, the number of residents continued to decrease in the city of Paris: between 1975 and 1994, the city lost 400.000 inhabitants (Cottour *et al* 2008). Planning documents elaborated under the leadership of central government¹⁹ acknowledge these demographic and economic changes. Housing patterns and the housing market structure exacerbated contrasting dynamics between professional and intellectual categories and working-class categories (see also Desjardins 2007. 2011). Employment decreases also as a result of the reorganization of its labour market structure: the number of unskilled jobs in the service sector decreases while the number of managerial, professional and intellectual jobs increases, firms and economic activities in need of more affordable space moved towards the outskirts of the City centre or the inner suburbs area (see Figure 1b, D3.2 report, p.20). In order to address these changes, the 1977 planning documents seek to enhance the quality of urban spaces through the development of public parks (e.g., Georges Brassens, Belleville, André Citroën, etc.) and a pedestrian area in the city centre.

Impact on mobility patterns in the region.

Urbanization dynamics, in combination with the spatial distribution of population and economic growth, have shaped mobility patterns in the region. As both polycentric and diffuse urban sprawl increased, transport patterns and behaviours permanently transformed in the capital-city region. Car use increased within the region²⁰ as a result of growing demand for transport between new urban centres outside the city of Paris and because of the above-mentioned disconnect between housing and employment. Due to the centralization of the public transport network, which forced all east-to-west commuters to travel through the city of Paris, existing and new transport services and infrastructure were saturated²¹.

By contrast, demographic and economic trends within the city of Paris led to a slight decrease of daily travel within the city and between the city and the *petite couronne* (see Figures 2a, b, c & d) (IAU, 2010). In the late 1980s, 60% of travel in the Paris Ile-de-France region was made by car as opposed to 31% by public transport; and when looking at daily trips made outside Paris, 75% were made by car. By contrast, 61% of daily trips made within the city of Paris and 59% of daily trips made between Paris and the *petite couronne* were made by public transport (Prefecture Ile de France, DREIF, 1988).

3.2.2 Competing spatial planning goals in a context of weak political leadership (1994-2013)

The impact of demographic and urbanization dynamics on housing availability, transport and the job market contributes to the elevation of regional planning back onto the national agenda in the late 1980s in a changed institutional environment. Since then, spatial planning in the capital-city region has been shaped by a continuous struggle for leadership between the state and subnational levels of government, which accounts for remaining contradictions in the definition and implementation of policy investments and priorities.

The elaboration of the 1994 Strategic planning document (SDRIF) under the State's leadership aimed at reasserting the capital region's centrality as a national and European transport hub²². With a clear focus on economic development and the strengthening of the capital-city region's competitiveness vis à vis other large metropolitan areas worldwide, this strategic planning document highlighted the need 1) to reorganize the inner suburbs and 2) to contain and structure urban growth in the outer suburbs.

Priority was given to densifying clearly designated areas, including new towns, while preserving agricultural land on the outskirts of the region. It also addresses issues related to socio-economic inequalities within the region by strengthening existing or developing new large projects in the eastern and north-eastern part of the region, such as Eurodisney in Marne-La Vallée (see Map 3a), or recognising the Paris Charles-de-Gaulle

¹⁹ The 1977 Paris Land use Plan (Plan d'Occupation de Sols de Paris) and the 1977 Paris Urban Development Plan (Schéma Directeur d'Urbanisme et d'Aménagement de Paris).

²⁰ The number of motorized movements in the region increases from 17 million in 1970 to 19 million in 1983 (Cottour, 2008).

²¹ See Maps 7a, 7b and 7c below, section 4, for an overview of the RER network evolution since 1977.

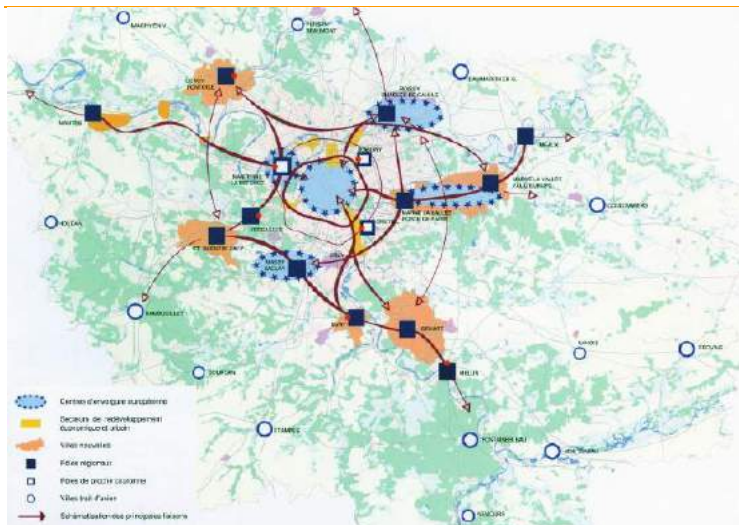
²² This was the case of the 3rd State-Region Contract (1994-2000) and the 1994 SDRIF.

airport as the main national hub. In this context, housing and transport were confirmed as critical drivers in order to further strengthen polycentrism in the region and transposed into a series of policy measures and infrastructure projects (see section 2). In the case of transport, new TGV stations were developed outside of Paris, at Marne-La Vallée and at Charles-de-Gaulle airport, in order to ensure connexions with the RER network in fast developing areas of the outer suburbs. Priority was also given to the development of tangential transport infrastructure in order to divert traffic flows from the Centre of Paris and to address transport demands outside Paris.

As of 2004, the revision of the SDRIF was led by the regional government in close cooperation with IAU. Its elaboration was driven by a more collaborative approach to policy design and planning. Unlike the 1994 SDRIF, this new planning document was indented as a strategic planning document and sought to increase quality of life within the region through sustainable regional planning goals. Drawing on the regional census survey, demographic estimates diverged sensibly from those included in the SDRIF 1994 and foresaw an increase of an additional one million of households by 2015, while the former SDRIF sought to contain this growth under 870.000 additional households. It acknowledged that present forms of urban development at the time resulted from two contrasting urbanization dynamics that had shaped the region's development since the mid 1980s: extreme levels of density in the core urban area on the one hand, and the steady growth of the functional metropolitan area on the other hand (See Map 3b).

Discussions over the new SDRIF also led to a critical assessment of the legacy of the 1965 SDAU; the way it had been implemented and its long-term effects were critically reviewed. Three issues were considered particularly pressing during discussions over the proposed SDRIF. A first matter of concern was the worsening of employment and living conditions in ageing housing estates and poorly connected areas.²³ Second, diffuse urban sprawl continued shaping urbanisation dynamics outside the region's borders and the search for lower real-estate and housing prices for both commercial activities and housing²⁴. While the amount of agricultural land and recreational areas continued to decrease, commuting distances increased and contributed to increasing car dependency for a large share of the population living and working in the outer suburbs area (Cabinet Auxilia, 2014) and for daily commuters from neighbouring regions.

Map 3a. Strengthening polycentrism in the region as in the 1994 SDRIF.

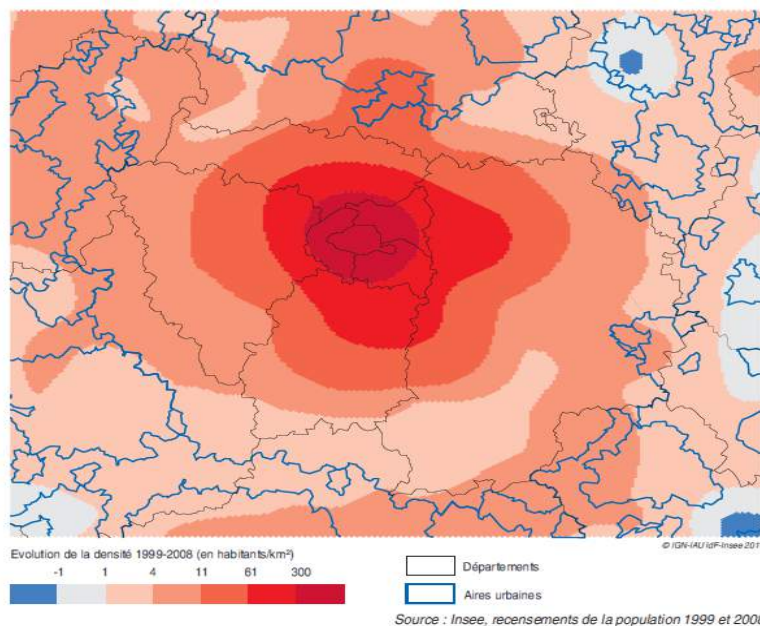


Source: SDRIF 1994, retrieved from Cottour, 2008, p.122.

²³ This in turn was seen as a trigger for successive waves of riots in the suburbs of large metropolitan regions, including the Ile-de-France region. Among other explanatory factors, including the so-called French "assimilatory model", ethnic discrimination and the deterioration of relations between the police and urban male youth as a result of the introduction of a "law and order approach". For an overview, see Jobard (2009) and Garbaye (2014).

²⁴ See the critical discussion about the mismatch between the sustainable city model as depicted in spatial planning documents and its effective implementation in the Ile-de-France region (Desjardins 2007; 2008).

Map 3b. 20 years of urbanization in the Paris-Ile-de-France Region measured through the evolution of density (residents / km²) (1999-2008)



Source: INSEE, Census data 1999 and 2008

Third, the number of housing units produced annually between 1994 and 2013 – an average of 40.000 – is considered today as having been insufficient to meet rising demands, while at the same time, triggering major political debates regarding the location and type of housing. In combination with debates about housing, transport – accessibility, connectivity – is considered another area of key concern. On average only a quarter of the economically active population work and live in the same municipality, while another quarter works in an area close by (IAU, 2013). But there are some significant differences between categories of the working population and between areas, with certain municipalities containing more jobs than inhabitants, higher levels of unemployment, or a concentration of specific jobs. Over time, transport policy choices combined with evolving real-estate prices led to circumstances that systematically favoured managerial staff over employees and workers (Desjardins and Drevelle, 2014). This also calls into question the distribution of public transport infrastructures within the region, and the extent to which such socio-spatial mismatch accounts from growing car dependency in the outer suburbs. Among those households living outside the city of Paris, 21% do not own a car and levels of motorization are lowest amongst low-income social categories²⁵. Such disparities are further increased when considering the spatial distribution of the public transport offer during the day and, in the context of the capital-city region, mobility is often identified as both a reflecting and driving social and spatial segregation (Le Roux et al., 2017).

The proposed SDRIF, published in 2008, aimed at increasing support within the region in favour of a regional development model conducive to increased liveability and quality of life for its residents while at the same time seeking to increase levels of density in the core urban area. This included clear objectives to limit urban sprawl and densify existing urban centres or urbanizing those areas located closest to existing and planned transport infrastructures. These objectives proved particularly controversial during negotiations between the regional authorities and other institutional and economic actors, including the state and newly elected President Sarkozy. Following a conflict of unprecedented magnitude between the state and the region²⁶, a revised version or so called SDRIF 2030 was formally adopted in 2013.

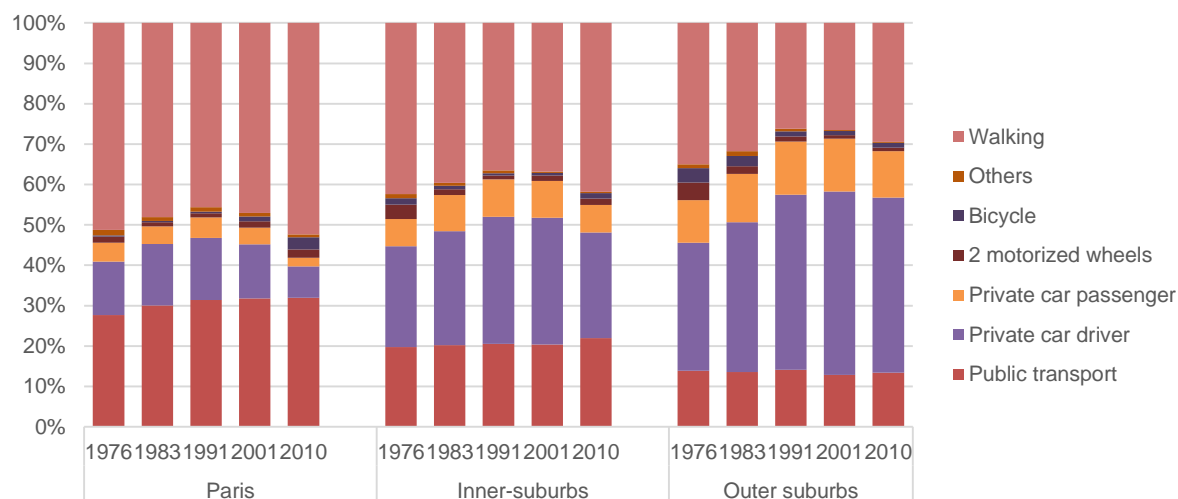
This strategic planning document reiterates the same concerns as its predecessors, while adding the need to strengthen the competitiveness of the French capital-city region (see Map 3c). Urban and infrastructural

²⁵ The strong relationship between access to mobility and to the job market in the Ile-de-France region was recently confirmed in the work done by Orfeuill (2012) and at the national level (Cabinet Auxilia, 2013).

²⁶ See Section 4.3 for more details.

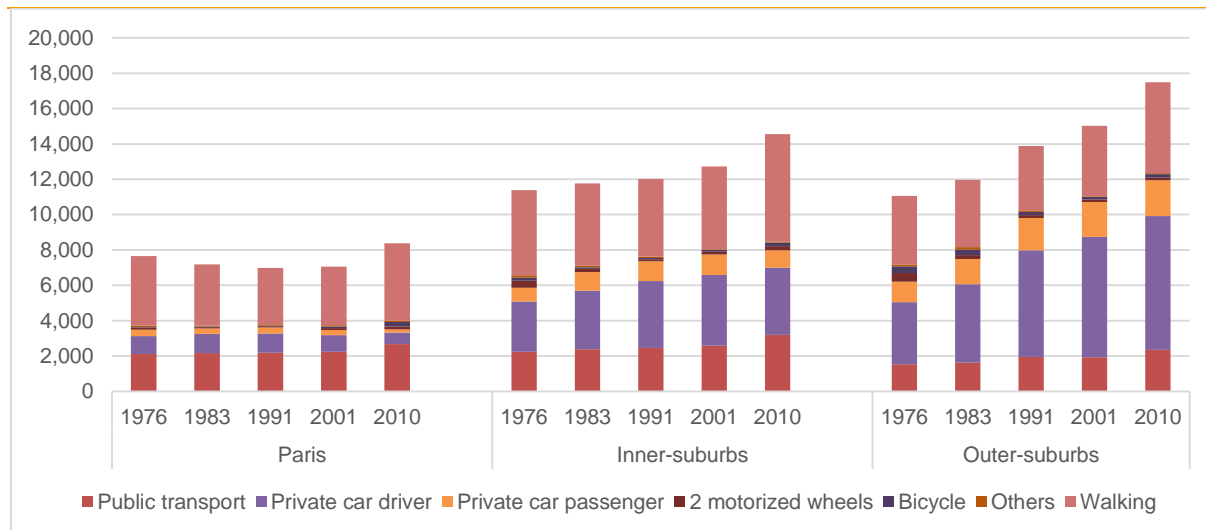
development goals draw on population growth estimates of between 0,8 and 1,8 million additional inhabitants by 2030 (SDRIF 2030, 2013). Housing and transport are confirmed as major tools in order to ensure both economic competitiveness and the reduction of socio-spatial inequalities. The yearly production of 70.000 housing units in designated areas aims at increasing housing affordability in spite of rising real estate prices while at the same time reducing the spatial mismatch between the location of housing and jobs. Last but not least, rising public transport demand within the region is also addressed in the SDRIF by modernizing existing infrastructure and developing new public transport infrastructure as part of the “Grand Paris Express” project. Although the 1994 SDRIF already briefly mentioned local transport infrastructure and services, the SDRIF 2030 is the first planning document bringing this policy objective to the same level as the need to develop rapid transit transport systems.

Figure 2d. Evolution of modal share by area of residence



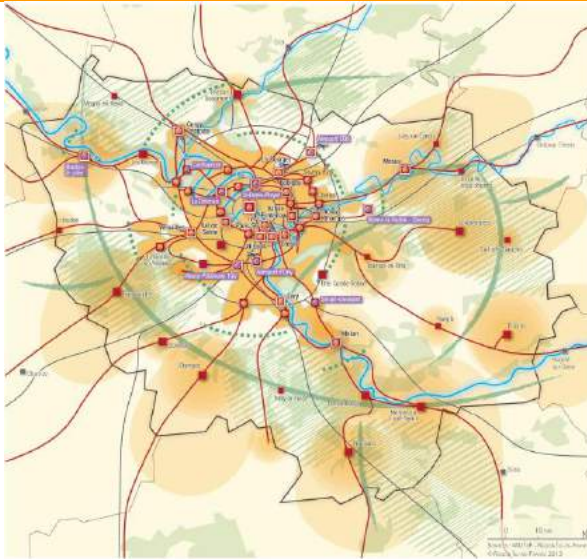
Fields: Ile-de-France residents aged 6 and over; Travels within the Ile-de-France region; Years 1976, 1983, 1991, 2001, 2010.
Source: EGT 1976-2010 STIF-OMNIL-DRIEA - Traitements IAU-IdF

Figure 2e. Evolution of travel volumes by mode and area of residence



Fields: Ile-de-France residents aged 6 and over; Travels within the Ile-de-France region; Years 1976, 1983, 1991, 2001, 2010.
Source: EGT 1976-2010 STIF-OMNIL-DRIEA - Traitements IAU-IdF

Map 3c. Spatial planning as a project: the SDRIF 2030.



Source: IAU. Retrieved from SDRIF 2030, 2013, p.49.

Consideration of the long-term evolution of spatial planning objectives in the Paris-Ile-de-France points to their rather limited role in shaping demographic and urban growth. In order to fully understand the profound changes that took place in the region, the specific role of political and institutional factors also needs to be addressed.

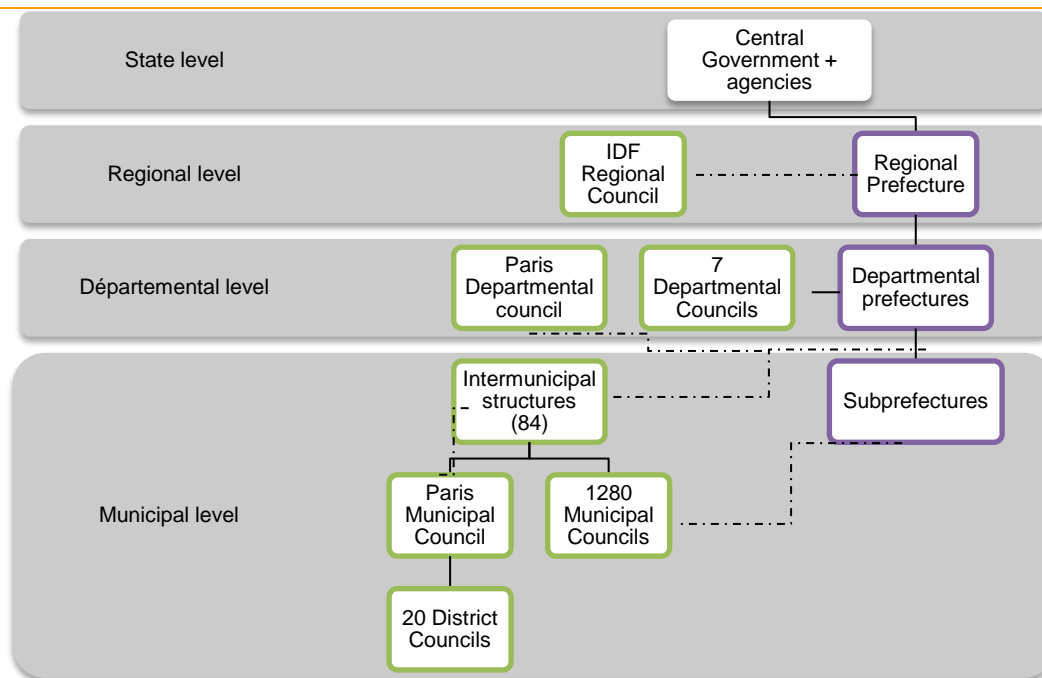
3.3 Competing political and institutional leadership: a three-level game

The governance of the Paris region has long been considered an exception in the French politico-administrative system (Prat, 2012). Both Paris and the Region were under direct control of the State. During the time period considered in CREATE, profound changes were observed in the governance and administrative organization of the capital-city region. A regional administrative entity, the *Région Parisienne*, was established in 1956 in order to plan future urban development, and a strategy of “divide and rule” was developed by state representatives in the region to the detriment of local authorities. In parallel to this state-led form of urban development, decentralization and administrative reforms led to profound institutional changes: the democratic election of political authorities and their strengthening and growing autonomy in a number of policy domains.

Since then, evolving relationships between levels of government have been structured by competitive strategies and unstable forms of governance throughout the period under study in CREATE. This is explained in more detail in the following section by looking successively at the state, the city of Paris and the region.

A selective list of major administrative and decentralization reforms in the Paris region is available in Annex 2, and Figure 3 provides an overview of current politico-administrative arrangements in the capital-city-region.

Figure 3. Politico-administrative arrangements (before 2016).



Green: territorial communities (decentralization reforms)

Purple: central and decentralized state administration (deconcentration reforms)²⁷

3.3.1 The national state as a key player in the governance of the capital-city region.

Following the election of a Gaullist government in 1959, a new administrative entity – the Paris District (District de Paris) - led by a State-appointed representative was introduced as the authority responsible for coordinating state policies in the capital-city region²⁸. President De Gaulle nominated Paul Delouvrier, a trusted senior civil servant, as General Delegate (1961-1969). His main task was to design and implement the 1965 SDAU, and in order to strengthen this administration's authority, it benefited from a transfer of powers in urban planning that were formerly exerted by subnational authorities (départements)²⁹.

The introduction of the Paris District also sought to overcome local political interests and institutional fragmentation in order to effectively structure spatial and urban planning in the region (Cottour, Lelarge 2008). It overtook all pre-existing municipal powers in the field of urban and infrastructural planning within the Région Parisienne. Through a policy of « divide and rule », this powerful decentralized state administration presided over local authorities (municipalities and départements), which lacked policy resources and expertise. At the same time as the District administration, a council was introduced in order to represent local political interests. It was composed of local elected officials, of which half are nominated by the state and half are elected by local government assemblies.³⁰ In addition, a body composed by representatives from the business sector and unions was created with the stated aim to counterbalance political dynamics during policy-making³¹. Additional technical

²⁷ In the French context, deconcentrating reforms refers to the reorganization of the state administration at subnational administrative levels. It should not be confused with decentralization reforms, which refer to the transfer of powers to local authorities.

²⁸ The Paris District was established by law in 1961.

²⁹ The départements of Seine-Et-Oise, Seine-et-Marne et Seine.

³⁰ 28 Mayors or departmental councillors were represented in the Paris District council.

³¹ The Economic and social consultative committee (Comité Consultatif Economique et Social, CCES) is the precursor of today's Regional Economic, Social and Environmental Council (Conseil Economique, Social et Environnemental, CESER) which advises

expertise was also provided by the Institute for spatial and urban planning in the Parisian Region³², which was created in 1960 in order to provide technical knowledge and expertise during the development and assessment of strategic regional plans.

An additional institutional reform was introduced in 1964, in order to increase the leadership of the Paris District from both the institutional and the administrative points of view. A total of 7 départements – instead of 2 – were created in addition to the city of Paris, and remained in place until the creation of the Grand Paris metropolitan government in January 2016.³³ The District was replaced by the Paris Region, an administrative authority that enjoyed the status of a regional prefecture, similarly to the changes underway in the rest of the country. Paul Delouvrier was nominated as the region's first prefect, thus combining two sources of power: that of the Paris district with those of the main State's representative in the region, and as such, the legitimate authority for coordinating state policies and agencies³⁴.

Notwithstanding the appearance of coherence, the system was overruled by political competition between the conservative Gaullist regime and the Communist Party. This political competition largely dominated municipalities in the so-called “Red Suburbs” (Banlieue rouge) in the inner suburbs of the Paris region, where industrial activities and the working class were located (see Map 4a). Within the state apparatus itself, powerful administrations and elite groups, affiliated with the Grands Corps, the most prestigious status groups within the civil service, competed for leadership over governance of regional affairs (Estèbe and Le Galès, 2003).³⁵ Specialized state agencies were created in order to run important services at the regional level, including transport. The state apparatus is divided between the powerful ministry of infrastructures³⁶ and the equivalent of the Home Office³⁷ both claiming for leadership over local policy-making and implementation, including in the capital city-region.

and assesses the regional council through the provision of policy knowledge in those areas in which the region has specific competences.

³² Institut d'Aménagement et d'Urbanisme de la Région Parisienne – IAURP. It was renamed as IAU in 1976 following the creation of the Ile de France region (Law n° 76-394, 6 may 1976).

³³ Hauts-de-Seine, Seine-Saint-Denis, Val-de-Marne, Essonne, Yvelines, Val-d'Oise, Seine-et-Marne.

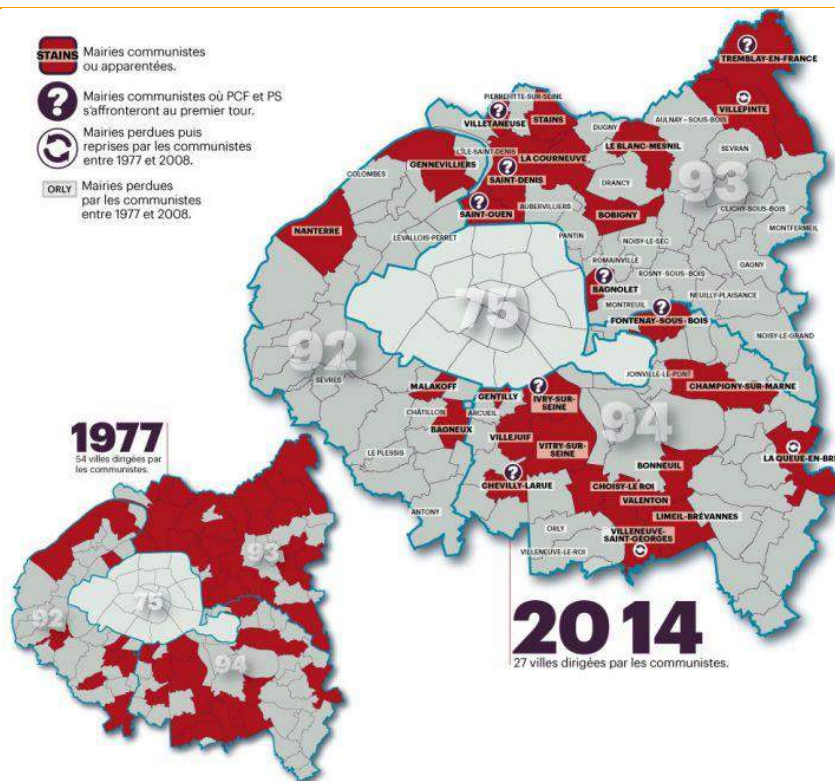
³⁴ The 1967 Land-use law and the joint 1969 application decree completed this series of institutional reforms.

³⁵ Working across state departments, state-owned transport companies and in the private sector, state elites were trained in prestigious grandes écoles - as an alternative to universities – such as the Ecole des Ponts-et-Chaussées (School for Bridges and Roads), which was created in 1747 in order to train competent officers for bridges and roads. Over their professional careers, former students remain members of what is commonly known as grands corps, i.e. the most prestigious status groups within the civil service, and long possessed – and to a large extent still do – a monopoly over the production of knowledge on and for policies.

³⁶ Ministère des Ponts et Chaussées, then Ministère de l'Équipement. Since 2007, it merged with other state administrations as part of a large Ministry for Sustainable Development.

³⁷ Ministère de l'Intérieur

Map 4a. The Parisian “Red belt” in 1977 and 2014.



Source: ASK media, published in Le Parisien 27/02/2014, available at: http://s1.lprs1.fr/images/2014/02/27/3628391_banlieues-rouges-v4ok.jpg

This decade-long series of institutional and administrative reforms (see Annex 2) confirmed the specific status of the capital-city region and directly contributed to the emergence of a state-led form of regional governance. Despite continued resistance, the State confirmed its critical – and direct – role in shaping policy choices and policy processes. Powers were reluctantly devolved to local authorities: decentralization in the Ile-de-France regions was both slower and less extensive than in the rest of the country. Despite successive decentralization reforms, the institutional and administrative setting in the Ile-de-France region differs from that of other regions in France due to a combination of stronger State influence and heightened competition between political, administrative and technical bodies.

In this new institutional and political context, the city of Paris did, however, retain a specific status and somewhat escaped the Paris District's authority whose main focus was on the suburbs.

3.3.2 The city of Paris: a powerful player with a special status.

In spite of successive attempts to strengthen polycentrism, Paris remains the undisputed centre of the capital-city region and plays a critical function in national economic development as its main hub. The way it is governed as well as its institutional role has evolved considerably since 1960 and has contributed to the continued strengthening of its municipal powers and autonomy. The city's policy choices have competed, on a number of occasions, with those introduced at state or regional levels. The city's ambiguous status is reflected in spatial planning documents.

Re-introducing the mayoral function in Paris.

Paris enjoyed little autonomy and remained an exception in the French institutional context until 1975³⁸. Although the third Republic continuously reinforced the political autonomy of the 36.000 municipalities (since 1884), Paris City Council, the place of 100 years of revolutions (1789, 1830, 1848, 1870), was not to be trusted and its government was considered a state issue (Kuhlman, 2007). Lasting well into the 1970s, the centralist organisation of the city government perfectly fitted into the French tradition of a hierarchic state-dominated administration, which was used and developed for guaranteeing central state predominance and power. The city was governed directly by state representatives, i.e. the prefect, as part of the “two-prefect system”: the *préfet de la Seine and of Paris* held the mayor’s functions whereas the *préfet de Police* was in charge of enforcing law and order. Although a weak sort of advisory council enjoyed a double political function - a municipal and a départemental function -, since 1968³⁹, the city of Paris’ government remains characterized, until 1975, by the total lack of local self-administration and the direct control exerted by the central state over policy issues and local matters.

Since the re-establishment of the municipality of Paris by law in 1975 and the election of its mayor in 1977, continued decentralization reforms (see Annex 2), together with the direct election of the Paris mayor and the strategic use of policy resources - money, expertise, administration – contributed to the formidable strengthening of the city’s political power and legitimacy (Kuhlmann, Wollman, 2007). Today, it is a powerful political organization with major resources and strong political capacity to negotiate with the state and with private companies⁴⁰. These resources also account for the city’s ability to develop its own policy initiatives and projects in a number of policy areas. Such a change did not happen overnight; it was incremental and characterized by continued institutional and political struggles. It follows a different rhythm and path that the changes underway in the rest of the country.

The mayor of Paris is considered a prominent political figure at the national level and continuously sought to increase their power and governing capacity vis-à-vis the French State. The debate about the mayoral function in Paris⁴¹ was pushed forward by President Giscard d’Estaing (centrist party, 1974-1981). This institutional reform was originally intended as a way to durably strengthen the centrists’ leadership over one of the Gaullist Party’s strongholds (O’Leary, 1987, p.381), thus explaining the preference given to a “strong mayor form of local government”. Indeed, it took place in the context of strong political competition with the Gaullist party (RPR) and its leader, Jacques Chirac, who served as Giscard’s first Prime minister (1974-1976) and was elected Mayor of Paris in 1977 (see Table 3). In its double capacity as mayor and chief executive of the departmental assembly, the Mayor of Paris enjoys more powers than its counterparts in other French municipalities. Following the 1982 decentralization reforms⁴², the city of Paris extended its autonomy across a large number of policy areas, including urban development, and was able to develop its own policy initiatives and projects (Urfalino, 1994; Zittoun 2007).

Table 3. Successive mayors of Paris.

	1977-1983	1983-1989	1989-1995	1995-2001	2001-2008	2008-2014	Since 2014
Ruling Mayor	Jacques Chirac	Jacques Chirac	Jacques Chirac	Jean Tiberi	Bertrand Delanoé	Bertrand Delanoé	Anne Hidalgo
Political majority / coalition	RPR-UDR	RPR-UDR	RPR-UDR	RPR-UDF	Red-Green coalition (PS, PCF, Verts)	Red-Green coalition (PS, PCF, Verts)	Red-Green coalition (PS, PCF, Verts)

³⁸ For an extensive review, see the recent parliamentary report (Darnaud, 2016): http://www.senat.fr/rap/16-082/16-082_mono.html#toc21

³⁹ Law n°64-707, July 10, 1964

⁴⁰ See the work undertaken as part of the WHIG project on « Governing Paris » (Le Galès, Prat, forthcoming).

⁴¹ Law n° 75-1331 December 31, 1975 portant réforme du régime administratif de la ville de Paris. A number of similarities can be found in the debates about the mayoral function in London, and the Blair-Livingstone rivalry.

⁴² These reforms which were introduced under President Mitterrand and the left coalition, and considerably enhanced local autonomy throughout the country.

An ambiguous status within the capital-city region

To a large extent, politico-administrative arrangements in Paris are characterized by a strong hierarchical organizational structure and are often referred to as a “centralised unitary city-government” (Röber, Schröter 2006). The city’s administration is organized around strong directorates (Directions Centrales) and specialized agencies, including its own urban planning (APUR) and real estate development (AFTRP) agencies⁴³, which still constitutes the city’s main source of expertise in a number of policy areas⁴⁴. Some of these directorates have established their own “deconcentrated” apparatus at the district level⁴⁵. The role played by these skilled administrative bodies in policy processes, including agenda-setting, policy-making and implementation, is critical, and they often are considered a major enabler and/or veto player when it comes to explaining policy change in Paris. To a large extent, Chirac’s personal style of governing between 1977 and 1995 contributed to strengthening the role of the city’s administration. By developing close relationships with the municipal administration (Haegel, 1994), Chirac drew upon this powerful stakeholder’s support in order to strengthen the mayor’s leadership and promote change in a number of policy areas at a time when the mayoral function and the city’s political institutions remained weak. Over time, the development of such close relationships also had some perverse effects, including the development of clientelistic arrangements in a number of policy areas (e.g., waste management) and, in some cases, to proven cases of corruption and fictitious employment charges. This form of political arrangements in Paris also explains why, in comparison with other capital-cities in Europe, the mayoral function has often been interpreted as a form of “municipal presidency” or even, “municipal monarchy” when compared to other forms of local leadership in Europe (Wollmann, 1999: 9).

Nevertheless, the effective scope and powers of the Paris mayoral function are strictly constrained due to specific powers retained, in the capital city, by the state through the legal, technical and financial supervision exerted by its representatives: the *Préfet de Paris* remained the most important representative of the state at local level and the powers of the *Préfet de Police* remained completely untouched until 1986, and it still holds important competences in the field of traffic regulation for example. In addition to these restrictions, and following Chirac’s continued re-election as Mayor between 1977 and 1995, President Giscard – and President Mitterrand after him – sought to reduce the Paris mayor’s political leadership through the development of state-led policy initiatives and projects⁴⁶. Yet the State’s ability to constrain municipal autonomy in the daily management of public policies was also made visible in a number of policy areas, due to an unequal distribution of policy resources (e.g., knowledge and expertise) and capacities, and to the resistance of elite networks, state-owned enterprises and agencies. While strengthening municipal powers, the 1982 decentralization reforms also introduced a submunicipal level of government – 20 districts in the case of Paris⁴⁷ – in order to enhance local democracy. But it was also understood as a way to counterbalance the mayoral function and through it, that of Jacques Chirac and the Conservative Party (Houk, 2004).

Today, districts (*arrondissements*) mostly enjoy consultative powers, namely rights of consultation, information, recommendation and statement. They also play a critical role in the effective implementation of local policies by mobilizing local support – or resistance – against projects and policy initiatives that stem from municipal – or state – initiatives. In addition to the creation of the districts, political struggles over relentless redistributions of parliamentary constituencies also contributed to the complexity of the city of Paris’ political geography.

⁴³ Respectively Atelier Parisien d’Urbanisme (APUR) and Agence foncière et technique de la région parisienne (AFTRP).

⁴⁴ APUR is an association registered under the 1901 law that was established in 1967 by the Paris Council. Its mission is to document, analyze and develop forward looking strategies for urban and societal evolution. <http://www.apur.org/en/about-us>

⁴⁵ The preference given to single-purpose administrative units at the local level instead of integrating local tasks into a politically accountable multi-purpose organisation, as observed in the Rhenan area (Wollmann 2004), is not specific to the case of Paris.

⁴⁶ This was the case of large flagship projects in the field of urban development, such as President Mitterrand’s “Great works” policy (Urfalino, 1994).

⁴⁷ The 1982 Paris-Lyon-Marseille Law, See Annex 2.

The election of a municipal left-Green majority as a catalyst for change.

The political changes made visible during the 1995 municipal elections confirmed the weakening of the Conservative Party in the city of Paris (Houk 2004). To begin with, Mayor Chirac transitioned from Paris city hall to the national presidency, and his imposed successor, Jean Tiberi enjoyed little support from his own Conservative majority. Also, 6 districts shifted to the left⁴⁸ and at municipal level, Mayor Tiberi and the Conservative majority was confronted with growing opposition and resistance within the city council and, at the local level, by district mayors from the Socialist and the Green parties.

Even though they enjoyed little influence over municipal government, they sought to compensate for this lack of institutional resources by developing a strong political alternative, which combined grassroots' initiatives and citizen empowerment, small-scale policy experiments in a number of policy areas and the production of policy expertise and alternative policy solutions. Following the arrival of Jospin as the leader of a Left-Green majority (1997-2002) under the Chirac presidency, a large number of younger members of the Parisian socialists and Greens gained key positions as advisors in a number of ministerial cabinets or in the French Parliament, thus contributing to enhancing their policy-making experience and knowledge of the state apparatus.

Together these factors contributed to the election, in 2001, of a new political majority in the City council, including various parties of the left (Socialists, Greens, and Communists), and that of new mayor, Bertrand Delanoé (Socialist Party). Since then, the hierarchical and centralized organizational structure that prevailed in the Parisian bureaucracy was somewhat transformed through the growing attention given to political and social dynamics at the level of the districts, and in some cases, at neighbourhood level. Consultative and participatory devices were introduced in order to increase the inclusiveness of local decision-making processes. Even though relationships with the regional government, also from a Left-Green political majority, remained highly conflictual, Mayor Delanoé initiated a more cooperative approach with adjacent local authorities from the inner suburbs as part of the Paris Metropole initiative. This was primarily done under the leadership of Pierre Mansat, an elected representative from the Communist Party (PCF) and Deputy mayor in charge of relations with local authorities in the Ile-de-France region. Drawing on his political network in the so-called "red suburbs" (Banlieue rouge) of Paris, new scope for cooperation emerged in a number of policy areas, including transport, waste management, energy and housing. Nevertheless, most of the city's policy-making tasks are still carried out by the municipal administration and its specialized agencies, such as APUR in the case of urban planning.

In addition to these changes, the new Left-Green majority also shared a different vision of the city's development, which put more emphasis on place-making and liveable policies as key dimension of its strategy to increase attractiveness worldwide. Unlike its predecessors, Mayor Delanoé considered Paris as a place rather than a hub serving the rest of the country⁴⁹. This paradigm shift initiated a long process of reshuffling policy priorities and accumulating policy resources. In order to increase political and financial autonomy (see Table 4b), the new Left-Green majority sought to develop relationships with the private sector, to diversify sources of policy expertise, and to strengthen relationships with a larger variety of interest groups and civil society organizations. This justified the introduction of a changed approach to a large number of policy areas, including housing and transport, as well as the reorganisation of the municipal administration and the reshuffling of policy priorities and investments. Recruitment strategies increasingly favoured highly-skilled specialists over generalists. Following the opening of an inquiry – and later conviction – of Mayor Tiberi for corruption, tendering procedures were transformed in order to reduce clientelistic arrangements and increase transparency.

The city of Paris today: a powerful player in the Ile-de-France context.

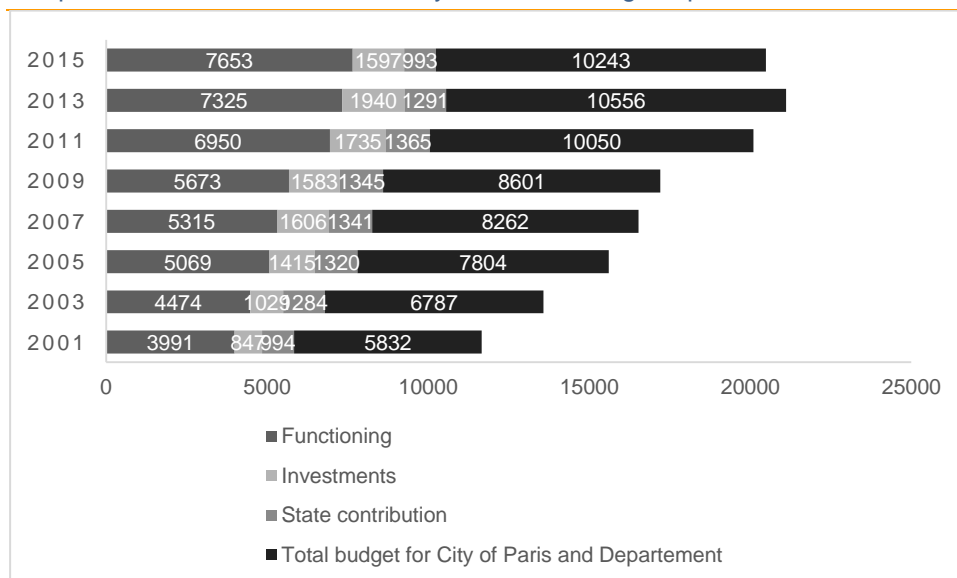
As of today, the city of Paris relies upon a large, autonomous administration and a considerable budget, which can be used with major discretion. In 2015, its population amounted 2,3 million inhabitants and its budget was just over € 9 billion, in sharp contrast with that of the Region (see Graph 1). Mayor Hidalgo pursues the capacity building strategy initiated by her predecessors and recent debates about the administrative status of Paris confirm continued struggles with the State. The city still enjoys a dual institutional function as both a municipality and a department. In some areas, such as police and traffic control, state representatives retain the

⁴⁸ The 3rd, 10th, 11th, 18th, 19th, and 20th districts.

⁴⁹ On the city as node, city as place distinction, see Veltz (2000).

upper hand. In order to strengthen the city's autonomy and to put an end to its exceptional status within the French administrative and territorial system and put an end to the city's specific administrative status, Mayor Hidalgo recently suggested a new administrative reform as part of the debate regarding the creation of the Greater Paris metropolitan authority (see below).

Graph 1. The evolution of the city of Paris' budget spent since 2001, in million Euros.



Source: Compiled by Maggioni, Rapports financiers Ville de Paris since 2002.

All in all, **party competition partly accounts for continued struggle between the city and the state – and to some extent, the region – as in other cities in CREATE.** Alternative explanations also highlight the struggle between bureaucratic and technical elites in support of the State's continued upper-hand over policy developments in Paris on the one hand, and on the other hand, those favourable to the strengthening of local political leadership and institutions. As a result, understanding governance and policy capabilities in the city of Paris should not be limited to evolving administrative reforms and should also take into account competing power and resource-seeking strategies (Kuhlman, 2007).

3.3.3 Weak political and institutional regional leadership.

By contrast, the regional level is considered politically and institutionally weak in the French context, and this is particularly the case of the Ile-de-France regional Council. The first step towards the regionalization of the governance system occurred in 1976, four years after other regions in France and without being directly elected. state representatives retained the upper hand over this functional level of governance, with 50 delegates out of 164 representatives in the regional assembly⁵⁰.

The creation of a democratically elected Ile-de-France regional council in 1986 far from guaranteed regional autonomy in spatial and transport planning. Despite successive decentralization reforms (see Annex 2), the State's reluctance to devolve authority to the capital-city region limited its ability to develop its own policy initiatives until the mid 2000s. Negotiations over the preparation of the 1994 SDRIF and during successive state-region Contracts⁵¹ (*Contrat de Plan Etat Region*) have been particularly representative of this level of government's weak political capacity. This major policy tool was introduced in close combination with the 1982 decentralization reforms in order to ensure coordination between the state and the regions in the planning and funding of regional policy priorities and investments through a six-year contract. In the capital-city region, it offers extensive opportunities to state administrative elites, affiliated with state-owned enterprises as well as successive

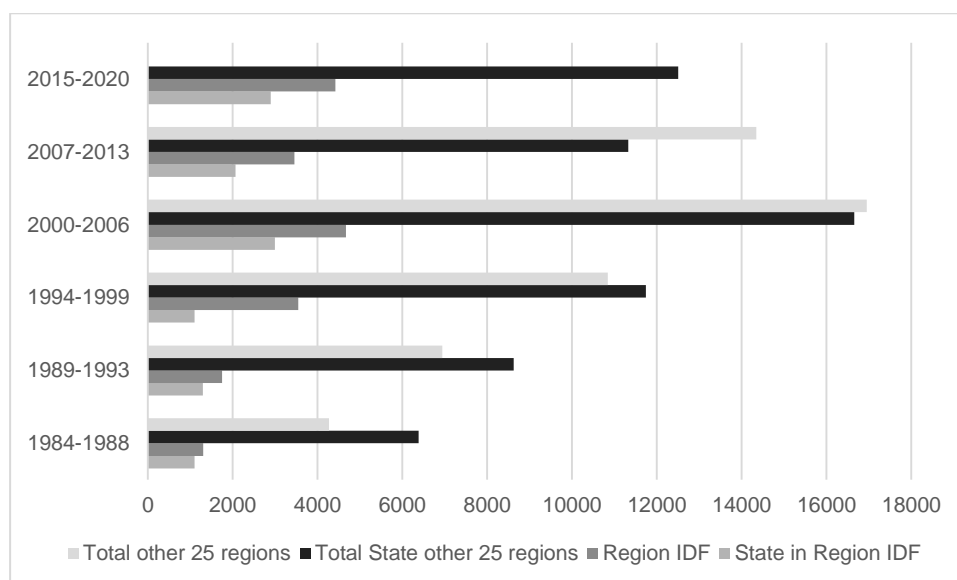
⁵⁰ The city of Paris had 30 delegates, six delegates were elected at the regional level together with six mayors representing each department.

⁵¹ Insofar as they enclosed critical decisions regarding short-term investments and policy measures, these documents were systematically taken into account in the analysis done as part of WP4.

Prime Ministers' cabinets, to shape regional policy priorities and investments while stymying development of policy proposals and plans stemming from regional authorities.

Even though the region benefited from a generous share of funding when compared to the other 25 regions (see Graph 2), the Ile-de-France regional Council enjoys limited autonomy in regards to its budget, expertise and organizational resources. In a number of policy areas, it nominally executed joint decisions with the central government on transport investments and policy priorities until the late 2000s.

Graph 2. Programmed investments in Euros: state-region planning contracts (1984-2015).



Source: Compiled by Halpern (Cour des Comptes, Contrats de Plan Etat-Région). NB: data unknown for total other 25 regions (2015-2020).

The election of a regional Left-Green majority as limited driver for change

After the 1998 elections, the Left-Green majority likewise assumed leadership over regional governance from 1998 - three years before they took Paris itself (see Table 4). With Jean-Paul Huchon (Socialist Party) at the helm, the coalition won three consecutive elections (1998-2015) during the course of which it developed transport innovations at the regional level⁵², both with cooperation and competition among municipalities, the city of Paris, and the State. During this time period, the Regional Council rapidly expanded its staff and budget and began defining its own policies with support from suburban municipalities. As the Parisian Left-Green coalition had partnered with city planners in APUR to promote transport alternatives and urban regeneration, the Regional Council joined forces with IAU against state representatives in drafting a new SDRIF (see below).

That said, the Regional Council still enjoys a limited autonomy in planning and developing its own policies. The regional administration did hire new staff members and the rise of budget and expertise has been a strong and consistent feature of the last 15 years. It also relies on a growing number of specialized agencies that provides its elected representatives and staff with some information, knowledge and expertise, as well as some operating capacities. Nevertheless, its budget remains under € 5 billion in 2015. Its resources and the discretion to use them are far more limited that of Paris City Council. In a number of policy areas, regional initiatives often experience delays, whether due to late payment or indefinite postponement of amounts owed by the state (see above) or project-level conflicts between technical agencies, project managers and municipal interests. In the absence of strong political leadership at regional level, subnational levels of government (e.g., municipalities, départements) develop and strategically use their own powers in order to challenge the region's authority by developing their own resources. As discussed in more details in the following section, transport is particularly representative of this paradoxical situation (Gilli 2014).

⁵² This will be further developed in section 4.3.

The reluctance of municipal and state elites to strengthen the regional level of government was made particularly visible during the revision of the SDRIF (2004-2007), with the Regional Council exercising the authority to formulate its own strategic planning objectives and leading the design process for the first time.

Table 4. Successive leaders of the Ile-de-France Region council.

	1976-1988	1988-1992	1992-1998	1998-2004	2004-2010	2010-2015	Since 2015
Ruling Head of regional council	Michel Giraud	Pierre-Charles Krieg	Michel Giraud	Jean-Paul Huchon	Jean-Paul Huchon	Jean-Paul Huchon	Valérie Pécresse
Ruling political majority / coalition	RPR-UDF	RPR-UDF	RPR-UDF	PS-MRG-PCF-Verts	PS-MRG-PCF-Verts	PS-MRG-PCF-Verts	LR

The proposed SDRIF contrasted with earlier spatial planning documents in a number of ways. First it advocated a shift towards more compact spatial planning, incremental urban investments, and a more autonomous future for the capital city-region that prioritized the interests of its local inhabitants rather than that of the State⁵³. Second, and in order to compensate for their lack of experience in steering such a spatial planning process, regional actors drew on a collaborative strategy through the extensive use of partnership building across a large number of stakeholders and consultation with local authorities⁵⁴. New working relations were established upon this occasion. Unprecedented amounts of resources were mobilized in order to identify the need for additional information and knowledge, produce it with the support of IAU, and make it available to the wider public.

The elaboration of the new SDRIF gave way to massive local mobilizations, during which local elected representatives resisted proposed changes (e.g., densification through housing developments, nature protection through restrictive land-use planning, etc.) while trying, at the same time, to attract as much public investment and infrastructure as possible. In addition to such pressure from local authorities, state representatives in the region found it difficult to recognize the legitimacy of their regional counterparts to lead the spatial planning process. Systematic competition for leadership resulted into incessant conflicts and profound distrust between the state and the region's respective administrations and agencies.

In the end, the entire planning process was characterized by unusual levels of conflicts. The Region was blamed for the absence of a "grand vision", its lack of political ambition and its incapacity to foster an agreement about the capital-city region's economic future. The SDRIF project itself had a limited operational dimension, and unconvincingly attempted to reconcile vague, broad policy objectives on the one hand, and on the other hand, a profusion of extremely detailed projects at the local level⁵⁵.

State-region rivalry about spatial planning objectives

In this context, President Sarkozy's initiative to launch the Grand Paris Strategy⁵⁶ was understood as a political and institutional 'declaration against the regional Left-Green majority and local autonomy in the capital-

⁵³ Interviews IAU, march 2015.

⁵⁴ As explained by one interviewee working with the regional council's administration: "During the 2008 SDRIF, it was the first time a regional authority took over the regional planning competence without any other legitimacy to do so. Overstretching the meaning of it, one could say that in 2008, intense consultation was a way for the region to legitimise itself as a planning authority, ... to create a narrative that would, at some point, become a vision of what the Ile-de-France region would be in 2030. We tried to foster some level of consensus, in spite of the all the limitations it involves in terms of big projects, infrastructure development, governance etc. Similarly, we used the idea of partnerships as way to strengthen the region's new competence vis-à-vis other actors and within the region itself" (12/05/2015, Translated by Authors - TbA).

⁵⁵ One interviewee working with IAU at that time summarized the general feeling at regional level as follows: "This was our biggest mistake at the time, but we realized it too late. There was nothing to be dreamed about in our project. ... We put so much energy in convincing local politicians about densifying urbanized areas that we lost sight of the bigger picture. ... Our plan was serious, hard-working, but boring." (TbA, 13/04/2015).

⁵⁶ The Grand Paris strategy was launched in June 26, 2007: Déclaration de M. Nicolas Sarkozy, Président de la République, sur ses projets en matière de politique d'aménagement durable, à Roissy le 26 juin 2007: <http://discours.vie->

city region. He drew on his own experience as former local elected representative in the western inner-suburbs in order to criticize the region's wish to promote urban densification and place-making strategies⁵⁷. By proposing a clear alternative to the Region's proposed SDRIF and blocking the formal adoption of the 2008 SDRIF project, he openly challenged the region's authority as well as local prerogatives⁵⁸. However dissatisfied local authorities may have been with the 2008 SDRIF project, Sarkozy's Grand Paris Strategy attracted unanimous criticism of the State's denial of regional and local autonomy.

This conflict also highlighted the long-term effect of capacity building at subnational levels of government and changed state-local power relations in negotiations over policies and investments in the capital-city region. This will be demonstrated empirically in section 4 by looking at transport policies. This conflict also impacted on recent discussions about the status of Paris and the Ile-de-France region.

3.3.4 The current state of central-local relations in the capital-city region

As of 2017, competition for political and institutional leadership still characterizes current struggles about the Greater Paris metropolitan authority, the Grand Paris Express project or the candidacy to host the 2024 Olympic and Paralympic Games. From the perspective of subnational authorities, it highlighted the need to develop new forms of cooperation at the regional level in order to oppose state interventionism, including with the city of Paris, which had remained external to the state-region disputes until then. From the State's perspective, it showed the limits of classic interventionism and the need to develop alternative policy tools. Political debates over the creation of the greater metropolitan authority offered a timely opportunity to test emerging forms of regional governance.

La métropole du Grand Paris, the Parisian Greater Metropolitan Authority

Debates over the creation of the métropole du Grand Paris opened a new series of lengthy political and institutional negotiations (2010-2016) in order to shape the transfer of new powers and responsibilities across a large number of policy areas (e.g., urban planning, housing, economic development, and the environment). In President Sarkozy's view, the métropole du Grand Paris initiative played a pivotal role in the state's strategy to ensure the capital-city region's competitiveness. It was eventually introduced as of January 1st, 2016 in the context of the 3rd wave of decentralization reforms⁵⁹.

As of today, Grand Paris Metropole covers an area of 7 million inhabitants and accounts for 21% of the national GDP. It is a weak institution, which is characterized by a high level of fragmentation: it is composed of 131 municipalities, that were gathered into 12 public authorities, each belonging to a total of 4 départements which, so far and unlike the situation observed in other French cities such as Lyon, have not been removed (see Map 4b). It is led by a metropolitan council, with a total of 209 councillors stemming from the 131 municipal councils. It enjoys a limited budget, most of which is provided by grants from central government and is redistributed to municipalities with little room for manoeuvre to directly invest. Moreover, this new entity is formally required to submit to those policy priorities defined at regional level.

Such institutional ambiguity increases scope for conflicts and competition between local authorities in order to assert leadership over the new metropolitan authority and access policy resources. The State's policy of "divide and rule" offers numerous opportunities to local authorities to successfully develop resource-seeking strategies in order to develop their own policy priorities (e.g., urban planning, land-use regulation and specific policy areas such as transport and mobility).

publique.fr/notices/077002121.html It made clear reference to the pre-1975 period and the "Golden age" of regional planning under State leadership.

⁵⁷ President Sarkozy built his entire political career in the municipality of Neuilly-sur-Seine, the wealthiest municipality of the Ile-de-France Region, just next to the city of Paris, in the Hauts-de-Seine département. He is a member of the Conservative Party (former RPR, then UMP and now Les Républicains - LR).

⁵⁸ The regional council pursued the SDRIF formal adoption process: it was adopted twice, first in February 2007 and second, after the public inquiry, in September 2008. Central government never transmitted it to the Council of State for final approval.

⁵⁹ Law n° 2015-991, 7 august 2015, on the new territorial organization of the Republic (Loi NOTRe). See Annex 2.

Map 4b. Métropole du Grand Paris, as of January 2016.



Source: APUR, Décret du 11 décembre 2015.

In addition to the above-mentioned political and institutional rivalry, the election of a Conservative majority at the regional level in 2015, led by Valérie Pécresse (LR), increased levels of competition for political leadership with central government and Mayor Hidalgo (PS). In order to strengthen the city's autonomy, Mayor Hidalgo called for normalising the status of Paris and for the devolution of specific powers that are still held by the state through its representative – Préfet de police – such as access to full autonomy over parking management, parking fees and traffic control (Darnaud, 2016). Following the experiment led in Lyon since 2015⁶⁰, she suggested 1) merging the city of Paris with the département as a way to further rationalise the effective organization of administrative work and the management of resources; and 2) reducing the number of districts from 20 to 17, by merging 4 of the less populated districts located in the centre of the city⁶¹.

Concluding remarks

Over time, subnational authorities in the capital-city region have been able to gain new powers, develop their competences and invest considerable political resources in order to assert their role as legitimate actors in various policy domains. By leveraging its influence in both Paris and the region, the Left-Green majority contravened existing patterns of unilateralism and conflict among local authorities, instead facilitating inter-municipal collaboration around transport planning and policy implementation at local and regional scales.

Nevertheless, legacies of state interventionism are still visible through the role played by national government and actors in policy-making. This is partly due to funding mechanisms, such as state-region contracts, and to the ability of specific branches of the state to develop resource-mobilizing strategies in support of specific large infrastructure projects and policy initiatives. In addition, the “divide and rule” strategy still characterizes the State's policy in the capital-city region in a number of policy areas. This is particularly the case in transport.

⁶⁰ Following the 2014 MAPTAM Law (see Annex 2), the Greater Lyon metropolitan authority exercises the competences of both a metropolis and a département.

⁶¹ The Law was adopted in march 2017. See Annex 2.

3.4 Transport planning and organization

In this section, the current organization and governance of transport in the capital-city region is introduced in more detail, together with a synthetic overview of the current policy offer. This has changed remarkably over time in conjunction with above-mentioned political and institutional dynamics. Even though subnational authorities were able to gain and develop new competences in transport, the State's role in the governance, the planning and the organization of transport in the capital-city region has been – and to a large extent still is – central.

In this context, transport repeatedly emerged as a major issue of contention in central-local relations on the one hand, and in relations between political and technical actors on the other hand. This affected the distribution of competences and resources between actors, as well as their evolving ability to shape policy priorities, infrastructural developments, the transport policy offer as well as their spatial distribution.

As a result, and unlike the situation observed in London, Vienna or Berlin, the organization and the governance of transport in Paris remains highly fragmented and important differences can be observed between transport modes and across levels of government.

3.4.1 Key legislative and transport planning documents

The legislative framework pertaining to transport planning and governance has undergone a number of significant changes over the last forty years within the French context. Since the first decentralization reforms in 1982, a number of laws organized the transfer of responsibilities over transport to subnational levels of government (Gallez, 2010). While some of these key pieces of legislation were designated as transport laws, other dispositions were made as part of spatial planning, decentralization, urban regeneration and environmental legislations, thus explaining why subnational authorities were able to strategically tap into resources provided in other policy domains in order to challenge main stakeholders in the field of transport. Successive devolution reforms also led to changed State-local relations in the funding of transport infrastructure and more generally, in the organization of transport.

It should be noted, however, that specific arrangements were made for the Paris Ile-de-France region. Today, the state maintains a strong hold on transport governance and policy developments in this region, mainly through indirect resources, such as the elaboration of transport planning documents, state-region contracts and state-owned companies or transport systems. There are some important variations between transport modes and systems. In the analysis done in CREATE, and following the suggestions made during the workshop we organized jointly with IAU in January 2016, we focused primarily on what was considered the most relevant documents for fully understanding evolving central-local relationships in the planning and the governance of transport in the capital-city region. These included 1) spatial planning documents, 2) successive generations of state-region contracts, 3) Mobility plans introduced across subnational levels of government.

A selected list of those major pieces of legislation that shaped transport governance and organization in the capital-city region is given in Annex 2.

3.4.2 The growing role of STIF as the region's transport authority.

Since 2006, the responsibility for transport planning rests with the Regional Council and the Regional transport authority, STIF (Syndicat des transports d'Ile-de-France)⁶². This major reform results from a long process of evolving central-local relations in the planning and organization of transport in the capital-city region. Successive reforms⁶³ sought 1) to reflect the growing role of local authorities in the governance of public transport vis à vis the state and its representatives in the region, 2) to increase its authority over transport companies, both public and private, and public transport services, and 3) to increase its financial autonomy.

⁶² Article 1-II de l'ordonnance n°59-151 du 7 janvier 1959 relative à l'organisation des transports de voyageurs en Île-de-France, dans sa version issue de la loi n°2009-1503 du 8 décembre 2009.

⁶³ See chronology in Annex 3.

From transport to mobility planning: successive institutional reforms.

STIF is the distant heir of the Syndicat des Transports Parisiens (STP) which was created in 1959 as a public transport authority in the region. In this early phase, its role was to organise and modernise public transport in the capital-city region under the responsibility of the State, with some limited room for manoeuvre given to the city of Paris and 3 départements. Over time, a number of changes were brought to this organization, first in 2000, when the state reformed STP into a new agency, STIF as a result growing pressure from subnational authorities in the region, and second in 2006, when STIF gained additional competences in the context of a new wave of decentralization reforms in the capital-city region (2004 Act, see Annex 2).

Since 2006, STIF acts as the region's transport authority. Due to STP's legacy, its powers and capacities are particularly strong in public transport and now extend to the entire public transport offer (incl. river transport, school transport and transport on-demand). It also gained considerable powers in transport planning.

Today, STIF's main responsibilities include:

- Defining and organizing public transport services (all modes)
- Setting the fare policy
- Regulating contractual relationships with service providers
- Ensuring the financial balance of the system
- Planning and monitoring network extensions
- Defining quality standards for interchange hubs
- Evaluation and revision of the Regional Mobility Plan, i.e. PDUIF, on behalf of the Ile-de-France Regional Council. So far, two PDUIF have been introduced, in 2000 and in 2014 (see below).

In those areas where existing services providers and transport planning authorities resisted its strengthening, STIF has used its rights to delegate these tasks to local authorities or second level administrative bodies that act as "local" transport authorities. In a limited number of cases, STIF is able to negotiate loans autonomously and to act as project manager for capacity investment and developing users' facilities⁶⁴.

In order to increase their information and knowledge about transport in the region, local authorities agreed to the creation of an observatory – OMNIL – that works in close relationship with STIF, IAU and the Region. Its aim is to support the region's transport initiatives by developing comprehensive data production and management, various types of indicators and tools for appraising, monitoring and assessing policy initiatives. This is achieved by drawing on the information provided by local authorities.

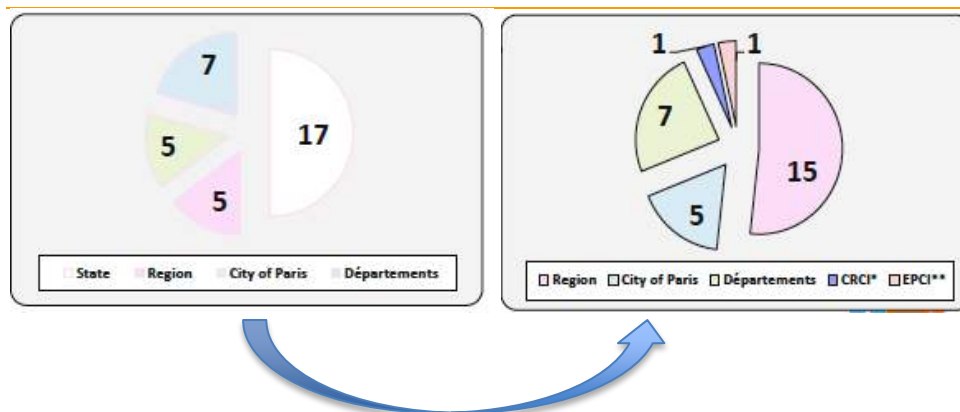
The governance of STIF

Since 2006, changed power relations between the state and subnational levels of government is also reflected in the governance of STIF. Up until this reform, the state chaired and claimed the majority of seats on the STIF's Board. Since then, it has pulled out of its Board and some changes were brought to its governance (see Figure 4). At present, the Board entails a total of 29 members and is composed as follows:

- the Regional Council holds a majority of seats as well as the chairmanship
- the city of Paris
- the départements
- The regional Chamber of Commerce and Industry (CRCI), which represents business actors
- Other stakeholders are presented (labour unions, users' associations, municipalities), but do not have voting power.

⁶⁴ This was the case of the T-Zen bus system for example. See below.

Figure 4. The governance of the STIF before and after the 2005 reform.



Source: STIF - Adapted from the contribution to the CREATE networking event between IAU and Skopje, March 2016.

In spite of such considerable increase in its powers and responsibilities (Orfeuill, Wiel, 2012), there are a number of issues that still escape the Region's and authority in the planning and the provision of transport. In those cases, the regional level acts, at best, as a preferred venue⁶⁵ for resource-seekers and only plays a limited role in shaping policy initiatives.

3.4.3 Outside public transport, a fragmented governance system.

Apart from STIF, a large number of actors contribute to the governance of transport. This is explained due to the role of other levels of government – local authorities and the State.

The state as a key player in the development and management of transport

Outside public transport, two transport dimensions still rest with the state and its local representatives as of 2017, thus escaping the Region's authority.

- Motorways and expressways in the capital-city region.

The development and operation of the road network – some 40.770 kilometres in 2012 (Table 5) – is fragmented. First, the Parisian road network is jointly managed by the city of Paris and the state representative (préfet de police). The latter is responsible for traffic conditions on main roads, including the ring road (Boulevard périphérique).

Table 5. Length of roads network in 2012 for the whole region [km]

Roads	Length (km)
Motorways and expressways	1 314
National and departmental roads	9 992
Important secondary roads	2 675
Others	26 790
Total	40 771

Source: extracted from D3.2 CREATE report, p. 22.

Second, and apart from local authorities' responsibilities over the secondary road system (see below), motorways and expressways are regulated and – mostly – operated by state authorities. This rapid transit road system is characterized by a radial structure that converge towards the city of Paris. In 2015, the network was used by a total of 44 million car users. The road network is much denser in the central urban agglomeration (See

⁶⁵ This refers to the concept of "venue shopping", which, in the policy studies literature refers to the activities of a variety of stakeholders (advocacy groups, policymakers, etc.) who seek out a decision setting where they can voice their demands and push for alternatives to current policies. (Pralle 2003)

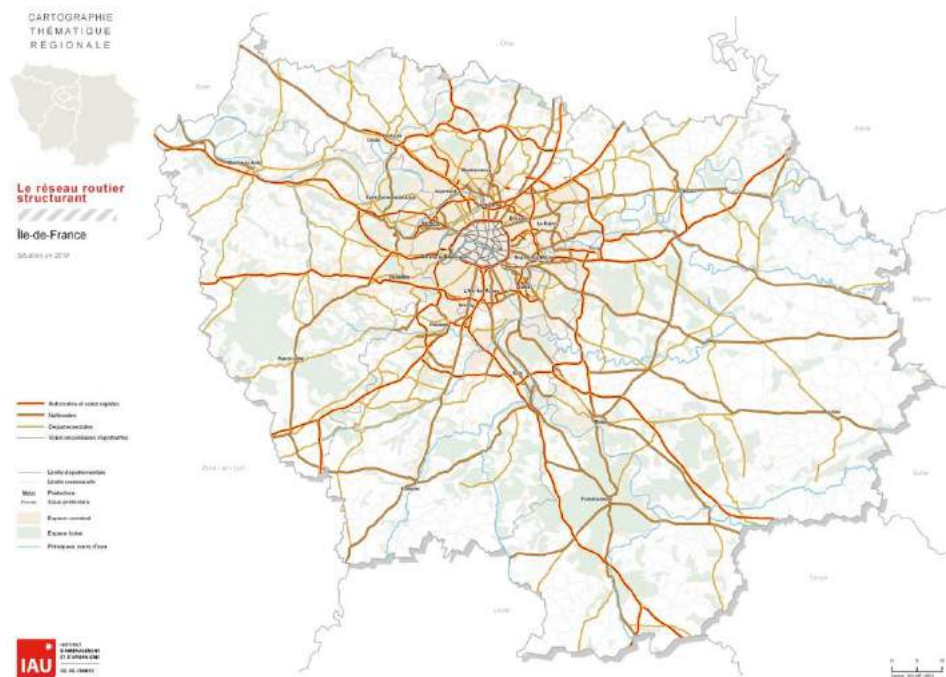
Maps 5a&b). It follows a radial pattern with a number of roads (e.g., A1 to 116) that converge towards Paris and a series of secondary hubs.

This regional motorways and expressways network is structured in three ring roads:

- The Boulevard périphérique, which was completed in 1973 and strictly delimits the city of Paris
- The A86 motorway, that was completed in 2011
- The Francilienne, an unfinished ring of some 50 km.

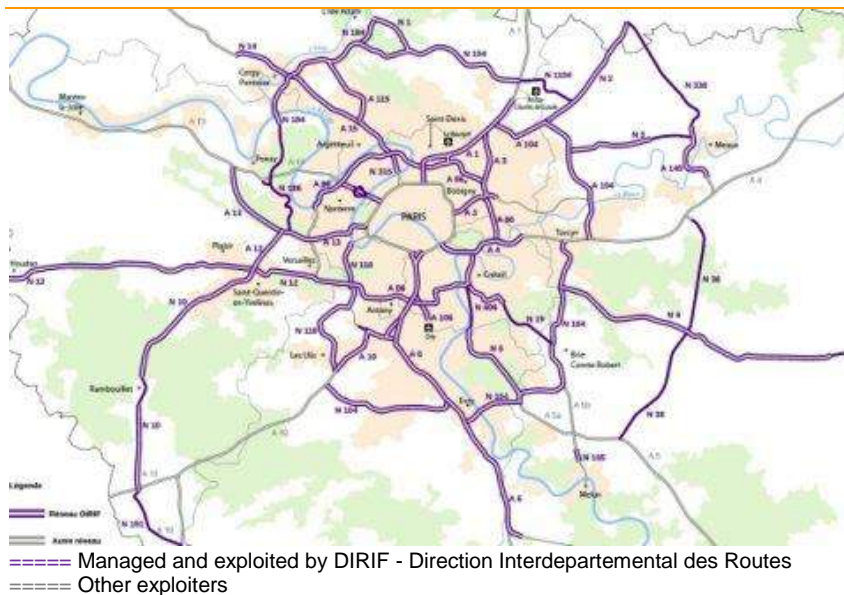
Outside the Ile-de-France region, a wide loop - le *Grand contournement de Paris* – was developed in order to bypass the capital-city region.

Map 5a. The institutional distribution of power over the road network



Orange: Motorways & expressways / blue-orange: National / Light orange: Departmental / Dark blue: main secondary roads.
Source: IAU, 2010

Map 5b. The public-private divide in the management of motorways and the high-capacity road network



Source: DIRIF

This regional motorway and expressway network has been continuously developed under the direct supervision of state administrations since the 1960's. Since 2010, it is placed under the supervision of a single state administrative division at regional level⁶⁶. This administrative authority includes several directorates, including the Regional Roads Directorate (Direction des Routes de la Région Ile-de-France - DiRIF)⁶⁷, which develops, operates and maintains the non-franchised road network across the entire region outside Paris that is some 1300 kilometres, including 454 km of urban high-speed roads and 336 km of national roads⁶⁸.

In addition, four other private companies operate the licensed road network through motorway concessions⁶⁹. Unlike the situation observed in other EU member states, financial instruments have rarely been selected in the French context and motorway concessions are one of the few exceptions⁷⁰. This policy tool was introduced in the post-WWII period in order to levy sufficient resources for developing and maintaining motorways through the payment of toll fees. In this respect, the governance of the Ile-de-France motorway network does not differ from the situation observed in the rest of the country.

Information policy tools were introduced under the responsibility of the DiRIF in order to measure traffic and produce real-time information for car users. Traffic management is achieved through the use of the SIRIUS device whereas the SYTADIN system was introduced in combination with an observatory produces systematic data on transport and mobility by drawing on geographic information systems. Up until now, this information system has not been developed into an integrated platform on urban mobility that can be used in order to better integrate private and public transport and to optimize the use of existing infrastructures at the metropolitan level.

- The regulation of taxi services.

Taxi services are also regulated by state representatives in Paris (préfet de police) and the region (préfet de région). The regulation of taxi services was first introduced in the post-WWII period in order to limit congestion on the road network. It was achieved through the issuing of a limited number of licenses distributed free of charges by state representatives, and contributed to effectively constraint the increase of taxis - only some additional 3,000 taxis since 1930. Following the development of the taxi industry, the 1995 Pasqua law confirmed this licensed-based regulatory system as well as their limited number, but allowed the trading of taxi licenses⁷¹.

In addition to the state's remaining powers in the organization of transport, local authorities play a growing role.

Local authorities as key players in the planning and provision of local transport policies.

Local authorities have also been able to maintain or develop some competences as a result of successive decentralization reforms:

- *départements* are responsible for developing, managing and maintaining roads (see Map 5a) as well as public transport services outside urban areas.

⁶⁶ Direction régionale et interdépartementale de l'équipement et de l'aménagement.

⁶⁷ Following a major reform of the central administration in 2010, it has replaced the powerful Roads Directorate.

⁶⁸ For an overview of the road network, see map:

http://www.dir.ile-de-france.developpement-durable.gouv.fr/IMG/pdf/Reseau_DIRIF_2_cle59a858.pdf

⁶⁹ E.g., Vinci Autouroute (ASF network), Abertis (Sanef network) and Eiffage-Macquarie group (APPR/AREA network).

⁷⁰ See presentation by J.P. Orfeuill, CREATE WP3 workshop, Sciences Po, 8-9 March 2017.

⁷¹ For an estimation of the average price of taxi licenses in France, see the study published by 6t (2015). In Paris as of 2015, it was estimated that some 19.000 licenses were in circulation at an average rate of €190.000 / license. Taxi services are particularly sought after for occasional purposes, as opposed to daily transport behaviours, or for leisure purposes in the evening or at night. The impact of app-based technologies and ride sourcing services, including the development of Uber in the French context, is discussed in Section 4.

- Municipalities and groups of municipalities are responsible for developing, managing and maintaining local roads, as well as for the delivery of goods and parking management. Municipalities may also develop their own Local Mobility Plans (Plan Locaux de Déplacements, PDU). Since 2004, the city of Paris was also granted the right to develop its own mobility plan (Plan de Déplacements Parisien – PDP) under the authority of the Council of Paris. Municipalities are also responsible for planning and developing bike- and car-sharing systems.

The example of parking management is developed here as an example of the way through which STIF's powers and competences are exerted in practice.

First, municipalities regulate parking availability through building permits for commercial and residential developments, the management of public parking facilities and land-use plans. Since 2010, the Regional Mobility Plan also defines maximum numbers of parking places in the densest areas of the capital-city region that constrain municipal land-use plans. Nevertheless, the total amount of parking space in the region is often highlighted as oversized in regards to car use reduction objectives (OMNIL, 2014). Second, municipalities set the rates and collect the proceeds of parking. The Regional Mobility Plan also provides some guidelines regarding the role of on-street parking management in the promotion of sustainable mobility and identifies some 150 municipalities located in densely urbanized areas where introducing such regulations is considered highly recommended. A recent study done by the STIF on parking management in the capital-city region shows the high level of diversity that characterizes parking availability and strategies regarding the regulation of on-street parking across the region: through price or duration – or both, reducing on-street parking availability, etc. Moreover, the pricing structure varies across the Ile-de-France area, thus explaining why parking management is often considered a strategic tool that exemplifies municipal competing strategies⁷².

In the context of the Ile-de-France Region, Paris is considered an exception: residential parking availability is low due to the urban morphology and free parking facilities – both on- and off-street parking – have almost entirely disappeared to the benefit of alternative transport modes or systems (bus lanes, cycling, car-sharing, tourist busses, etc.).

The high level of fragmentation of the transport system also impacts the organization of public transport. This is explored in the next section.

3.4.4 The organization of public transport in the capital-city region.

The organization of public transport in the capital-city region is representative of evolving relationships between local authorities and the state on the one hand, and between state authorities and transport companies on the other hand. Together, both dynamics have been a source of constraint for STIF and the Region, and have shaped their ability to effectively steer public transport provision in the capital-city region. This historical legacy also accounts for STIF delegating a large share of its competencies in public transport to transport companies or to local authorities and municipalities.

Overcoming fragmentation: the State's policy in the Paris Ile-de-France region.

Historically, competition has been particularly exacerbated in the field of public transport. The development, ownership and operation of public transport networks – railways, bus and tramways – in the Paris agglomeration was shaped by a series of struggles between the private sector and the state on the one hand, and between these actors and local authorities on the other hand. Three major controversies had a long-lasting impact on transport policy offer in the capital-city and the surrounding regions.

- *Controversy about connectivity between networks:*

A first controversy addressed the issue of connectivity between regional and national railway lines entering the city of Paris. The development of railways in the 19th century had led to a debate regarding the centralization of the network in a single train station. In the case of Paris, the decision was made in 1842 not to centralize the railway networks in the Saint Lazare station but to favour the development of 7 train stations. This

⁷² Available on the website of the regional observatory for mobility: <http://www.omnil.fr/spip.php?article144>

solution was advocated by rival railway companies and their respective investors as a preferred way for each of them to secure leadership over one of the seven regional networks. A decade later in 1851, in a changed political context and against the wishes of the railway companies, the state initiated the development of a rail belt around Paris in order to connect the 7 stations and ensure increased coordination onto the network. In spite of the private sector's continued resistances, parts of the rail belt were eventually completed in 1869 (33 km, 21 stations). Following the 1871 defeat, this infrastructure project was never completed.

- *Controversy about capacity investment funding:*

A second controversy emerged in the early days of the third Republic (1870-1940) regarding the most effective way to develop and fund local public transport in the capital city. Two different systems emerged in this early period, each of them being organized in a different way.

Although lacking powers to impose its views, the city of Paris favoured the development of a dense urban network that would be fully integrated to other public transport modes (e.g., urban tramways). This eventually led to the development of the Paris metro from 1897 onwards that is, a combination of 6 under- and over-ground lines, whose technical characteristics prevented any form of interoperability with railways. The metro was first developed by the Compagnie du Chemin de Fer Métropolitain de Paris (CMP) in the form of a concession, and from 1921 onwards, by the same company acting on behalf of the city of Paris.

By contrast, the Département de la Seine was designated as transport authority for the entire tramway (109 lines) and bus (41 lines) networks in the city of Paris and the département in 1920. It designated a single operator, namely the Société des Transports en Commun de la Région Parisienne (SRCRP), a private-owned company. Due to the streets' narrowness, the SRCRP chose to progressively dismantle the urban tramway network (between 1925 and 1937) and to develop the bus network.

A first step towards the network's integration was taken in 1941 by the Vichy regime (1940-1944), with the CMP taking over the entire network. The creation of RATP in 1949 finally completed the network's nationalization with the state-owned companies acting as transport operator and the STIF's ancestor being designated as transport authority.

- *Controversy about the regional rail network's autonomy:*

In parallel to the choices made in the early days of the 3rd Republic regarding the organisation of public transport, a third controversy focused on the most effective way to convey freight and passengers to the capital-city. State organizations and elites⁷³, their regional representatives, technical agencies and railway companies advocated the development of a regional railway network that would be strictly segregated from the local public transport network. From 1879 onwards, the state initiated a slow process by which it would eventually take over full ownership over the railway network and create a single state-owned operator, namely the SNCF, in 1946.

Since the post-WWII period, nationalization reforms have led to the creation of two state-owned companies, who share ownership and responsibility over the region's public transport network. Both RATP and SNCF have played a critical role in the development of public transport infrastructures and systems in the region (Larroque et al 1997) through capacity investment and the development of transport services⁷⁴. Both companies are placed under the direct responsibility of Central Government and have been run by state elites (i.e., engineers from the powerful Corps des Ponts-et-Chaussées) in cooperation and conflict with powerful trade unions⁷⁵. Both companies enjoy a large autonomy; they are weakly controlled by the government. Since 2000, STIF has mobilized massive resources in order to exert its regulatory functions. This is developed in further detail below. Figure 7 provides an overview of the public transport offer in the capital-city region since 2000.

⁷³ Corps des Ponts et Chaussées

⁷⁴ This will be further developed in Section 4.1

⁷⁵ Such connections between State administration and large public enterprises are mainly explained by elites' recruitment and training (Hayward, 1995; Biland, Gally 2018).

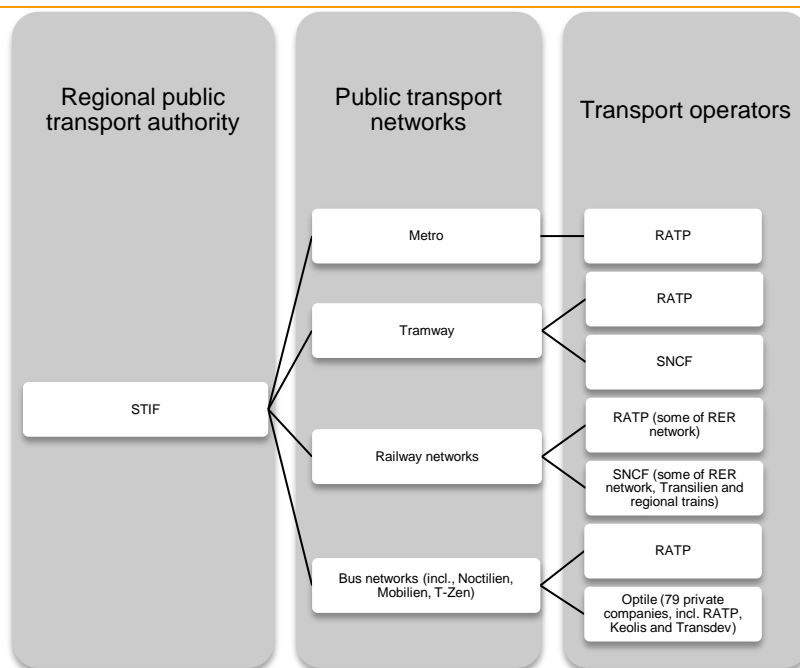
The strengthening of STIF's ability to exert its role as public transport authority.

Until 2000, operating costs were almost automatically compensated through public subsidies without any requirements. Since 2000, STIF's relations with transport operators have been defined by 4-yearly network operating contracts (see Annex 3). These contracts establish the framework for the network operation (service quality levels based determined by indicators, paired with a bonus/penalty system, investment to be made, etc.) and specify terms of compensation. They are established under the control of the State Council, the highest administrative jurisdiction.

The process through which the STIF (and the region) progressively increased their effective regulation capacity of the planning and organization of public transport in the capital-city region vis-à-vis the powerful RATP and SNCF is unanimously described as a slow and chaotic process, and reflects these two public companies' ability to bypass the STIF and successfully develop influence-seeking strategies at state level. Relations with RATP and SNCF also led to several struggles in order to allow for the STIF and local authorities to introduce and strengthen policy objectives in terms of both quality and quantity. The latest struggle took place in 2012 with the SNCF, during negotiations about the 2012-2015 operating contract. In spite of resistances and conflicts, this policy tool contributed to increasing the STIF's capacity to increasingly structure transport planning and policies in the region according to the policy priorities defined in the regional mobility plan (PDUIF).

In addition to RATP and SNCF, STIF has developed similar relationships with 2 additional transport companies: OPTILE and Société du Grand Paris (SGP). In the following paragraphs, some elements of context are provided for each transport company. In addition, an overview is provided in Figure 6; Tables 6a & 6b provide an overview of the existing public transport offer in the region and Map 5c an overview of the network. In spite of the Region's efforts to develop comprehensive information about the public transport offer in the capital-city region, it should be noted that the overall data about the scheduled (offered) public transport service supply, all types (i.e., million seat-km per year) is not yet available (see D3.2 CREATE report, p.24).

Figure 6. The organization of public transport: an overview of the current situation (since 2000).



- RATP (Régie Autonome des Transports Parisiens)

RATP oversees public transport in Paris and for some segments of the suburban railway network and since 2005, it was recognized as a rail infrastructure owner. It is responsible for operating the Metro and parts of the tramway systems in Paris, 2 RER lines (jointly with SNCF) as well as some 320 daytime bus lines, running mainly in the central agglomeration of the Region. In addition, the Noctilien network (night bus lines) are jointly operated with the SNCF, the RATP respectively 31 lines by RATP and 16 by SNCF. Following the 2009 EU

regulation, the opening of the RATP bus network to competition is foreseen in 2024 and as part of the Grand Paris Express project, the operation of 3 additional tramlines will be opened to competition.

- SNCF (Société Nationale des Chemins de Fer)

The national railway company, was established in 1938. It operates the country's national rail services, including the high-speed rail network (TGV), as well as railway services for passengers and freight, and maintenance and signalling of rail infrastructure. Since 1997, a separate network operator was created (Réseau ferré de France), and since 2015, it was reintegrated under the name of SNCF Réseau as one of the SNCF's three subsidiary companies. SNCF Mobilités is the SNCF's second subsidiary company, which coordinates all activities related with rail passenger services and train stations were also regrouped as part of SNCF Mobilités. Its current status and functioning follow the principles laid out in the 2014 Law reforming the railway system. It was confirmed as a state-owned company operating under the direct control of the state (Transport Department).

In the capital city-region, SNCF has responsibility over regional railways. It operates suburban trains (Transilien Network), namely 5 RER lines (of which two are operated jointly with the RATP) and 8 regional train lines. It also operates some night bus lines on the Noctilien network (16 lines) and some tramway lines. It should be noted that the Transilien network goes beyond the borders of the Ile-de-France Region, with some lines being operated in neighbouring regions. Alternatively, parts of rail network located at the fringes of outer suburbs are operated as part of the regional train network (TER).

- Optile (Organisation Professionnelle des Transports d'Ile-de-France)

It is a professional organization that brings together some 80 private bus companies, running over a thousand lines outside the city of Paris and mainly concerning local or departmental connections within the inner and the outer suburb areas. Its main role is to represent its members' interests during negotiations on pluriennial network operating contracts with STIF. Together, bus companies operate over 1.200 bus lines, including 43 lines pertaining to the Mobilien network, and over 27.000 bus stops in the region.

Prominent transport operating companies such as RATP, Keolis (subsidiary to SNCF) and Transdev, are members of Optile.

Table 6a. Overview of the public transport offer (as of 2015)

		Number of lines (Total)	Length of lines (in km)
RATP	RER	2	113
	Métro	16	218
	Tramway	5	75
	Bus (Paris)	6	709
	Bus (petite & grande couronne)	209	2744
	Noctilien	31	462
SNCF	Transilien	8	850
	RER	5	488
	Tramway	1	8
	Noctilien (night bus network)	16	588
Optile	Bus (inner & outer suburbs)	1142	28058

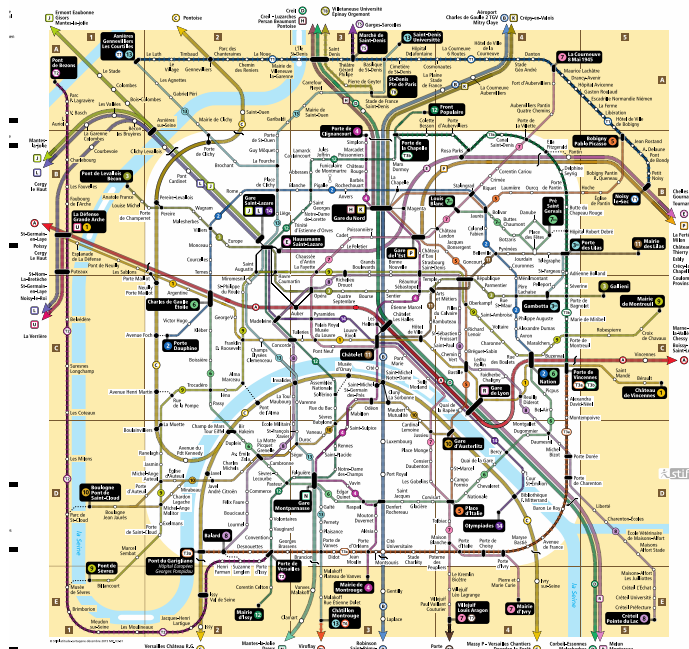
Source: compiled by Halpern with data from OMNIL/STIF, all operators and network owners.

Table 6b. Overview of the public transport offer per mode (as of 2015)

		Number of lines (Total)	Length of lines (in km)	Operator
Rail (incl. RER)		13	1651	SNCF
Métro		16	218	RATP
Tramway		7	145	RATP
Bus		1 505	33 047	RATP/OPTILE
	- City of Paris	61	709	RATP
	- Inner & outer suburbs	1 351	30 802	Optile
	- Noctilien (night bus)	47	1 050	RATP
	- Mobilien	2 (+ 5 planned)		Optile (Transdev)
Fluvial		1	6	RATP

Sources: compiled by Halpern with data from OMNIL/STIF, all operators and network owners.

Map 5c. The Ile-de-France public transport network (as of June 2017)



Source: RATP 2017

- Société du Grand Paris (SGP)

SGP is a newly-created state-owned organization, which was created in 2010 in order for the purpose of planning and developing infrastructures pertaining to the Grand Paris Express infrastructure project. It is bounded by similar obligations to the STIF as those applying to other transport operators. In terms of revenues, it is able to raise capital investment and benefits from a newly-created tax on business spaces in the capital-city region. Since its creation in 2010, the SGP has developed strong expertise and steering capacity, including some 160 employees with a diversity of training and professional background.

Public transport funding

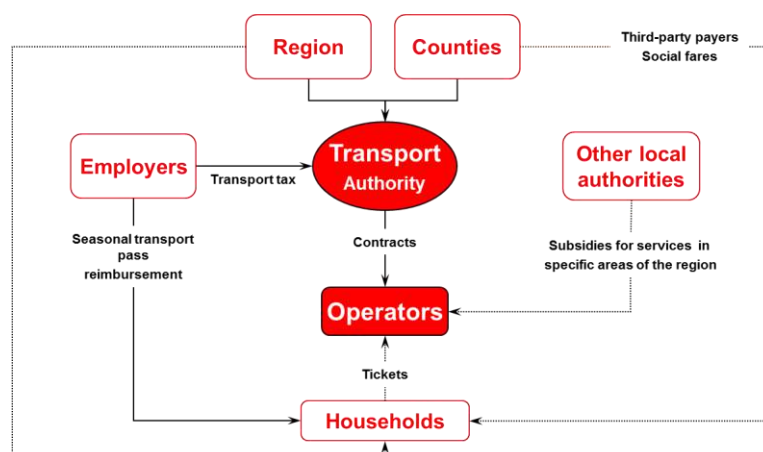
A distinction should be made between public transport investment funding, maintenance and renewal, and, finally, public transport operating costs.

Transport investment funding is shared among the State, local and regional governments through subsidies. This includes capital costs for new lines and extension of existing lines. New rolling stock is funded by the STIF. It should be noted that special funding is made available for large infrastructure development projects such as the Grand Paris Express project, for which funding lies with SGP.

Transport operators fund ordinary maintenance and renewal, in accordance with operating contracts signed with the STIF. In 2014, 51% of the STIF's investment funding was allocated to RATP, 33% to SNCF and 12% to private bus companies. During the duration of the 2016-2020 operating contract, RATP also committed itself to a € 4,2 billion capital investment plan from its own capital (out of a total of a € 8,5 billion capital investment) (RATP, 2015).

Transport operating costs are mostly covered through the STIF's budget. It stems from a variety of revenue sources (see Figure 7 below) (STIF, 2016). Figure 6 provides an overview of public transport funding in the region.

Figure 7. Overview of public transport funding in the Ile-de-France region



Source: STIF, retrieved from presentation given on March 16, 2016 at IAU Ile-de France as part of peer-training activities within the CREATE project.

- The *transport tax or versement transport (VT)*:

VT is its largest source of income for transport funding (39.1% of total operating revenue in 2014). The tax rate is defined by STIF as a percentage of companies' payroll and within a ceiling that is fixed by the government. Since 2013, the steady increase of VT rates (see Table 6) has been justified due to the introduction of the Grand Paris Express initiative in 2010 and to the 2014 Government's decision to change the tax base – all companies, both private and public, with a minimum of 11 employees instead of 9⁷⁶. As of today, VT still constitutes the STIF's largest source of income – 39% in 2014⁷⁷.

Table 7. The evolution of the versement transport rates applicable since 1996.

	1996-2003	2003-2013 (Finance Law 31/12/2003, confirmed in 2004 decentralization reforms and in the 2010 Grand Paris Law)	2013-2014 (Finance law, 29/12/2012)	2015-2016 (Finance law, 29/12/2014)	2017 (Finance law, 29/12/2016)
Paris and Hauts-de-Seine Department	2,5%	2,6%	2,70%	2,85%	2,95
Seine-Saint-Denis and Val-de-Marne Department	1,6%	1,7%	1,80%	1,91%	2,12%
(Since 2017) Municipalities from the Hauts-de-Seine, Seine-Saint-Denis, Val-de-Marne Departments located outside the Grand Paris area	Not applicable	Not applicable	Not applicable	Not applicable	2,01%
Others	1,3%	1,4%	1,50%	1,50%	1,60%

Source: compiled by Halpern from data available on <http://www.legifrance.fr>

- *Fare revenues*

STIF is responsible for the fare policy. It counts among those few areas that cannot be delegated to local authorities and municipalities. As of 2014, it contributes to some 39% of public transport funding in the region, incl. employer's reimbursement of monthly passes⁷⁸. The tariff structure was long divided according to the

⁷⁶ Provisions regarding the Versement Transport in the capital-city region are laid down in the General Code of Local and regional authorities (Code Général des Collectivités Territoriales), Article L2531-4. See <http://www.legifrance.fr>

⁷⁷ See summary table in Section 2. Since 2004, State funds are mainly available for capital investment. The Regional Council and counties provide funding that cover for the costs of discounted fares, and local governments also directly fund public transport subsidies.

⁷⁸ Public and private employers in the region must reimburse 50% of their employees' season fares, according to the law of July 4, 1982. In 2014, their contribution represented 9.3% of all operation expenses.

region's polycentric structure⁷⁹, with full integration between modes and operators. Since then, an "All zone" passe (or "Single" Pass) was introduced in the entire region. Since the change of political majority at regional level, discussions are underway in order to increase fare revenues by increasing the price of the Single Pass.

- *Public subsidies*

Local, regional and state subsidies account for 19.2% of STIF's operating revenues in 2014. Since its withdrawal from the STIF's Board of Directors, the state has stopped subsidizing operating costs, apart from school transport. State funds are mainly available for capital investment. The Regional Council and Counties provide funding that cover the costs of discounted fares, as part of their social action competencies. Local governments (municipalities and their groupings, départements) also directly fund transport operators. Their subsidies are intended to cover services running on a deficit.

Other income sources include advertising revenues and proceeds from traffic fines collected at the regional level (2.7% of STIF's budget).

- *A critical discussion of the long-term impact of public transport funding:*

Beyond the Paris Ile-de-France case, it should be noted that current debates about public transport funding are particularly vivid in the context of the post-2008 crisis and following the 4th wave of decentralization reforms. Over the recent period, discussions about capacity investment in public transport and transport policy funding in the capital-city region repeatedly highlighted the need to develop alternative funding sources in a context in which there is little incentive to increase commercial revenues. Recent controversies about public transport funding in the capital-city region should thus be understood in the context of national discussions about evolving state-local relations, whether or not the contribution of businesses to public transport funding should be reduced in the context of the post-2008 crisis, and the extent to which commercial revenues – and the contribution of public users – should be increased.

While most experts recognize the joint contribution of versement transport and increased policy capacity at the local level as having played an instrumental role in the shift away from the automobile city and the development of Stage 2 and 3 policies in a number of French cities, their long-term impact on public transport funding and transport policy priorities at the local level has also been critically assessed. In the context of continued decentralization reforms, it encouraged a project-led approach to public transport that favoured highly visible and short-term political strategies (Desjardins and Sykes, 2014). Insofar as national funding sources encouraged the development of standardized solutions, such as the urban tramway or guided buses, the development of urban public transport infrastructures contributed to prioritizing means over goals, and to local authorities' growing dependency on transport companies and the industry. Furthermore, insofar as it prioritizes home-work transport demand, VT contributes to a general tendency to overlook other forms of transport demands and to detach political decisions about public transport from a comprehensive approach to mobility that would include other transport modes (Offner 2015).

Second, in a number of cities, the changes brought to tariff structures are not linked with debates about revenues: in a recent comparative assessment of public transport networks' performance across a number of French cities between 2004 and 2014, the French Union of Public Transport highlighted the growing gap between increasing numbers of passengers and stagnating commercial revenues (GART 2015). In spite of generating large amounts of fiscal revenues for capacity investments in public transport infrastructure, the introduction of VT did not contribute to reducing the share of public subsidies allocated at municipal level to public transport capacity funding⁸⁰. Since 2008, over 75% of municipalities eligible to introduce a VT have increased rates up to their

⁷⁹ 8 concentric fare zones until 2007, a progressive "de-zoning" process between 2007 and 2011, 5 zones between July 2011 and July 2015. For a discussion see Lemoine, Predali (2007), Beaufils, Sagot (2007).

⁸⁰ According to AdCF (Association des Communautés de France), an organization that brings together groupings of municipalities (intercommunalités) since 1989, there was an average increase of 36 percent of the share of local public subsidies allocated to public transport capacity funding between 2001 and 2008. This organization also produces a number of studies and briefings on policy issues that are of interest to its members, including public transport, and has played a pivotal role in shaping the last series of devolution reform.

maximum level. In those cases in which VT rates were increased by expanding the size of intermunicipal authorities or through the changes brought to the law, the introduction of VT led to the spreading out of urban public transport infrastructure away from urban cores, including low-density areas. In its current form, VT is being criticized of encouraging a negative-sum-game between land-use and transport planning, and of being an indirect driver for urban sprawl (Desjardins, 2008). Third, as part of their complaints against high levels of taxation, business groups' representatives obtained from Prime Minister Valls a concession that enterprises with less than 11 (rather than 9 before) would be exempted from VT.

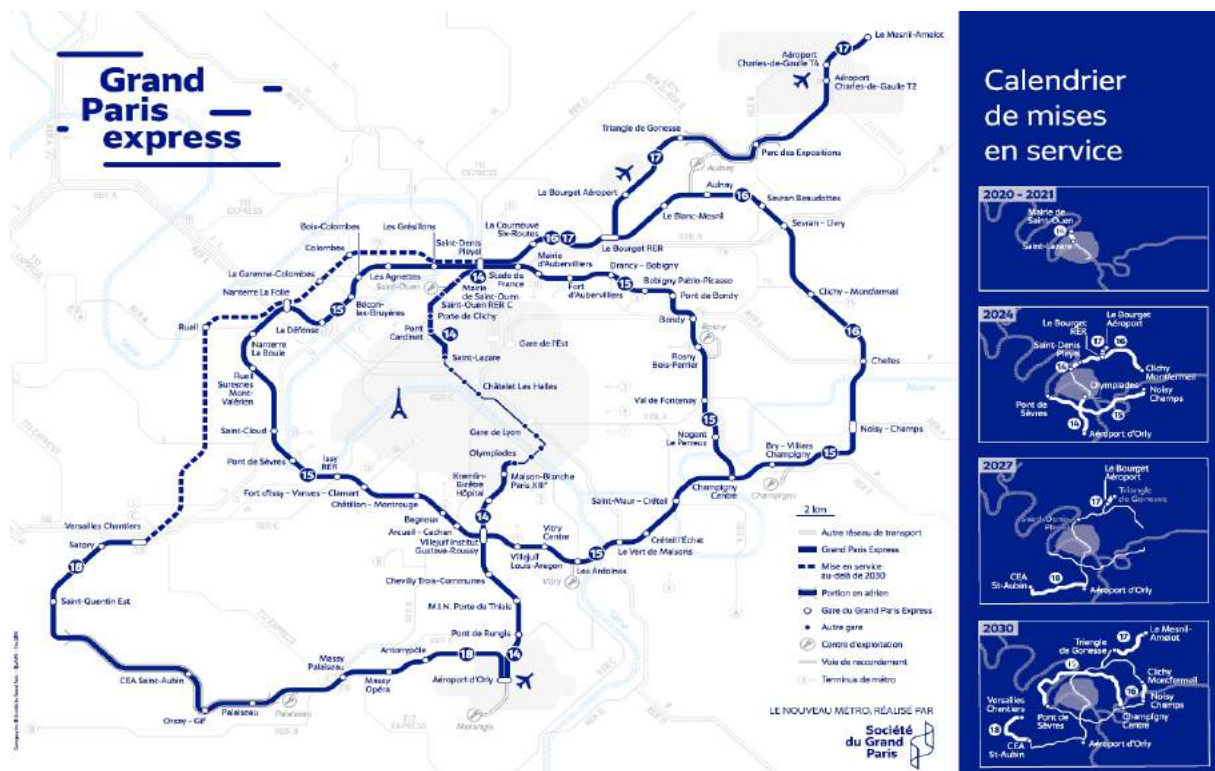
Current large-scale capacity investments in public transport

As of today, the state retains extended powers through its agencies and companies in the development of two large infrastructure projects: Grand Paris Express and CDG Express. Both initiatives showed strong resistance from within the state to grant the region full autonomy over large capital investments in transport and explain why they have led to the creation of a new entity, SGP.

The infrastructure planned as part of the Grand Paris Express network will be progressively introduced between 2018 and 2035 under the authority of the Société du Grand Paris (see Annex 2). This transport authority acts under the authority of several ministries⁸¹. Among other things, it is in charge of developing the new automatic metro line around Paris and across major economic development centres. Together, these infrastructure projects will add up to 205 km of additional metro lines in Paris and the inner suburbs to be built by 2030 (see Map 6, which also includes a revised schedule as of March 2018):

- Several metro line extensions (lines 4, 11, 12 and 14)
- New, automated metro lines (lines 15, 16, 17 and 18)
- 72 new stations, including 17 interconnecting stations
- The average operating speed will be around 60 km/h

Map 6. The Grand Paris Express Project: overview and revised schedule (as of March 2018)



Source: Société du Grand Paris, April 2018 – retrieved from Presentation by C. Barbé, Study visit of the CREATE project to Paris, April 18, 2018.

⁸¹ Ministries of Housing & Regional Equality / Ecology, Sustainable Development & Energy / Finance & Public Accounts.

In the case of the CDG Express project, it was repeatedly postponed since the mid 1990s, due to the lack of consensus between the state and local authorities in the north-eastern part of the region, as well as excluded from successive legislations and agreements about the Grand Paris Express network. The decision to build this rapid and direct rail connection to Charles de Gaulle airport was made in 2016 and will be funded through operating revenues and a new tax on incoming air passengers. It is closely related to the Paris Ile-de-France's application to host the 2024 Olympic and Paralympic Games.

3.5 Remaining challenges in the governance and organization of transport

Together, demographic, socioeconomic, political and institutional factors account for the complex and fragile governance of transport in the capital-city region. Unlike other cities in CREATE, such as London, Berlin or Vienna, where some level of functional coordination is achieved through a single integrated transport authority at metropolitan level, the Paris Ile-de-France region remains characterized by a high level of institutional and functional fragmentation. This partly results from the State's historical "divide and rule" strategy in order to structure the development of the capital-city region and maintain some ability to directly shape its governance, policies and critical infrastructure while at the same time accommodating pressure for decentralization. In this context, the organization of transport stands at the crossroads between different policy dynamics – decentralization reforms, transport governance, spatial planning and environmental policies – it also offers many opportunities for new entrants to develop alternative and small-scale transport initiatives.

The following drivers for change and continuity are expected to be form the basis for transport policy developments:

- A low level of cooperation between main stakeholders and a limited capacity of public authorities to develop and implement a comprehensive approach to urban transport.
- A high degree of institutional, political and organizational conflict which benefits those actors able to develop and maintain active resource-seeking and venue-shopping⁸² strategies over time, such as state elite networks or Left-Green coalitions.
- A growing number of opportunities for new entrants to develop alternative and small-scale initiatives by strategically tapping into other policy domains, e.g., decentralization reforms, environmental protection, spatial planning etc.
- A profound disconnect in the organization of rapid transit systems as opposed to local transport, which results from highly differentiated forms of transport governance across levels of government and across transport modes.

In the following section, the analysis of historical transport developments shows how competition has played a critical role in strengthening policy capacities to promote a shift towards a sustainable urban transportation agenda while at the same time preventing the emergence of robust forms of regional governance.

⁸² See note above, Pralle (2003).

4 Historical transport policy developments: objectives, processes and measures

While the previous section focused on drivers of changes, this section examines the concrete way through which specific combinations of above-mentioned drivers of change shaped historical transport policy developments. This is done by analysing the selection of policy objectives, processes and measures. To begin with, the analysis carried out within CREATE highlights an interesting paradox: the existence of robust and stable policy objectives throughout the largest part of the period under scrutiny, while at the same time, a number of alternative policy initiatives are introduced on a small-scale basis and progressively extended. Three different types of policy developments have emerged in this context and will be successively introduced:

- Rapid transit solutions in close combination with state-led forms of regional governance. These policies were introduced from 1959 onwards and shaped the development of the RER network, motorways and expressways, and today, the Greater Paris network.
- A myriad of small-scale policy initiatives across levels of government and types of organizations in order to promote urban-specific forms of mobility and transport. These policies were introduced by transport policy outsiders and/or subnational authorities from 1970s onwards in the context successive waves of decentralization.
- The emergence of a comprehensive sustainable transport agenda, first in a limited number of cities, before spreading towards the rest of the region. This last type of policy is closely related to the arrival of Left-Green majorities across levels of government from the 2000s onwards.

Moreover, the analysis shows that only a limited number of actors (e.g., state elite networks, Left-Green majorities) were able to overcome fragmentation in order to develop and implement a comprehensive transport agenda. Indeed, institutional competition between levels of government still shapes transport policy developments today. More precisely, there is a continuing tension between, on the one hand, the attempts by state elites and organizations to maintain leadership over transport policy initiatives, the allocation of policy resources and the choice of policy tools, and on the other hand, the growing autonomy of subnational actors as a result of decentralization dynamics. In this context, local authorities strategically tapped into urban regeneration and environmental policy resources in order to develop strong alternatives to national policy objectives and measures, thus fostering the emergence of an alternative urban transportation policy agenda.

Last but not least, the analysis provides some explanation for these challengers' ability to promote policy change in the absence of strong forms of regional governance. It argues that competition and resource-seeking strategies are the main explanatory factors in explaining transport policy developments in the capital-city region. This form of policy change is, however, a source of socio-spatial differentiation and inequalities. More generally, it accounts for the limited comprehensiveness of the alternative transportation agenda across transport modes and the region.

4.1 Prioritising rapid transit solutions in a context of state-led regional governance (1959-1977)

As the capital city-region was experiencing major urban and demographic growth, investment in transport infrastructure and services has been considered critical to the development of a polycentric model and to decongesting the heart of the agglomeration. Car use and ownership was growing steadily. This was partly due to this transport mode's emerging status as a symbol of freedom and modernity and to the central government's efforts to securing opportunities for the national car industry⁸³. Few resources were pulled into modernising and extending public transport networks. The existing regional public transport system was unable to cope with the growing demand for transport. The rail-based network suffered from chronic underinvestment. The Paris Metro only served the city of Paris and was still operating with pre-war rolling stock. Only 3 km of additional metro lines were built between 1948 and 1958. Suburban railways were extremely limited. As for buses, which had replaced tramways after their dismantling in the 1930-1940s, their daily operations suffered from traffic congestion. Moreover, these transport networks were poorly integrated between one another.

⁸³ Unions and the industry were directly involved during consultation phases as part of the General Planning Commission (Hayward and Watson 1975).

In this context, the Paris District sought to foster cooperation between a large number of actors and policies in the region, including those promoted by state elites and organizations. Major transport initiatives were developed during this time frame, including the development of rapid transit transport solutions. All of these aimed at containing rapid demographic growth and urban sprawl as well as exploring new technologies that could later be exported worldwide. In spite of these coordination mechanisms at regional level, policy implementation highlights the growing autonomy of state organizations as well as various types of institutional, social and political resistance against the priority given to mass transit transport solutions.

4.1.1 State elites and organizations take the lead

Until the mid-1980s, transport in the Ile de France region was a world of engineers, planners, state agencies, and civil servants in competition and, at the margin, some influential mayors and ministers⁸⁴. Discussions among state elites and organizations were strongly grounded in Pre-WWII controversies regarding the networks' form and function (e.g., star-shaped or polycentric, regional or national), the need to ensure public sector control over ownership, capacity investment and maintenance, and the distribution of power between levels of government. In this context, the creation of powerful actors at state level – RATP and SNCF for public transport, the National Roads Directorate for car traffic – opened new opportunities to develop rapid transit systems in the capital-city region. Notwithstanding fierce levels of competition between pro-rail and pro-car coalitions, these elite networks shared a similar interest in developing mass transport solutions that could later be transferred to the rest of the country and beyond. The choices that were made during these years, the way they were implemented in terms of policy tools and forms of governance, have shaped transport policy developments and are still very relevant today.

Technology-led transport policies in the name of the national interest

Similarly to ongoing debates in London about the Victoria line (see D4.2 London report), the Paris Ile-de-France region was considered a major showcase for national initiatives and a preferred location for developing new technologies and systems. Under the pressure of national transport companies (SNCF, RATP), the construction and automobile industries, and with the support of major workers' unions, national investments in rapid transit systems were promoted in successive planning periods⁸⁵ in the name of the wider national interest.

Planning documents were entirely produced by state elite bureaucrats with the support of President de Gaulle and under the leadership of Paul Delouvrier. In adapting national policy preferences to the capital-region context, rapid transit transport solutions were considered a preferred way to increase polycentrism and reduce the car-oriented city model's negative externalities over land consumption⁸⁶. Ideas behind this infrastructural design were driven by a rational and positivist approach, according to which the rise of car use called for increased road capacity whereas the planned Villes nouvelles required major transport infrastructures in order to attract real estate developers and economic activities⁸⁷. In order to ensure implementation, political agreement was negotiated between the Gaullist and the Communist Party, which held a large majority in most of the municipalities surrounding Paris (except the west)⁸⁸. By contrast, local interests such as those of municipalities and their populations of commuter workers and immigrants were regarded as 'low politics' and their demands as obstacles to the development of the greater good.

⁸⁴ This section draws on Halpern, Le Galès (2015).

⁸⁵ The way through which the national state ensured direct support to industrial sectors in decline or highly competitive industrial sectors is often referred to as "high-tech Colbertism" (Cohen 1992). It seeks to foster the emergence of national champions and technological innovations under the leadership of state elites and through the strategic use of great projects, public tendering and limited competition (Hayward and Watson, 1975). In transport, the high-speed train system (TGV) was developed according to this model (Fourniau 2001).

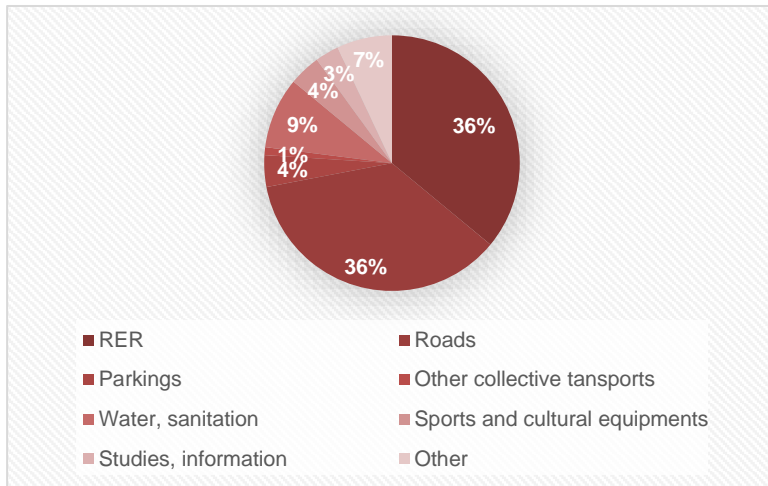
⁸⁶ See List of key spatial and urban planning documents, Annex 1.

⁸⁷ Group interview, WP4 CREATE project, Paris, January 29, 2016.

⁸⁸ The so-called red belt, where most firms and the working class were located.

The national political and policy priorities embodied in the 4th and the 5th national plans were translated in regional planning documents (PADOG 1961; SDAURP 1965, revised in 1969 and 1976), and in the District of Paris' capital investment spending during the 1960s (see Graph 3). During this period, priority was given to the development of two high-capacity rapid transit networks: a rail-based public transport network, the RER, and the regional motorway network.

Graph 3. Capital spending, investments, District of Paris (1962-1968).



Source: reproduced from Larroque et al. (2002).

The Regional Express Railway network

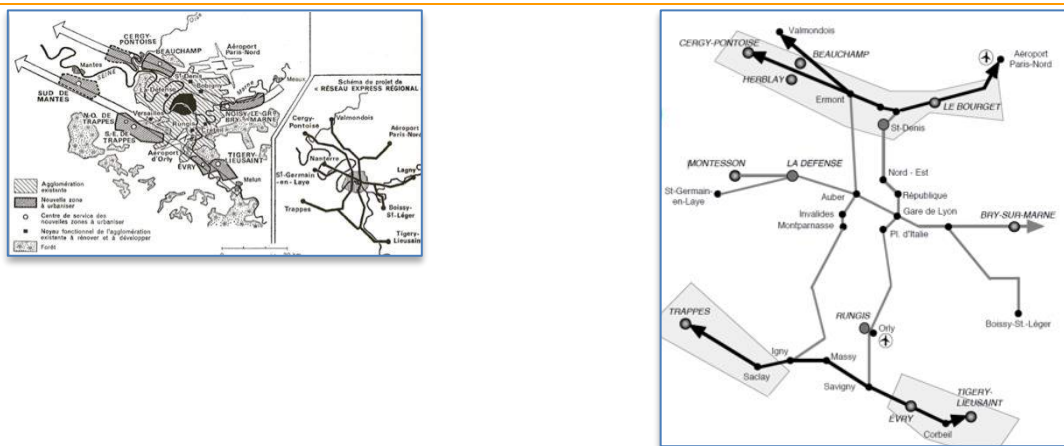
The Regional Express Railway (RER) network was designed as an efficient rail-based public transport network for commuters coming into Paris. This proposed network was designed during the pre-WWII period by the RATP's ancestor and was eventually picked up by RATP during the 1950s. It was originally planned in an H shape (see Figures 8a & b), including two north-south routes. While it runs underground in the Paris city centre, it serves as a commuter rail in the suburbs. During this early planning period, the SDAU tried to ensure the future network's coherence with spatial planning objectives. More precisely, Delouvrier's team suggested the RER was meant to: 1) provide links between the main metro and railway stations within Paris; 2) compensate for the lack of suburban transport links; 3) structure transport flows at the regional scale and facilitate access to the centre. It was formally adopted in the 1960s and, in order to reduce investment costs and when possible, public authorities chose to reopen or modernize existing railway infrastructures. This justified granting the two companies the shared operation of the network, thus leading to long-term rivalry between both operators and a direct impact on daily operations⁸⁹.

As RATP and SNCF competed against one another in order to gain leadership over the new system, both companies increasingly questioned the District of Paris team's infrastructural and technical choices and used every opportunity to impose their own preferences over the spatial planning objectives laid down in the SDAU. Planning the RER network played a critical role in strengthening their role vis à vis public authorities across levels of government. Even though both companies' management was selected – and still is – by the State, this large-scale infrastructure project offered an opportunity to gain considerable resources in terms of knowledge, expertise and influence up to a point when the State administration was considered to have lost most of its supervision capacity (Larroque et al, 2002). During the planning process, both RATP and SNCF pushed forward their own preferred technical and engineering solutions (Latour, 1987) and increasingly questioned the District of Paris team's infrastructural and technical choices.

⁸⁹ Although RATP had dominated the planning of the RER system until the 1960s, Prime Minister Chaban Delmas required for SNCF to be involved as well. This raised a number of compatibility issues, some of which have never been resolved. SNCF and RATP used different electrification systems, and as a result, different vehicles. The training of their staff as well as career advancement plans also differed considerably from one company to the other.

In doing so, RATP and SNCF followed different strategies. In the case of RATP, most of the companies' activities had been concentrated on modernising the metro network through small-scale improvements: increasing speed through the introduction of new rolling stock and technologies and improving the service's quality and efficiency through engineering works in stations and automated flow management techniques. The RER project offered RATP an unprecedented opportunity to develop new skills and resources. It massively invested in additional human resources, mostly trained engineers, and created a new division entirely devoted to infrastructure development (Margairaz, 1988; Gaillard, 1991). As of 1961, a department for studies on urban transportation was created in order to allow RATP disseminating its know-how worldwide. The project also justified intensifying relationships with local municipalities and elected representatives, parts of which were ensured through the strong connections between workers' unions and the Communist Party. This included the production of yearly reports and the development of active lobbying strategies at subnational levels of government. Nevertheless, the pivotal role played by the RER project in the company's rapid development shaped its preference for large-scale rail-based infrastructure projects to the detriment of other forms of public transport.

Figures 8a & 8b. Initial RER network proposed by the 1965 SDAU, Source: SDAU 1965.



Similarly, the SNCF primarily focused on targeting state representatives and organizations, and progressively concentrated a vast share of its organizational resources in the development of the high-speed national network as opposed to regional railway services and infrastructures, which were regarded as less prestigious. In spite of such differences, these organizational resources eventually allowed both companies to bypass regional spatial planning objectives in order to promote their own policy initiatives and solutions through active lobbying at national level.

The development of the regional motorway network

In spite of the attention given to the development of public transport, the largest share of transport policy investments in the capital-city region favoured road infrastructures. From 1945 until the late 1990s, the development of road capacity was considered the main solution in order to reduce traffic congestion and to accommodate growing transport demand. This "all-car" paradigm was particularly prevalent among State elites but gradually spread towards subnational levels of government and professional worlds⁹⁰. Separate traffic and grade separation was advocated in order to facilitate flows of motorized traffic and ensure the capital-city's function as the main national transport hub. This policy was directly supervised by the powerful national road directorate in close cooperation with state representatives in the region. The District of Paris' preference, as repeatedly acknowledged by Delouvrier himself, was to favour car use outside Paris as the most efficient solution to ensure accessibility to the Villes nouvelles (Flonneau, 2003). Every spatial planning document that was published during this period highlight these objectives as a major priority.

⁹⁰ See the comparative work done by Lacroart at IAU: <http://www.villetransports.fr/assets/Themes-de-travail/2015-Autoroutes/autoroutespres-T2-P.-Lacroart.pdf>

Most large road infrastructure projects had been initiated prior to the introduction of the SDAU. However, this strategic planning document accelerated the extension of the road network. A 900-km network of motorways was included in order to enable high speed connections. Continuity over time was ensured through the continued efforts demonstrated by the national road directorate in order to maintain these policy objectives and measures high on the agenda, as well as to ensure sufficient resources in order to fund and enforce them. A series of projects aiming at developing a dense network of urban motorways were elaborated in cooperation with local state representatives (*préfecture de la Seine*) and the District of Paris' support. Not all proposed roads were built but those that were effectively developed absorbed a large share of the State's available investment capacity in the region - the 4th and the 5th Plans respectively invested 60% and 63% of total investment capacity in roads (i.e., some 3 billion Francs). Due to the mobilization of massive institutional, political and financial resources, and in a context in which little opposition could be raised by local authorities, a large share of the proposed network - radial routes, the Parisian ring road and the urban motorway alongside the Seine river - were achieved by 1975. Remaining segments were developed in a different economic, institutional and political context, thus highlighting the remarkable ability of the National road directorate to pursue large-scale infrastructure projects over time. A good example lies in the A86 motorway – a 2nd ring road around Paris located between some 2 and 7 km away from the Boulevard périphérique – which was included in the 1960 PADOG and only completed by 2011.

These policy choices had a long-term impact over transport patterns in the region. At first, the motorway network follows a radial pattern with Paris at its center and the “villes nouvelles” as secondary hubs. The proposed network also provided direct routes between the suburbs through to the centre of Paris. The Villes nouvelles particularly benefited from road developments with the opening of the western highway towards Mantes (1963), the A1 (1968) and later on the A15 which serves the new town of Cergy-Pontoise, located toward the west of Paris. Such thinking also applied to the city of Paris itself, for which no autonomous transport policy objectives were developed, and where national bureaucrats retained the upper hand in elaborating and implementing transport policies. Most efforts were devoted to developing the road network as a preferred strategy to reduce congestion. The Paris ring road (*Boulevard périphérique*) (1953-1973) was completed in 1973 and created a physical barrier between the city of Paris and municipalities in the inner suburb area. In addition, a highway that was planned alongside the right bank of the Seine river⁹¹ (1966) also offered a good example of the roads projects that were developed during this period. In addition, some efforts were made by state representatives in Paris (*préfecture la Seine, préfecture de police*) in order to adapt the inner city to the automobile and reduce congestion by increasing road capacity throughout the city⁹².

Although the role of State elites were pivotal in the development of motorway projects in the capital-city region, the city of Paris' technical services, together with architects and urban planners, also contributed to promote this thinking by developing the “Paris motorway plan” in close cooperation with architects and urban planners, in order to ensure connection with the centre of Paris (Figure 9).

Figure 9. Proposed urban highways in the Paris inner city



Source: <http://www.slate.fr/story/68489/voies-sur-berges-france-pompidou>

This pro-car policy intensified in the late 1960s in a context in which public transport solutions were losing momentum on the national political agenda.

⁹¹ Voie sur berges rive droite, renamed Voie George Pompidou in 1976. Cars were banned this major urban expressway following a decision by the Paris Council (2016).

⁹² In the case of the Boulevard Montparnasse, Avenue Terne and Boulevard Malesherbes, road capacity increased respectively from 13.5 to 21 meters, 16.5 to 22 meters and from 14 to 22 meters.

Following the choice made at national level to prioritise the development of the high-speed train technology and system, public transport in the region found itself without a champion and additional opportunities were given to pro-car alternatives and in a context in which prominent national political figures supported this approach. This was particularly the case of George Pompidou, who served as President De Gaulle's Prime Minister (1962-1968) and was eventually elected President (1969-1974) after he became the leader of the Gaullist party (UDR). During his term as president, he pursued and intensified a modernizing policy agenda, and put a specific focus on motorway infrastructure, which also extended to large urban areas. Unlike his predecessors, he believed this pro-car approach should also be extended to urban areas - "the city must adapt to the automobile" (political speech, 1971) - and promoted a car-oriented city model⁹³. In this perspective, car accessibility was considered a key dimension of the modernizing agenda in the region and its promotion was prioritized throughout policy documents.

Similarly to the rationale observed in rail-based infrastructure, a large-scale motorway programme was developed at national level in order to allow the construction industry to experiment with a new generation of tunnels. The government's decision to legalize public-private partnerships in order to finance and build road infrastructure also contributed to this new momentum. In the capital-city region, a large-scale initiative jointly developed by state representatives and urban planners within the city's administration proposed developing a network of subterranean highways under Paris, with a series of 8 entry points located in the inner-suburbs areas and directly connecting the planned *Villes nouvelles* to the centre of Paris. In addition, two urban motorways were built on both sides of the Seine River, including the so-called "Pompidou road" whose development was placed under the President's direct leadership.

In spite of such support to the car-oriented approach, the decision made by Prime Minister Chaban-Delmas (1969-1972) to withdraw State funding to RATP and, indirectly, to public transport, opened a wave of social protest.

Concluding remarks

To some extent, the District of Paris did succeed in increasing coordination between transport infrastructure developments and spatial planning objectives. This form of policy-making is often referred to as a period of "strong leadership" from the State and in particular the De Gaulle – Delouvrier tandem: for some, it is considered as a "golden age" in transport planning which was irremediably lost following decentralization reforms but justifies State interventionism; by contrast, others consider it as technocratic, contrary to the functioning of any democratic regime and strongly oppose attempts at reviving State interventionism.

Nevertheless, transport policy processes in the capital city region also remains characterized by a strong disconnect between policy objectives, which aimed at strengthening these infrastructures' contribution to limiting urban sprawl, and resource-seeking strategies at implementation stage.

4.1.2 Competitive resource-seeking strategies

In a context of growing political and institutional competition, a growing number of stakeholders sought to shape transport policy developments as part of their resource-seeking strategies. Yet none of them promoted an alternative to the state-led regional governance model. The creation of STP had not contributed to overcoming fragmentation in the organization of public transport. It lacked financial autonomy and sufficient authority to effectively shape transport planning and operation in the capital city region. Even though local authorities were formally represented in the STP's board and could, as such, discuss transport investments and tariffs, this organization remained under state's control.

In addition, the focus on rapid transit road and rail connexions was achieved at the detriment of local public transport, thus fostering a number of claims in support of increasing the public transport offer and strengthening the role of local authorities in transport governance.

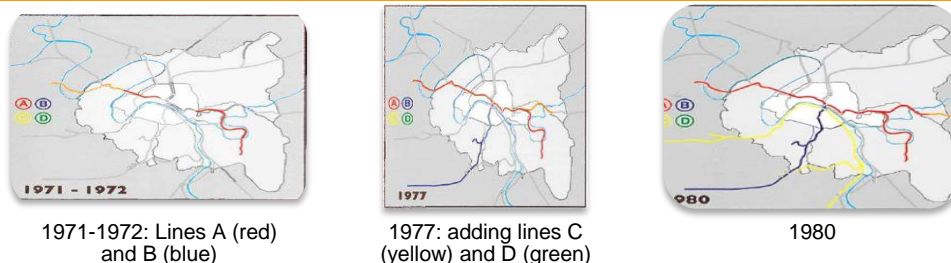
⁹³ In the case of Lyon for example, this led to the development of the Fourvière Tunnel and to locating the connection between major national – and European – highways in the very heart of the city.

SNCF-RATP rivalry over the RER network

The planning and implementation of proposed road and rail infrastructures started during the final years of Delouvrier's mandate as head of the District of Paris, thus opening new opportunities to limit the SDAU's effectiveness. State administrations (e.g., roads, housing, etc.) sought to maximising their own resources and promoting their own policy preferences as opposed to the principles laid down in the 1965 and the 1972 SDAU.

The development of the RER network (see Map 7a below) is particularly representative of such limitations to heroic decision-making and sheds light on profound political and institutional divisions which, up until now, constrain transport policy developments at regional scale. The first line (RER A) opened in 1977⁹⁴. In spite of being recognized as a major achievement, it differed from the original plans in a number of ways. Politically charged discussions between local mayors and state authorities accounted for chaotic planning and permanently weakened the system's reliability and efficiency. In addition, continued conflicts between SNCF and RATP also stymied development of the RER network (Sfez 1981) as shown by the number of controversies over the network's development. Both companies considered the RER project a major opportunity for strengthening their respective positions and ensuring access to considerable resources for capital investment in the following decades. It also opened some opportunities for major organizational development and experimenting with engineering and technical solutions, some of which emerged as hotly debated issues. The choice made to build a series of large underground stations in the centre of Paris led to a first controversy over the project's costs but contributed to its international fame as an engineering work. Another controversy concerned RATP's choice to increase the network's centralization at the Chatelet-les-Halles station, a massive intersection of RER and metro lines: even though the principles laid down in the 1972 SDAU highlighted the need to increase the network's polycentrism and to develop within-suburbs connections, the construction of a single underground tunnel would undoubtedly contribute to traffic congestion on the RER network. In spite of such controversies, RATP teamed up with the regional Préfet in order to ensure central government's support. The station opened in 1977 and despite later efforts to increase polycentrism on the network, it is still very much considered the capital-city's main public transport hub⁹⁵.

Map 7a: The extension of the RER network (Phase 1, 1971-1980).



NB: New lines are represented in orange in the above maps. Source: IAU Ile-de-France

All in all, the RER project played a pivotal function during these companies' early years and exerted a longer-term impact on their respective preferences and influence-seeking strategies. First it contributed to shaping both companies' preference for rail-based projects to the detriment of other forms of public transport. Second, in ensuring both companies with a considerable source of income for capital investment, the RER project also led to somewhat neglecting operation and maintenance costs. Together, these developments account for the RER also having been highlighted as an example of chaotic decision-making (Sfez 1981; Hebbert, 2012). It is indeed

⁹⁴ The central part of the network's planning and completion was achieved between 1962 and 1977, but it was continuously expanded until 2006 and today, as part of the Grand Paris Express project (Morange, 2012).

⁹⁵ A number of public transport networks intersect at this station (3 RER lines, 5 metro lines and a number of buses) and RATP estimates show that over 26 million travellers commuted through the station in 2015. Its centrality was further increased through the concomitant opening of a large shopping centre at Forum Les Halles. In the 2000s, a major urban regeneration programme was led in this emblematic public space (see further on, section 4.3 about the pedestrianization of the Montorgueil area) with some measures aiming at redistributing flows of passengers and visitors both under- and over-ground.

considered a symbol of chaotic planning, bad management, lack of reliability, ageing infrastructure and continued rivalry between RATP and SNCF.

Resistances from below: local authorities, unions and emerging urban social movements.

In addition to within-transport dynamics, the growing mismatch between socio-spatial dynamics in the capital-city region and the available transport policy offer fuelled a growing number of protests. Congestion on the road network and delays on the bus network added to the users' discontent, which culminated during the 1968 strikes as in the rest of the country. First, unions and public transport users jointly protested with the support of political parties from the left against the tariff structure and highlighted the poor quality of public transport services as well as the need for further investment⁹⁶. These protests in the capital-city region found some echo in other cities in France, where elected mayors in Grenoble, Lille, Lyon and Marseille asked for increased financial autonomy and support in order to develop ambitious urban transport systems. Together, these demands contributed to the introduction of a local business tax, the *versement transport*, which was first introduced in the capital-city region in 1971 and in large medium-sized cities in 1973 in order to fund transport infrastructure projects (Gallez 2010)⁹⁷. As Prime Minister Chaban-Delmas threatened withdrawing State funding to RATP, the newly-created social-democratic workers' union (CFDT) suggested introducing a single transport card, the cost of which would be supported by employers – a policy measure that was introduced in 1982 following the election of a Left majority at national level under President Mitterrand. More generally, this first stream of social protest contributed to strengthening the rise of the Socialist Party in urban areas and to the development of the decentralization reform agenda⁹⁸.

In addition to this first wave of protest, environmental movements and civil society organizations increasingly mobilized against the dominant role of the automobile. Anti-road protest was nothing new but grew stronger as these groups joined the urban social movement (Mayer 1997). Together, they called for improved quality of life in the name of protecting the urban environment, defined broadly and including architectural heritage, noise and air pollution, and safety issues. As car mobility took off, concerns over road congestion in urban areas and high traffic fatalities increased. In the city of Paris, heritage protection groups protested against the damages caused to the historic city-centre of Paris by the pro-car policy and proposed urban motorways. They urged public authorities to put an end to new road developments⁹⁹. The first pro-cycling demonstration was organized in order to protest against the risks associated with the car-oriented city. These demands found some echo in the political sphere during the 1974 presidential campaign and the 1977 legislative and municipal campaigns, during which new issue linkages between transport issues and growing environmental concerns were discussed. Ecological concerns were championed by a new generation of leaders and grassroots' organizations who opposed the Gaullist modernizing agenda across policy sectors (e.g., nuclear energy, motorways, etc.). In a changed political – the election of President Giscard D'Estaing in 1974 initiated the decline of the Gaullist movement – and economic context, several highway projects in the capital city-region and outside Paris were put on hold or abandoned.

Only parts of the proposed routes were effectively built – mostly alongside the Seine River. The highway project alongside the left bank of the river Seine was abandoned in 1974, followed by the Vercingetorix road project in Paris in 1978. Indeed, most urban motorway projects were abandoned or implemented on a smaller scale by converting existing streets into higher capacity urban transit roads. Similarly, some attempts were made to convert these proposed open-air urban motorways into covered road projects, but the rise in car costs highlighted the need to encourage energy-efficient alternatives to road transport and car use through state policies and objectives.

⁹⁶ The following slogans ringed vividly at that time due to the pun it included: "l'Etat ne nous transporte pas, il nous roule" ("the state does not transport us, it's cheating us"). See also A "Black book of transports" was also published in order to highlight their demands (Flonneau, 2003, 196).

⁹⁷ It was first introduced in large urban areas (Paris, Lyon, Nantes, Strasbourg, etc.), and later, in smaller cities provided they were able to create intermunicipal cooperation.

⁹⁸ For a rapid overview, see Annex 2.

⁹⁹ During those years, the city's architectural heritage emerged as a symbolic value of prestige (Hai-Vu et al, 2013).

Together, these drivers for change – weakening forms of regional governance, political pressure from cities outside the capital-city region, urban and environmental movements in Paris and changed political and economic context – led to the development of alternative solutions across levels of government and transport organizations. This is further explored in the following section.

4.2 The ungovernable capital-city? Increased competition and small-scale innovations (1978-1997)

In the capital city region, the urban transport agenda emerged at both the national and the municipal levels. Nevertheless, this had a limited impact on transport policy developments in the capital-city region in the absence of strong forms of regional and urban governance. It should be noted, however, that transport policy objectives remained stable throughout this second sequence as successive planning documents reiterated the policy priorities that had been defined in the late 1950s. Unlike the situation observed in other large urban areas in France, the decentralization agenda followed a different scope and rhythm in the capital-city region. In the transport policy domain, this particularly benefited large transport organizations and bureaucracies, whose interests remained in line with the objectives designed as part of the modernising agenda and primarily focused on developing high-capacity transport infrastructures. The largest share of transport investments and funding is allocated to these projects.

By contrast, the development of alternative transport policy initiatives – mostly at the local level – results from strategically tapping into the resources made available in other policy domains such as decentralization reforms, environmental protection and urban regeneration. More fundamentally, these policy initiatives advocated the development of an urban-specific transportation agenda that would address rising urban mobility issues.

During this period, contrasted types of transport policy measures were introduced in the capital-city region:

1. Infrastructure investment in rapid transit systems that is, both roads - extending the motorway network – and in public transport - extending the RER and the metro networks.
2. Policy measures aiming at mitigating the role of the car and in support of public transport:
 - Traffic calming measures, parking management, bus lanes and cycling routes
 - Urban tramway systems
 - New funding sources, new tariff structure

4.2.1 Addressing the specificity of urban transport

As a follow up to the late 1960s' social and urban movements, some state elites, urban planners and transport experts recognized the need to address the negative externalities of national transport policy objectives and programmes. This included two series of policy initiatives. First, the specificity of urban transport was acknowledged in the context of the decentralization agenda and justified the development of new policy resources at national level in order to support policy developments across a number of cities outside the capital-city region. Second, traffic mitigation measures were developed by the National Road Directorate in order to address concerns related to road safety and congestion in large urban areas. Together, these developments contributed to the strengthening the urban dimension of transport resulting into the shift from transport towards urban mobility (see D4.1 report) and to the invention of a new policy domain at national level, which held different characteristics than those observed in the transport sector.

The invention of a new policy domain at national level.

Following the adoption of the versement transport and in view of the growing number of transport initiatives in large medium-sized cities in France, some state elites and organisations recognized the need to foster the development of new transport solutions better fitted for dense urban areas as well as the emergence of national champions that would ensure their promotion by channelling local authorities' increased investment capacity. Evolving spatial planning policy objectives and pressure from elected representatives outside the capital-city region also contributed to the development of an urban transport policy framework, which primarily benefited large medium-sized cities. This changed approach was particularly fruitful outside the capital-city region as decentralization reforms opened additional opportunities for local authorities to shape transport initiatives pertaining to the modernizing paradigm.

Even though a larger share of funding was made available at national level for public transport initiatives in urban areas¹⁰⁰, little interest was found among major transport companies to develop alternative transport systems. In order to foster the emergence of new technologies, the transport Ministry chose to organise a public competition (Concours Cavaillé, 1975) that would reward the invention of a novel urban transport mode; that is, a transport mode that would be guided, using electric power and able to circulate on roads¹⁰¹. Two different proposals were eventually selected to be developed: the “standard urban tramway” model (Tramway Citadis), which was developed by Alstom in 1980 and introduced in Nantes in 1985 on the one hand, and a light rail metro model, developed by Matra (formerly Lagardère Group and Siemens Transportation Systems) and introduced in Lille in 1983.

In the context of the rising urban transport agenda, the arrival of a younger generation of traffic planners and engineers also led to some adjustments in national transport policy tools and techniques in order to better address the specificity of urban transport. To begin with, some changes were brought to those policy tools and techniques pertaining to the production of information and knowledge about transport demand. During the post-WWII period, transport engineers and traffic planners working in national administrations and their technical studies units had drawn on policy tools and traffic modelling techniques imported from the United-States, and favoured the use of generic analysis tools that could be applied throughout the national territory (Debizet, 2011). Economic appraisal techniques, such as cost-benefit analysis, feasibility and impact assessment studies, business cases etc. mainly drew on quantitative analysis. But from the 1970s onwards, a new series of policy tools and methods were developed at national level in order to support the development of urban transport planning and policies and to foster a certain level of standardization among local authorities and transport companies (Mazoyer, 2011)¹⁰². In addition, a national household survey was introduced in 1976 in order to produce knowledge about transport behaviours across large cities¹⁰³ and to understand the modal shift structure by collecting data about urban movements, namely, their origin, final destination and reason. Drawing on a standardized methodology and techniques imported from the United States, the national household survey primarily sought at collecting quantitative data about transport behaviours and their evolution in time. Indeed, the household survey was done every 10 years under the leadership of the Transport Ministry and its regional technical services.

Finally, some transport experts advocated, from the earliest stage, a focus on “how” people travelled taking into account the qualitative dimension of transport patterns and behaviours,¹⁰⁴. This included moving away from an individual-centred approach in order to include additional categories that would help putting these transport behaviours back into a broader spatial and social context. In the capital-city region, Jean-Pierre Orfeuill progressively emerged as a leading transport expert in the region and played a pivotal role in advising regional stakeholders (IAU, STP then STIF, the region) on complementary needs in terms of data production and alternative ways to analyse it.

Together, these initiatives contributed to the accumulation of knowledge and expertise about urban transportation at national level.

¹⁰⁰ This tendency is visible from the 6th Plan onwards, in which the maximum threshold for investments in public transport is set higher than that for road infrastructures, with respectively 6,7 billion francs against 5,8 billion francs. Nevertheless, road investments were allocated to the development of new infrastructure whereas public transport investments primarily aimed at improving the existing network.

¹⁰¹ See the catalog edited by IAU on the occasion of the exhibition “Tramway, une école française” (IAU, 2014). Available at: https://www.iau-idf.fr/fileadmin/NewEtudes/Etude_1062/tramwayWeb2014.pdf

¹⁰² In a circular published in 1973, the transport Ministry states that “Above all, it is essential to avoid the need for each city to reinvent a new forecasting method. Therefore, we need to develop models as universal as possible, which only entails limited possibilities to include context-specific parameters”. (IAU, 2014)

¹⁰³ As the possibility to introduce the versement transport was later extended to smaller municipalities (Gallez 2010), the household survey was also extended to medium-sized cities (EDVM) and peri-urban areas (EDGT).

¹⁰⁴ Interview Orfeuill, 16/04/2015.

Traffic mitigation measures as a way to ensure road safety

In parallel to the rising urban transportation agenda, traffic mitigation measures were also being introduced in national road policies under the leadership of the roads directorate and with the support of local state representatives at the implementation stage (Spenlehauer, Hamelin 2008). More specifically, two types of measures were introduced across levels of government as part of the growing concern for road safety issues. First, this concerned policies aiming at raising awareness among car-drivers, the wider public and local authorities such as the campaigns launched in 1982 (“Réagir”) and 1983 (“Objectif moins 10 %”) by the Ministry of Public Works¹⁰⁵, or the program launched by CETUR¹⁰⁶ in 1984 about “Safer City, neighbourhoods without accidents”¹⁰⁷ that provided guidelines for the experimentation of new traffic calming measures by local authorities. On the other hand, some policies aiming at reducing speed on the network were introduced at the national level: tighter speed limitations were introduced in the Highway Code (*Code de la route*) such as a 50 km/h speed limit, and 30 km/h zones.

In the capital-city region, as in other cities in France, few local authorities implemented these measures and those that did mainly centered on road safety aspects and rarely favoured a restrictive approach to traffic calming. Speed bumps were used as the main enforcement measure and they were introduced on selected segments of the road network. All in all, these initiatives were not introduced as part of an integrated approach to car use reduction and lacked consistency in terms of their location within urban areas as well as in terms of being coordinated with other traffic mitigating initiatives.

Some interest in cycling policies also emerged during this period and closely related to the traffic mitigating agenda due to safety issues. At national level, the State invested in a first generation of cycle paths and lanes. However, following the 1982 decentralization laws, responsibility over road management was transferred to the *Départements*, which lacked, at the time, both the manpower and financial capacity to develop a proper cycling network. Over time, these initiatives contributed to initiating a change in representations about traffic speed and to increased awareness and knowledge among those local authorities wishing to develop alternative policy solutions at the margins.

All in all, these initiatives only had a limited impact on transport policy developments in the capital-city region due, on the one hand, to the state and its representatives’ reluctance to devolve additional powers to local authorities, and to the policy choices of local authorities themselves.

4.2.2 Business as usual and the politics of transport in the capital-city region

In spite of the emergence, at national level, of an urban transport agenda and of rising concerns for safety issues, transport policy objectives in the capital-city region – as defined in state-region contract plans and the 1972 SDAU – still followed the principles laid down during the post-WWII period as part of the modernising agenda. Such stability was mainly due to the pivotal role held by State elites in transport policy-making and implementation in the region. Updated funding priorities were defined at State level and managed by its representatives (*préfets*) in the region, whereas elected representatives nominally executed these decisions.

The analysis of transport politics accounts for such levels of stability in the capital-city region. This is done by looking successively at RATP-SNCF rivalry and municipal competition.

Growing RATP-SNCF rivalry and its impact on transport policy developments.

Unlike the situation observed in other large urban areas, transport planning and policies retained some level of continuity in the capital-city region due to the role of State elites and organizations. The State reluctantly devolved authority to municipal and regional authorities in the region. In spite of the 1976 and the 1986

¹⁰⁵ Ministère de l’Équipement

¹⁰⁶ The CETUR is a center for studies on networks, transport, urban planning and public works (CETUR) under the auspices of the Ministry of Ecology. Since January 1st, 2014, it has been replaced by the CEREMA.

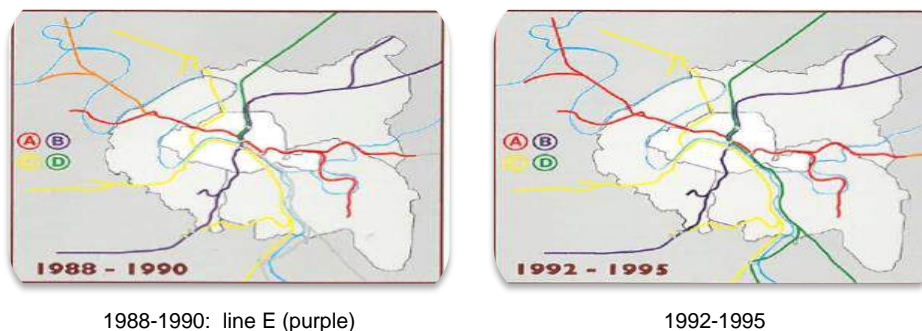
¹⁰⁷ Ville plus sûre, quartiers sans accidents

regionalization reforms, State administrative elites, affiliated with RATP and SNCF as well as successive Prime Ministers' cabinets, retained the upper hand while stymying development of alternative policy proposals and plans by subnational levels of government.

State representatives appointed the regional executive, nominated half of the regional public transport authority's members and decided upon levels of investment and their allocation within the region and between transport modes. Indeed, SNCF and RATP increasingly prioritised direct relationships with the State in order to shape transport policy priorities, thus contributing to limit STP's role as a policy-making arena¹⁰⁸. The dismantling of the District of Paris further contributed to nationalizing policy-making processes in transport, thus contributing, on the one hand, to reducing formal opportunities for local authorities to channel their demands and on the other hand, increasing both SNCF's and RATP's ability to bypass local demands. In the absence of a single public transport organizing authority at regional level, RATP and SNCF exerted a *de facto* monopoly on transport expertise in the region and played a critical role in developing local transport and mobility plans. Insofar as competition between local authorities prevailed, transport policy choices were shaped by resource-seeking strategies. In this context, political parties – through the possibility for local representatives to hold multiple mandates – and workers' unions played a critical role in channelling local demands and ensuring their representation at State level.

In this context, infrastructure and network developments were primarily shaped by continued rivalry between RATP and SNCF who jockeyed to lead regional rail-based transport provision and aggressively competed for new infrastructure projects to the detriment of system efficiency. Each of them focused on extending their respective rail-based networks in the region, with a specific interest on connecting existing and new railway lines in Paris. RATP favoured a technologically-led approach in order to extend the metro network. In the meantime, SNCF self-promoted itself as a transport service provider in the suburbs and operator of a growing regional rail network. During the 1980s, some 16 extensions were brought to the metro system in order to serve the areas located on both sides of the Boulevard périphérique as well as adjacent municipalities, the Business district of La Défense, or some Villes nouvelles. By the early 1990s, the RER network took shape. Most of the public transport investments planned in the 1960s were in their final phases of implementation (see Map 7b).

Map 7b: The extension of the RER network (Phase 2, 1988-1995).



NB: New lines are represented in orange in the above maps. Source: IAU

RATP-SNCF competition also fuelled construction of a large tunnel, which only worsened traffic and delays around the Châtelet-Les Halles Station, in place of an orbital ring road around Paris that would have relieved traffic on radial routes. The opening of the tunnel allowed extending the RER B line northwards, towards the Charles de Gaulle airport. Over time, a somewhat coherent regional railway network emerged: the number of "interconnected" trains rose from only 12 in 1983 to 16 in 1985 and 20 in 1987. During the second phase of the

¹⁰⁸ As part of the systematic press review, we found a number of press articles highlighted the STP's weakness ("une simple chambre d'enregistrement") in shaping transport policy priorities that were designed in national administrations under the influence of RATP and SNCF's research and development departments. See Sciences Po library's collection of press clippings about "RATP" and "SNCF". <http://www.sciencespo.fr/bibliotheque/fr/nous-connaitre/nos-collections/dossiers-de-press>

RER network's development, SNCF was allowed to develop its own RER routes, namely lines C (1979) and D (1995): the originally planned H-shaped network was definitely abandoned as a result. Meanwhile, this large rail-based network faced with several crises such as the earlier-than-anticipated congestion of the RER A line in 1985 (Gaillard 1991; Merlin 2005)¹⁰⁹.

The "Météor-Eole debacle as a final blow to state-led regional governance?

In order to solve this problem, SNCF and RATP proposed separate technical solutions for new rapid-transit capacity: SNCF championed a rail-based solution – Eole – while the RATP favoured an automated metro line – Meteor – with the support of the city of Paris. Both projects were eventually adopted in 1989 under Prime Minister Rocard (Socialist Party, 1988-1991), leading to the construction of the RER E line by SNCF, and the metro line 14 by the RATP. In close relationship with these two rail infrastructure projects, Prime Minister Rocard also initiated a major revision of regional spatial planning objectives under the leadership of the State. The capital region's centrality as a national and European transport hub was reasserted in the 1994 SDRIF.

By re-enacting the modernizing agenda, mass transportation solutions and large-scale infrastructure projects were considered an opportunity to highlight the attractiveness of the capital-city region and to showcase the know-how of French companies through the development of a selected number of flagship projects. Nevertheless, the elaboration of the 1994 Strategic regional planning document (SDRIF) also made visible the strong dependence from central government and State bureaucrats to the solutions put forward by technical elites in close cooperation with RATP and SNCF in the case of rail-based infrastructures, or with the construction industry in the case of motorways, throughout the policy process. Adopting the Eole and the Météor projects also required the construction of another independent and underground tunnel in the centre of Paris connecting to RER D in order for to ensure sufficient capacity for traffic expansion¹¹⁰. Moreover, with a total cost of over 15 billion Francs (approx. € 2.9 billion), over 10 years of future funding dedicated to public transport would be spent on these three large-scale infrastructure projects so as to divert resources from network maintenance and integrated transport planning in the wider region¹¹¹. The outcome was chronic underinvestment in public transport, sluggish development and lacking reliability of the RER, and an ageing suburban train system (Carrez, 2009; Goldberg 2012).

Moreover, the decision to adopt RATP's project was particularly controversial as it favoured the city of Paris vis-à-vis alternative solutions in the suburbs, to the detriment of an alternative solution championed by local authorities from the inner suburbs in favour of an orbital ring road around Paris. This option, which was already included in the 1965 SDAU but had never been implemented, would have relieved traffic on radial routes and helped address rapidly rising transport demand in the suburbs. All in all, this choice highlighted the city of Paris' growing role within the STP and its ability to develop multiple influence-seeking strategies (RATP management, the State, etc.) in order to influence the selection of transport infrastructure projects in the region. In addition, close connections between RATP's top management and Prime Minister Rocard, as well as the need to grant RATP with a large flagship project in a context of a contested managerial reform, are regularly mentioned as the main explanation for this political decision to support both the Eole and the Météor projects.

Yet apart from these flagship infrastructure projects, auto-centric urban development and sprawl played a growing role in a context in which local public transport was considered less of a priority by RATP and SNCF.

The car as a dominant transport mode in the region.

Although much attention was given to the developments underway on the RER network, the car remained a dominant transport mode in the region and in the city of Paris.

¹⁰⁹ This was particularly the case of the segment located between the Gare de Lyon and Gare Saint Lazare stations.

¹¹⁰ The press was particularly critical of the choices made at that time. The left-wing newspaper Libération declared "With the money from Météor (fast east-west subway), we could almost have developed a light rail system around the suburb" (15/10/1998).

¹¹¹ 7 billion Francs were spent on Météor (approx. €1.3 billion), 8,12 billion on the Eole project (approx. €1.55 billion). Additional projects included the extension of the RER D line, some renovation of the RER network and the slow extension of some metro lines in communes next to Paris.

Transport was merely considered a problem of traffic planning by the first elected Mayor of Paris, Jacques Chirac (1977-1995). More interested in cultural flagship projects that rivalled those of President Mitterrand (Urfalino 1994), he did not consider transport a domain in which urban authorities could develop their own thinking due to their limited resources. In addition, as he still had to negotiate issues of traffic congestion and road capacity expansion with state elites in the regional administrations and organization of public transport services with the RATP, he chose to challenge national authorities over other policy issues.

Nevertheless, Mayor Chirac's choices had long-term unintended impacts on transport policy developments in the city of Paris. First, most of his transport policies combined parking management and planning tools as a way to accommodate the development of bus lanes (since 1975) while at the same time maintaining a similar amount of road space for car traffic. Between 1977 and 2015, the city's successive Local Urban Plans (PLU) required from real-estate developers that a minimum of one parking space should be built for 100 m² of housing. By fully exerting its licensing authority, Mayor Chirac accelerated the dismantling of on-street parking spaces and supported the development of underground parking spaces through concessionary rights. Throughout his successive terms as mayor, this was considered the city's preferred strategy to support car traffic at minimum costs and it would later serve the interests of those advocating the reduction of road space for car traffic¹¹². Second, some attempts were made in order to develop cycling. The accident of the cycling advocate Jacques Essel – he was hit by a car in 1982 – led the newly elected mayor Jacques Chirac to introduce a plan of some 80 km of “courtesy corridors” for cyclists. At that time, however, the municipality was not willing to take road space away from car traffic in order to reallocate it to alternative transport modes and some resistances from within the city administration hindered the plan's implementation. In addition, bus operators strongly opposed the idea of opening bus lanes to cyclists. Bus lanes were considered a hard-fought achievement and cyclists as a hindrance to their operation. In an attempt to reconcile these conflicting goals and interests, the city of Paris decided to place the “courtesy corridors” between bus and car traffic lanes. These lanes were soon renamed “corridors of death” and cycling was considered extremely dangerous. In this context, cycling initiatives were brought to an end and considered a political taboo for another 15 years.

Outside the city of Paris, a large share of transport policy objectives and investments were concentrated on developing and improving road networks, as stipulated in the first generation of State-Ile-de-France Region Contract Plans (Contrats de Plan). This is first explained by the allocation of substantial shares of national spending in road infrastructures between 1975 and 2004. This increase primarily benefited the construction of circular motorways and expressways in order to reduce congestion in Paris, by contrast to secondary road networks. Moreover, in a context of reduced public funding capacity, the effective amount of spending in road infrastructure developments in the region decreased steadily.

A number of private-led initiatives, such as the LASER¹¹³ and the HYSOPE¹¹⁴ projects, were jointly developed by the construction industry and real-estate developers in order to promote underground rapid transit road infrastructures. Building on the knowledge that had been acquired during the planning and development of the RER network, a 50-years-old idea of developing a regional rapid-transit underground motorway network was brought forward by the Grand Travaux de Marseille company (now part of Vinci construction) or so-called LASER project (Dufaut 2007). The city of Paris eventually rejected the idea under the pressure of environmental groups (see picture below), but more fundamentally, of a strong level of opposition to the project among Mayor Chirac and the Conservative Party's electorate insofar as it would increase incoming traffic and visitors from the suburbs.

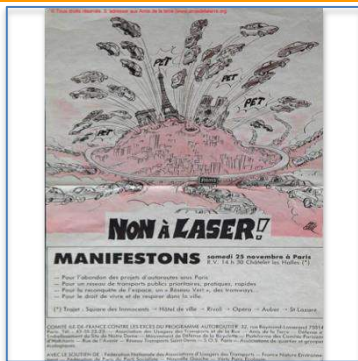
This policy solution was later introduced on a case-by-case basis for future motorway segments in the capital-city region, such as in Neuilly-sur-Seine or in the case of the A86 between Rueil and Versailles. In such cases, these costly investments primarily took place in the wealthiest neighborhoods of Paris and the western inner-suburbs with the support of the Conservative majority and were justified in the name of speeding traffic, road safety and anti-noise measures. In addition to their cost and technical flaws, these private-led initiatives were also denounced as representative of strong levels of interests' collusion between real-estate developers, the construction industry and local political representatives in the capital-city region.

¹¹² Interview City of Paris 1, June 2015.

¹¹³ Liaison automobile souterraine express régionale

¹¹⁴ Name of a plant that favours the decongestion of the respiratory system. It was jointly developed by the construction firm Bouygues and SPIE Batignolles, also based in Neuilly sur Seine, in the Hauts-de-Seine département.

Picture 1. Call to protest against the LASER project



Source: Amis de la terre

The widening gap between transport planning and transport demand

The slow dismantling of regional coordination capacity around spatial planning led to increased competition between municipalities in the capital-city region and accelerated low-density urbanization and urban sprawl (Desjardins, Drevelle 2014). As automobile dependence increased in the region, a large share of transport policy objectives and investments concentrated on developing and improving high-speed road networks in and outside Paris. As observed in the case of public transport infrastructure, and in this case due to the national Road Directorate's preferences, the largest share of capital investments was concentrated in large flagship projects to the detriment of the secondary road network¹¹⁵.

In spite of shifting policy objectives, transport investment and policy measures continuously prioritized the need to develop additional road capacity throughout the region. But even though the region maintained high levels of investment in road infrastructures, the State's overall and effective contribution to capital investment in the region decreased steadily¹¹⁶. The first generation of State-Ile-de-France Region Contract Plans (Contrats de Plan) and the 1994 SDRIF confirmed the pivotal role of the car as a dominant transport mode outside Paris. Expressing a clear preference for high capacity at the expense of the secondary road network, the powerful National Road Directorate secured funding as part of the 1994 SDRIF to develop several ring roads in the inner and outer suburbs. In doing so, it drew on some of the projects that had been abandoned or suspended during the 1970s. Reports published by the State administration and their local representatives regularly highlighted the need to reduce congestion, and measured its progression over time by looking at a distance/speed ratio¹¹⁷. Until the late 1980s, these reports argued congestion was mainly due to increasing transport demand alongside main radial routes and all recommended increasing road capacity in order to ensure accessibility towards Paris. By contrast, towards the end of the 1980s and throughout the 1990s, most reports highlighted the need to reduce congestion on ring-roads and to develop additional road capacity outside Paris in order to address the growing within-suburbs traffic demand.

In this context, private-led initiatives particularly appealed to local elected representatives in the region. Two infrastructure projects are particularly representative of the rapid evolution taking place during the 1990s: the ICARE project, whose development was advocated by the Conservative majority in the region, and the MUSE project, in the Hauts-de-Seine département. Similarly to previous transport infrastructures in the region, the ICARE was promoted by the construction industry and motorway concessionaires. It sought to develop a 150 km long and 50 m deep underground ringroad that would connect major infrastructures in the region (e.g., Charles de Gaulle airport), business districts (La Défense) and some Villes nouvelles (e.g., Marne-la-Vallée) (Marchand 1993).

¹¹⁵ SNCF led a similar strategy in the development of the railway network: priority was given to the development of high speed as opposed to regional and intercity lines (see section 4.5 below).

¹¹⁶ In his book, Marchand (1993) suggests they have been divided by two between 1975 and 1994.

¹¹⁷ Such as the Ile-de-France White Book which was published in 1990 in preparation of the 1994 SDRIF *Livre blanc de l'Ile de France*, 1990.

The MUSE project¹¹⁸ drew on the experience gathered by the construction and the banking industries during the construction of the Channel Tunnel. It sought to increase rapid transit systems in this wealthy suburban department through the development of a 5,5-km tunnel between Clamart and Paris. By accommodating the development of both an urban motorway and a light rail system, this large infrastructure would increase accessibility from Orly airport and La Defense Business district to the city of Paris. This private-led initiative was formally adopted in 1991 by the leader of the local Conservative majority, Charles Pasqua (RPR), but without the support from the State: more than €300 million were spent in preliminary studies. Dissensions within the Conservative party offered new opportunities for the left-green opposition to propose alternative solutions in order to increase accessibility in these western inner suburbs. In a context of rising suspicions – and proven cases – of corruption in the Conservative majority in the capital-city region, this infrastructure project was considered particularly representative of interests' collusion between local elected representatives and the building industry in the capital-city region (François, Sauger, 2004; Lascoumes, 2009) and led to the opening of an enquiry for favouritism in 1999¹¹⁹. Following the arrival of the Left-Green majority at national level in 1997, the State eventually rejected this infrastructure scheme.

Concluding remarks

Unlike the situation observed outside the Capital-city region, successive decentralization reforms proved unable to foster a changed approach to urban transportation. For many observers within and outside the state administration, the “Météor-Eole debacle” and the national road directory's dominant role signalled weakening political leadership and institutional dysfunction in the capital-city region. In this context of political contention and dissonance among state elites and organizations, an air pollution crisis and major strikes in the public sector fostered the articulation of suburban municipal interests and facilitated policy experimentation, as with urban tramway development.

4.2.3 Innovative transport solutions at the local level: new issues, new players

Air pollution peaks and a major strike in the transport sector unexpectedly opened new opportunities to challenge transport policy developments in the capital-city region. New players across levels of government, including a new generation of political leaders, opposition parties, urban planning and health professionals, civil society organizations, and citizens, challenged existing transport policies to reframe transport as an urban policy priority. Paradoxically, in a context in which spatial planning objectives, investment priorities and dominant forms of transport policy-making favoured large-scale rapid transit infrastructures, these initiatives were developed at the margins or outside the traditional confines of State elites, by strategically tapping into policy resources made available in the environment and the urban regeneration policy domains. Outside Paris, it was only in those cities in which strong political support in favour of traffic mitigation policies was found that some continued efforts were introduced in order to develop strong alternatives to auto-centric urban development and sprawl.

In this context, transport issues were increasingly politicized: first, they attracted increased attention from political parties across levels of government and regularly emerged on the local and the regional political agendas in the capital-city region, second, they contributed to redefining the role attributed to transport in urban development from a traffic planning perspective towards an urban development perspective, and third, by championing mobility and transport as an urban issue, mayors and local elected representatives increasingly challenged standardized transport policy solutions.

¹¹⁸ MUSE (Maille urbaine souterraine express). In the context of the 1995 presidential campaign and due to the division of the Conservative Party, the controversy over the MUSE project received sustained attention from the national media. See for example the articles published by Les Echos, Le Parisien and Libération about the MUSE project.

¹¹⁹ See the 1999 report by the Regional Chamber of Accounts, highlighting the lack of competition in the tendering process as well as the lack of financial and political control over spending (CRC IDF, 1999). The role of the local mixed economic company (sociétés d'économie mixte) – SEM 92 in this case – was repeatedly highlighted.

The northern inner suburbs take the lead: the Tram'vert project

Outside Paris, political authorities and parties answered to working and lower middle class majorities that were overwhelmingly affected by the ageing and insufficient transport network, some of whom actively responded with public mobilizations over the poor quality of suburban train services. Municipalities had gained new responsibilities in land-use and transport planning following successive decentralization reforms. Following the introduction of new environmental regulations and decentralization reforms at national level¹²⁰, proposed transport developments were required to better assess their socio-economic impact as well as their impact on the built environment. In reaction to their lack of influence over transport policy-making in the region, municipalities increasingly used these new powers in order to delay or veto the implementation of new projects (e.g., roads and highways, new bus lines, etc.). In the inner-suburbs area, local authorities alternatively lobbied SNCF or RATP in order to develop urban tramway projects and extend the regional rail and the metro networks (Heurgon, 1998). By contrast, local authorities in the outer suburbs invested their own resources in completing and extending the road network.

In the northern suburbs in particular, the Socialist, Communist and Green Parties each picked up the issue of transportation to denounce growing inequalities within the wider region, cast blame on the Conservative majority in the region, and strengthen their respective positions. Together with départements, municipalities started acting as second level transport authorities in order to compensate for the lack of investment and projects outside the city of Paris. These claims had been on the political agenda since the early 1980s, with Socialist and Communist mayors from the northeastern Seine Saint-Denis département lobbying the State, the region, and RATP for large-scale public transport infrastructure developments. During preparations for the 1998 World Cup, including the location of the future national stadium in Saint Denis, these claims gained new momentum and the decision was made to build the capital-city-region's first urban tramway line.

The "Green tram" project (Tram'Vert) or T1 tramway line between the cities of Bobigny and La Courneuve opened in 1992. Although RATP had initially resisted the project, its later support should be understood as a reaction to growing criticisms against the priority given to projects located in the city of Paris, including the Météor project. As Christian Blanc, RATP's CEO (1989 – 1992), was trying to introduce a profound managerial reform in this state-owned enterprise¹²¹, he grew interested in alternative technologies and projects that would support the work of the newly created International Division in disseminating urban transportation solutions worldwide. The growing success of urban tramways in cities outside the capital-city region reflected pressure from the manufacturing industry (Alstom) and funding made available at national level for over-ground rail-based transport systems located in large cities' deprived areas. The Tram'Vert project was indeed considered a transport initiative as much as an urban renaissance flagship project. It was designed by star architect Paul Chemotov as a symbol of the northern suburbs' revival and benefited from funding made available as part of the national programme for urban renewal beginning in the early 1990s (Desjardins et al., 2014; Hall 2015). It combined significant landscaping measures, the use of high-quality materials and the opening of a green corridor alongside the tracks (see Picture 2).

Picture 2. The urban tramway as an urban renaissance flagship project



Source: RATP, 2016

Following RATP's decision to support an urban tramway project, SNCF developed its own approach to urban tramway development, which prioritized speed and reusing existing rail track. This approach prevailed

¹²⁰ Notably the 1992 decentralization laws and the 1996 LAURE law, see section 2.

¹²¹ This included decentralizing management processes, a shift from a user- towards a customer-oriented service. Blanc eventually failed due to the government's lack of support on measures aiming at ensuring continuity of service on the subway in the event of a strike.

during the development the second urban tramway line (T2) between La Défense and Issy-les-Moulineaux -Département des Hauts-de-Seine, in the south and west of Paris, which opened in 1997. Both projects met with immediate success and several line extensions were built during the 2000s.

The 1995 General strike as a catalyst for transport policy change in the region.

The 1995 General Strike is considered another outgrowth of statist governance failure and helped catalyze a paradigm shift away from automobility in large city-regions in France, including the capital-city region. With the start of the Chirac presidency, the new Prime Minister, Alain Juppé (1995-1997) announced a raft of welfare cutbacks, including public sector pay freezes with the stated aim of reducing the rising budget deficit and a retirement reform plan in the SNCF. Public sector unions organized a series of national strikes from October, with demonstrations in some 80 cities across the country. It peaked during 4 long weeks between November 15 and December 1995, when transportation workers across the country were called on strike. Most modes of transport for commuters were shut down and, RATP and SNCF networks came to a near halt in the capital-city region before Prime Minister Juppé abandoned much of the retirement reform plan while other welfare cutbacks were maintained.

With the public transport network paralyzed for three weeks in December, users spontaneously turned to cycling and car sharing *en masse*. Hence, the strike unexpectedly demonstrated to policymakers across levels of government that transport alternatives existed and should be encouraged across the region. The Regional Council put out a specific grant for financing additional public transport investments and developed its own Plan for Soft Mobility (May 1996).¹²² Beyond these crisis events, local authorities highlighted the limited impact of decentralization reforms in the capital-city region as the regional council and local authorities outside Paris had few opportunities to shape the policy process and called for an alternative governance system in transport. Tensions in state-local relationships were made visible as many local elected representatives in the Ile-de-France region criticized continued leadership of the state over spatial planning in the region and the preference given to the city of Paris. In transport, these criticisms also denounced the preference given to new, high capacity infrastructure, as opposed to investment in local public transport services in the suburbs. In addition to institutional tensions between levels of government, political tensions between Conservative and Centrist Parties on the one hand, and the growing Left-Green opposition on the other hand, contributed to further politicizing transport issues with the support of local anti-road initiatives.

In this context, air pollution peaks in the city of Paris were seized upon as an opportunity by new political forces in the city of Paris to promote alternative urban transportation initiatives.

Air pollution peaks as catalyst for change in urban transport

Air pollution peaks accelerated the search for new transport policy solutions in the city of Paris and at the National level. The rising frequency of ozone alerts in Paris and other French cities led to renewed protests over air pollution in particularly badly hit areas and heightened public awareness and concern over air quality¹²³. National debates preceding the LAURE Law (1996, see Annex 2) ushered in new policy evidence and expertise, accentuating the profile of urban pollution (Boutaric et Lascombes 2008). Organized networks of public health professionals, urban planners, and proponents of non-motorized transportation drew research and discursive linkages across their respective policy domains to spark public debates about air pollution. In the capital city region, these networks were led by AirParif, a non-profit organization accredited by the Ministry of Environment since 1979 which monitored air quality in the region and the city of Paris. The knowledge gained as part of their contribution to European and national debates about air quality legislation contributed to strengthen this organization's expertise and to the development of new methodologies and techniques to assess the impact of mitigation measures, and to inform authorities and the wider public. Moreover, the LAURE Law introduced a

¹²² This laid the groundwork for a regional cycling policy, which would come to fruition after 1998.

¹²³ Since the 1996 LAURE Law (see Annex 2), the status and role of AirParif was considerably enhanced and its board gathered a large number of stakeholders, including environmental non-governmental organizations and consumers' groups. As of now, it draws upon a € 7 million annual budget and 50 employees in order to assess the role of some 60 pollutants, control air quality measurements, and produce daily forecasts. See also annual reports, available online since 1998: <https://www.airparif.asso.fr/publications/>

number of obligations and policy resources – knowledge and information, policy tools, policy measures – across policy domains (transport, energy, agriculture, etc.) in support of anti-air pollution initiatives.

Harnessing these policy resources, the Green Party blamed the automobile as the main source of air and noise pollution in Paris and challenged the Conservative majority in council sessions throughout Mayor Chirac's last term (1989-1995) (Boutaric 1997)¹²⁴. Among his traditional electorate as well, car traffic was increasingly considered as a source of degradation to the urban environment. The Chirac administration avoided blame by pointing to the responsibilities of the State and State-owned organizations like RATP in delaying the construction of the new metro and RER lines in Paris. State representatives (Préfet de police) were also blamed for limiting themselves to symbolic measures, such as the creation of a task force on air pollution and traffic bans, with little to no impact on policy measures to effectively restrict car use or reduce emissions.¹²⁵ During unusually high pollution peaks in June 1995, State representatives exhorted residents to use alternatives to the automobile until the end of the crisis.

Following Chirac's election as President, Mayor Tiberi – also from the Conservative Party – publicly announced the new administration's commitment to preventing pollution peaks in the future, in part through sustainable transport measures designed to reduce automobile traffic by 5-10 per cent. Seeking to differentiate himself from his predecessor's policy platform (Zittoun 2013), he broke with State representatives in rejecting coercive measures such as congestion tolls and traffic bans, instead promoting alternatives to car use, including bikeway planning, bus and taxi-only lanes, car-free initiatives, sidewalk improvements, and urban tramway development. Actual policy and program achievements by the Tiberi administration were limited in scale, but they are considered a first step towards the emergence of an urban-centric approach to transport policy developments.

Following recommendations made by the Environment Ministry at national level, car-free initiatives were selectively introduced by Mayor Tiberi's administration as part of their efforts to reduce air pollution. The "Promenade et détente" initiative was first introduced from 1995 onwards on Sundays from 7am-5pm in a small area located in Mayor Tiberi's constituency (5th, secteur Mouffetard). It was later extended as "Paris Piétons Vélos" to those areas alongside the Seine river (voies sur berges) and northern waterways (quartier Jemmapes)¹²⁶, including a weekly traffic ban on the Pompidou expressway alongside the Seine River during the summer months.

In addition to car-free initiatives, Mayor Tiberi also introduced policy initiatives aiming at reducing speed onto the road network. The "Quartiers tranquilles" initiative had been introduced in 1990 under Mayor Chirac's administration with little efforts to implement it. By contrast, Mayor Tiberi drew on the funding made available at national level as part of the LAURE Law and the 2000 Regional mobility plan (PDUIF) in order to effectively implement this policy initiative between 1995 and 2001 in some 31 neighborhoods in Paris. With the support of city planners in the Paris Urban Planning Agency (*Atelier Parisien d'Urbanisme*–APUR), this policy initiative combined the reduction of the road space allocated to car traffic with the reduction of speed limit to 30 km/h (Zones 30). Among urban planners and the left-Green opposition, critics highlighted the need to expand and intensify this policy: designated areas covered, on average, some 20 ha, and their redevelopment did not include any revision of traffic plans by State representatives. It is estimated that the budget allocated to the "quartiers tranquilles" initiative amounts to € 0,56 million/neighborhood, that is some €29.000/ha (Bureau, Glachant, 2010). Nevertheless, this policy initiative was considered particularly innovative for two reasons: first, by drawing a clear distinction between transit traffic and local traffic, it designated the reduction of car traffic as way to contribute to "place-making"; and second, it drew primarily on urban planning tools and methods in order to redevelop these areas including the reduction of road space, including traffic slowdowns, the expansion of sidewalks, raising pedestrian crossings above the road level, developing cycling lanes etc.

Last but not least, Mayor Tiberi took everyone by surprise with a proposed urban tramway to be developed "in partnership with RATP and SNCF"¹²⁷. A relative late mover on urban tramways both within the

¹²⁴ Rally for the Republic/Union for a Popular Movement/The Republicans (RPR/UMP/LR).

¹²⁵ In this case, Prime Minister Michel Rocard in close cooperation with the head of both RATP and SNCF.

¹²⁶ It then was eventually renamed "Paris respire" in 2003 in an attempt at streamlining these car-free initiatives and progressively extended from 7 to 15 areas.

¹²⁷ Mayor Tiberi, Press conference, July 23

country and the region, Paris sought to build on the efforts of other municipalities in the region, which had successfully lobbied the State, the region, and transport operators to construct two urban tramway lines. This project was especially fraught with tensions and challenges (Zittoun 2008; 2013) considering RATP and SNCF's historical reluctance to integrate urban tramways into their rail networks, and once overcome, their insistence on advancing separate technical solutions. Subsequently, the Tiberi administration proposed to extend the T2 line alongside the city's ring road (*Boulevard périphérique*), to partially remedy the lack of circular connections in the south of Paris. As done earlier with T2, SNCF recommended reusing existing tracks on the pre-1930s suburban rail-based network (*Petite ceinture*) on the basis of land availability, distance-speed ratio, and estimated cost.¹²⁸ Alternatively, RATP and city planners in the APUR proposed a completely new tramway line that would achieve deeper integration with urban public spaces, help rehabilitate neighbourhoods on the city's fringes, and reduce traffic congestion and air and noise pollution alongside one of the busiest roads in south Paris.¹²⁹ Despite its higher projected cost, the latter would ultimately prevail in a 2000 decision to build a 9-km long tramway line (T3a) across three districts of southern Paris.¹³⁰ More immediately, the Tiberi administration stopped short of opening the public inquiry procedure for the urban tramway extension, as prominent members of the Conservative Party opposed it in fear of electoral reprisal from political constituents.

All of the policies were developed on a small-scale basis and were slow to bear fruit, particularly in time for the next regional election in 1998 and municipal election in 2001. One factor was the Conservative Party's hesitancy to antagonize its traditional base. Another was the need to explore alternative funding sources as a large share of funding dedicated to transport in the region was already allocated to large-scale infrastructure projects. Partly due to divisions within the Conservative Party in Paris, Jean Tiberi lost the election to the Socialist candidate Bernard Delanoé, a former city councillor (since 1977) who campaigned on issues of social cohesion, green space, and public transport. Nonetheless, the Tiberi-era policies in combination with the changes taking place in the inner-suburbs laid the groundwork for more systematic efforts to promote sustainable urban mobility in a changed political and institutional context. They also contributed to the growing role of urban planners and urban planning policy tools and methods in transport policy developments in close cooperation with the changes underway at national level in the environmental and the urban regeneration policy domains. In Paris, APUR was particularly instrumental in providing the city of Paris with alternative expertise while in the case of the region, this was done by IAURIF and regional representatives from the environmental ministry.

During the second sequence in transport policy developments, decentralization reforms in combination with the strengthening of environmental policies increased the ability of local authorities to challenge the national transport policy framework by strategically tapping into alternative funding sources. A number of local grassroots initiatives opposed infrastructure-led transport policies and highlighted the need to address mobility issues in the region by developing local transport policy initiatives. Those conflicts were not spread homogeneously in the region, but closely related to political divisions (Kuhlman, 2007) on the one hand, and to socio-economic resources – thus they were higher in Paris and in western inner-suburbs (Pham, Kirat 2008). Nevertheless, these initiatives developed outside the regional transport policy community eventually contributed to the emergence of an integrated urban transportation agenda in a new political context. This is further discussed in the next section, with a specific focus on major transport policy initiatives and the concrete way through which they were promoted across levels of government by the Left-Green majority.

4.3 Developing sustainable transport policies: political drivers and enhanced policy capacities (since 1997)

The emergence of an integrated approach to urban transportation is closely related to the growing use, in local transport projects, of street design initiatives and anti-pollution and -noise measures. It is observed in the context of profound political and institutional change across levels of government: the election of a Left-Green majority - including the Socialists, Greens, and Communists - at national level (Jospin Government, 1997-2002), and that of a similar political coalition at both the regional level (1998) and in Paris (2001).

¹²⁸ A 28 km/hour distance-speed ratio and a capacity of 17,000 passengers per hour. Estimated cost amounted to €270 million.

¹²⁹ Lower distance-speed ratio (15 to 20 km/hour) and capacity (10,500/12,500 passengers per hour). Estimated cost amounted to €320 million due to land acquisitions, additional stops and the transformation of existing road network.

¹³⁰ Concomitantly, SNCF was allowed to develop a new urban tramway line (T4) in the Seine Saint Denis Département in the north of Paris between Bobigny and Aulnay-sous-Bois, which opened in 2006.

The changed political context at national level indirectly supports the development of alternative transport solutions through major changes in procedures and regulations outside the transport sector (e.g., environment, planning, urban regeneration). Their impact on transport policy objectives and developments in the capital-city region were not immediate due to the resistance of state elites and organizations, or to their respective clienteles. Following a series of struggles, merging form of urban and regional governance further gained expression in a new generation of planning and contractual agreements. Some major differences can also be observed between the city of Paris and the region in both the rhythm and scope of transport policy changes.

4.3.1 Paris takes the lead: the city as the Left-Green majority's living lab for urban sustainable mobility.

With the 2001 election in Paris, the new Socialist Mayor, Bertrand Delanoé, assumed leadership over a ruling majority including various parties of the left but most importantly the Greens. This new coalition singled out transport as an instrumental issue to gain political visibility and assert leadership in urban governance. That the coalition won three consecutive elections and has governed Paris for 15 years has enabled the systematic development of transport innovations over time.¹³¹ The new majority did, however, lack formal authority to draft a Mobility Plan until the 2004 Act (see Annex 2). In this context, it articulated a myriad of policy initiatives into a long-term agenda for change in the transport sector. In addition to political changes, previous decentralization reforms eventually bore fruit in the capital-city region too, in close relationship with the new majority's ability to strategically use every institutional venue in order to assert local authorities' powers throughout the policy process.

Transportation under the Left-Green alliance

While controversies over transport offered an opportunity for leftist parties to build an alliance and define a common political agenda, the issue varied in role and significance across parties. The Parisian Socialist Party long prioritized housing and urban renewal, with transport serving a more instrumental function. Over time, it accumulated policy knowledge and political resources to support an ambitious plan of social housing and urban renewal in working class and disadvantaged neighbourhoods along with expansion and regeneration of urban public spaces more generally. The party's interest in transport policies was initially limited to the urban tramway project as a major urban regeneration tool and means for forming an alliance with the Greens. Still their enthusiasm for transport issues exceeds that of the Communist Party, which has displayed a more ambiguous, if not openly hostile, position stemming from their close alignment with worker unions in the transport industry. Despite some inter-party agreement in supporting the urban tramway project, the Communists have opposed taking away road space from car traffic and bus lanes in order to promote cycling and enhance public spaces.

Contrastingly, the Greens have held transport as their top policy issue since their first municipal campaign in 1989. In Paris, the party draws its base from social movements, pro-cycling organizations, and neighbourhood-based organizations. Among prominent Green Party members, Denis Baupin has been central to the creation of an informal network of transport and urban planning professionals and experts, engineers, and civil servants across local, national, and EU levels of government and public, private and voluntary sectors committed to alternative approaches, which he helped build in the course of his extended political career.¹³² Baupin embodies a pragmatist approach to environmental protection and strategic use of transport and energy issues to strengthen the party's position at the municipal level. Through their growing political popularity and impressive electoral results, the Parisian Greens have negotiated coalition agreements with the Socialist and Communist Party to prioritize transport for municipal policy intervention (Pichon 2012). Not only has transport gained a large share of the municipal budget, Green Party members have received Deputy Mayor appointments - Denis Baupin for transport and Yves Contassot for environmental affairs.

In this context, the Delanoé administration set the foundations for an integrated approach to urban transport by tapping into public concerns about noise as well as national funds for urban regeneration programs to reduce car use through the introduction of traffic-calming measures and the development of pedestrian zones.

¹³¹ Delanoé was elected twice (2001-2014) and his Deputy Anne Hidalgo was elected Mayor in 2014.

¹³² He worked as advisor to the ecologist group in European parliament, elected municipal councilor in Paris (1995-2001) and political advisor to Environment Minister Voynet (1997-2000),

“Give Paris back to its inhabitants”: small-scale innovations in sustainable urban mobility

With Paris lacking formal authority to develop a Mobility Plan until several years into the Delanoé administration, the Left-Green coalition initiated a piecemeal approach of transforming urban public space as a way to reduce road space available for automobile traffic (Deroubaix and Leheis, 2011).¹³³ This was partly done by expanding on Tiberi-era policies such as temporary car-free zones and urban tramway planning. In 2002, the Delanoé administration extended the traffic ban on the Pompidou expressway alongside the Seine River through the entire summer and complemented it with small-scale, interim programs such as artificial beaches and seasonal leisure activities under the name “Paris Plage”. The effort partly bridged the divide between the anti-car approach of the Green Deputy Mayor for Transport, Denis Baupin, and the social justice and liveability priorities of the Socialist Mayor Delanoé. Simultaneously testing and reinforcing the robustness of the political coalition, the initiative was not framed as a transport initiative but rather a component of the Delanoé administration’s efforts to “give Paris back to its inhabitants,” and more specifically to lower income groups. The Conservative Party, adjacent municipalities, and pro-car interest groups criticized Paris Plage because it considerably reduced car access to the riverbank. At the same time, the events gained higher attendance each summer and contributed to the city’s worldwide reputation as a liveable city.¹³⁴

Urban tramway expansion was another Tiberi-era transport initiative that the Delanoé administration transformed into a major flagship project. Picking up the project where the Tiberi administration left off, they initiated the public enquiry procedure (2003) while mitigating counter mobilizations through a series of *ad hoc* participatory mechanisms. Jointly leading the planning process, the Socialist and Green Parties strategically reframed the tramway project as an urban regeneration issue. This helped them form a new alliance with city planners in the APUR, whose enthusiasm for alternative transport policy and willingness to incorporate the urban tramway project into a larger urban renewal programme contrasted with the largely pro-car approach of the city’s Traffic Department. Apart from effectively enlarging the scope of proponents and stakeholders, the decision also enabled the Left-Green coalition to access funding and tools for urban policy and planning across levels of government. In particular, the Transport Deputy Minister Baupin and the Greens used participatory devices and public debate procedures to heighten project visibility and mitigate opposition from local shop-owners, the Conservative Party, and adjacent municipalities.

While strengthening the transport-urban planning linkage in partnership with APUR, the Left-Green majority additionally sought to build cooperation with RATP, in part to integrate the latter’s transport expertise in expanding public transport networks. In parallel to negotiations over the 2000-2003 network operating contract, RATP underwent a second wave of internal managerial reform¹³⁵. Concomitantly acknowledging the growing role of local authorities in the funding and organization of transport, RATP opened local agencies across the region, including one in Paris in 2001, with high levels of autonomy to oversee daily management of the bus network and undertake bus and urban tramway expansions with local governments. Such internal restructuring on the part of RATP created a new incentive structure within the civil service bureaucracy that drew a new generation of highly skilled state elites to urban transportation projects.¹³⁶ In Paris, the local RATP agency brought together engineers sympathetic to the Left-Green sustainable urban mobility approach,¹³⁷ as well as unionized senior members of staff with previous experience in developing urban tramways in the region. Consequently, Baupin’s cabinet and the Parisian RATP agency cooperated on small-scale public transport measures such as night bus services and a

¹³³ These contrast with solutions adopted in other CREATE cities: congestion pricing and other economic tools (London) parking management (Vienna), and emissions control schemes (Berlin).

¹³⁴ Interviews with Mobility Agency, May 2015 and City of Paris, Department for Transport, February 2016. See the report produced in 2015 by the Regional Chamber of Accounts on the Paris Plage initiative, <https://www.ccomptes.fr/Publications/Publications/La-gestion-de-l-operation-Paris-Plages-Paris>

¹³⁵ It began under CEO Bailly (1994-2002) and intensified after the arrival of CEO Idrac (2002-2006).

¹³⁶ This process culminated after 2010 with SNCF creating its own subsidiary Keolis and proclaiming itself an urban mobility service provider.

¹³⁷ In some cases, these pioneers were members of the Green Party themselves and had served as technical advisers to Dominique Voynet (Green Environmental Minister between 1997 and 2001) (Interviews with RATP representatives, May and June 2015).

bus rapid transit line until a more comprehensive transport plan could be developed. Once launched, the programs continued under the purview of city technicians and bureaucrats.

While accessing policy resources and tools associated with urban planning, the Parisian Greens also tapped into public concerns about quality of life and pollution. Prioritizing noise rather than the highly contentious issue of car use, the City built on existing measures by the City Administration for Environmental Affairs to reduce noise pollution by creating tools for locating, measuring, and monitoring noise as well as raising public awareness.¹³⁸ In contrast to the Préfecture's existing focus on nightlife as a major source of noise pollution, the Green Party Deputy Mayor of Environmental Affairs, Yves Contassot, problematized car traffic with the help of supporting data and evidence (Zittoun 2007). He further leveraged national funds made available by new legislation on urban regeneration to promote a comprehensive strategy against noise that included traffic calming measures and pedestrian zones. Traffic calming measures included policy initiatives aimed at allocating more space to alternative transport modes, such as right-of-way bus lanes, cycling paths¹³⁹ and walking. The Deputy Mayor selected the 20-hectare Montorgueil area in the 2nd district of Paris, a bastion of the Parisian Greens (represented by a Green District Mayor) with low rates of car ownership, as an entry point for prioritizing alternative street uses.¹⁴⁰ The scheme was introduced as part of the Les Halles urban regeneration project (see above), which proposed to increase this area's recreational function in a way that would appeal to residents, commuters, and tourists. In the face of vocal opposition from 10 to 15 groups representing citizen's initiatives and grassroots movements - some formed in protest to the regeneration of Les Halles more generally - the Green District Mayor Boutault set up a consultative committee. The process of troubleshooting with a large variety of stakeholders helped refine the concept of "pedestrian neighbourhoods," a hallmark of the city's ensuing "green area policy" and approach to reducing car traffic while encouraging alternative street uses.¹⁴¹

Pictures 3a&b: The "pedestrian neighbourhoods" initiative.



The Montorgueil area



Entrance gate to the Montorgueil area

Source: Mairie du 2^{ème} arrondissement

As the Paris Plage initiative, urban tramway planning, and anti-noise measures laid the groundwork for what would become known as the Parisian approach to sustainable transport, the city's completion of its first Mobility Plan in 2007 signalled a breakthrough in consolidating a comprehensive urban transport strategy. For the first time, this planning document provided formal grounds for the development of a comprehensive urban transportation agenda in Paris.

Towards a comprehensive urban transportation agenda in Paris

In order to fully explore the opportunities opened by the 2004 Act, the Delanoé administration established a team in the Traffic Department - under the leadership of newly-recruited François Prochasson¹⁴² and working in close cooperation with the cabinet of Deputy Mayor of Transportation, Denis Baupin - to draft the

¹³⁸ For example, noise maps, measuring stations and an anti-noise observatory.

¹³⁹ Some 10% increase of cycling lanes was observed between Mayor Delanoé's first term, from 256 km in 2001 to 439 km in 2008.

¹⁴⁰ See minutes from meetings, available on the district's website: <http://www.mairie02.paris.fr>

¹⁴¹ For example, daily deliveries, short-term parking for residents only, street design and the development of on-street shops.

¹⁴² Trained as an engineer and a geographer, Prochasson specialized into urban mobility and transport planning during his PhD.

Mobility Plan (Ollivier-Trigalo, 2007). Between 2005 and 2007, the team built alliances and partnerships across levels of government as well as inside and outside the city administration with urban planners and local communities. All the while, the Left-Green coalition grappled with mounting tensions arising from the Greens' preference for more radical solutions in transportation. With support from Community Party allies, Mayor Delanoé ultimately made his preference for an urban regeneration strategy prevail, primarily drawing upon urban planning and street design, with transport serving more as a means rather than an end.

The Paris Mobility Plan (formally adopted in 2007) introduced two ambitious goals: (1) reduce the share of individual car use by 40 per cent by 2030, and (2) achieve a 20 per cent increase in public transport capacity by 2030. In proposing to reduce car use by prioritizing transportation alternatives such as public transport, cycling, and walking rather than through anti-car policies (i.e. congestion charging—London, low emission zone—Berlin), it continued the stance of previous administrations.¹⁴³ The primary difference was that the Left-Green majority had access to a larger array of policies, resources, and tools accumulated through its various small-scale experiments and innovations since 2001 and was progressively and systematically introducing them across the city. This planning document provided the legal basis for further scaling up street redesign and traffic calming measures, expanding the bus network capacity, and implementing flagship projects like the Velib bike-sharing system and urban tramway expansion.

The combined results of incremental changes and flagship projects – which are successively introduced below – have been nothing short of radical and transformative, but have also come at the cost of inter-partisan disagreement and rift.

- *Street design initiatives:*

Street design initiatives were particularly instrumental in this process. To begin with, some initiatives, which dated back to the Chirac (1977-1995) and Tiberi (1995-2001) administrations and had been used in order to eliminate roadside parking spaces, were now upgraded to take cars off the roads altogether. Between 2003 and 2011, free on-street parking practically disappeared and 80 per cent of the total amount of parking facilities is located off-street (see Graph 4). Moreover, street design initiatives were also instrumental in order to improve bus network capacity and efficiency. Following an experiment led over the Summer 2001, the city expanded the length of right-of-way bus lanes up to 300 km, through the development of 40 km/year of additional fully segregated bus lanes. Working with RATP, and APUR, the city introduced night services (Noctilien, since 2005)¹⁴⁴ and rapid transit lines (Mobilien, since 2009).¹⁴⁵ It also built a large network of right-of-way bus lanes, starting with urban expressways facing the highest levels of traffic congestion and noise pollution (as determined by the Contassot administration's anti-noise monitoring tools). In spite of the work done on the bus network, no major change was brought to its layout and it still shows very limited differences with what was developed during the 1950s¹⁴⁶.

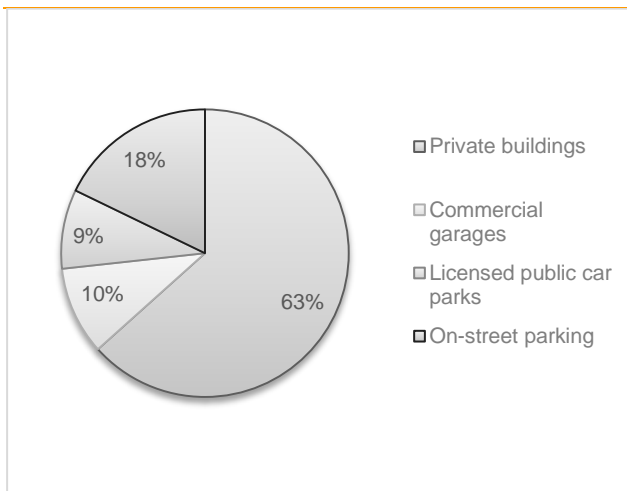
¹⁴³ Interview with senior official at Agency mobility, Paris, May 2015 and at the Traffic Department, January, 2016.

¹⁴⁴ A number of events were organized by the City of Paris in order to discuss specific urban issues at night, such as a large public consultation in 2010 (Etats généraux de la Nuit) (Armengaud, 2010).

¹⁴⁵ For example, line 91 that connects circularly the Montparnasse station with Place d'Italie.

¹⁴⁶ Following the election of Mayor Hidalgo and the arrival of Elisabeth Borne as RATP's CEO, a large public consultation was introduced in 2016 in order to support a profound reorganization of the bus network.

Graph 4. Parking facilities in the city of Paris, as of end 2014.



Source: Based on the information provided in Ville de Paris, *Bilan des déplacements à Paris*, 2015

- The “Quartiers verts” initiative:

The flagship initiative “Quartiers verts” is also particularly representative of the way through which the Delanoé administration drew on past experiences while altogether intensifying and expanding it as part of more comprehensive, systematic and long-term urban renaissance strategy that combined transport, environmental and urban planning resources. The “Quartiers verts” initiatives developed under Delanoé’s administration (see Map 8) were altogether larger – 36 areas in total that covered 35 ha on average - and drew upon a larger amount of resources - €1,8 million/neighbourhood that is some €55.000/ha (Bureau, Glachant, 2010, op.cit.). Harnessing national level policy resources,¹⁴⁷ it strategically combined pedestrianisation initiatives with the greening of public roads and the introduction speed limits. The “Quartiers verts” areas were systematically integrated into local traffic plans in order to divert traffic towards main axes, as well as into city-wide plans to expand cycling lanes, right-of-way bus lanes, and measures encouraging walking¹⁴⁸. By 2014, both policy initiatives – Quartiers tranquilles and Quartiers verts – accounted for 18 per cent of the city’s territory and a third of Paris’ roads (some 560 km) saw reductions in speed limit to 30 km/h, while the Boulevard périphérique saw a drop from 80 to 70 km/h.¹⁴⁹

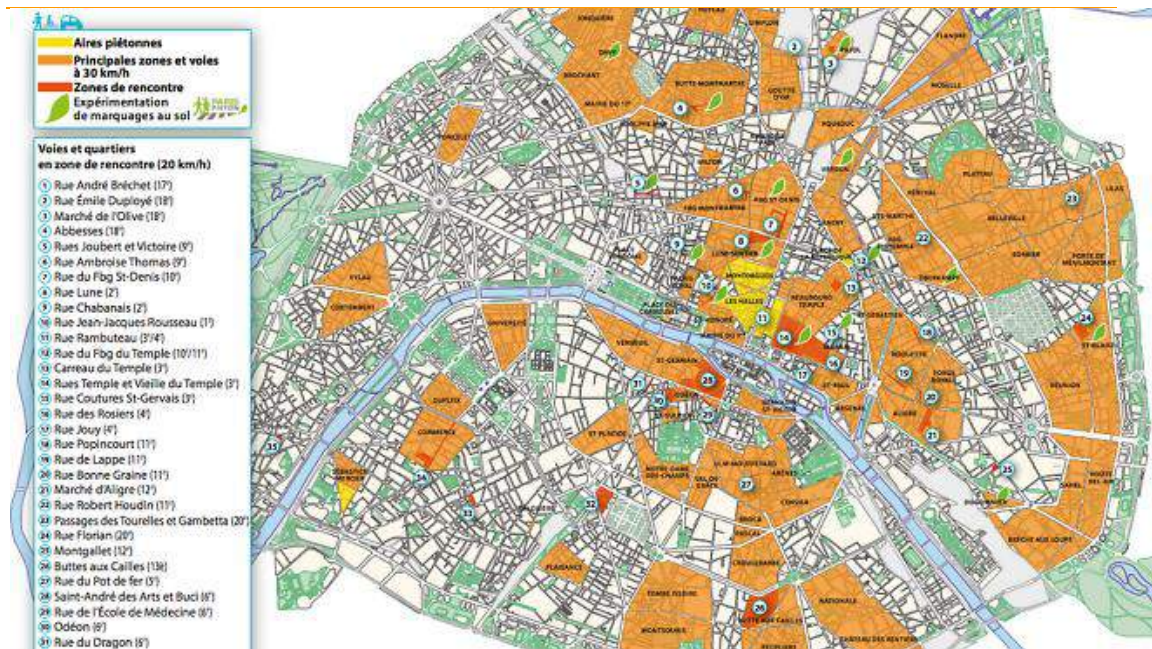
Such incremental approaches to reducing car use - Street design and Quartiers verts initiatives - combined with major flagship initiatives promoting cycling and extending urban tramways.

¹⁴⁷ Changes in the Highway Code, including 30km/h and 20km/h zones and the 2008 national decree in favor of pedestrian priority zones.

¹⁴⁸ In addition to the changes already brought on by Tiberi’s administration as part of the Quartiers tranquilles policy, specific measures included the development bicycle parking, the refurbishment of street lighting and furniture, parking management for residents, etc.

¹⁴⁹ Interview with transport planner at IAU, March 2015.

Map 8. “Quartier verts” and “quartiers tranquilles” areas as of 2013



NB: Yellow = Pedestrian areas; Orange = Main areas and street with 30km/h speed limit; Dark orange = Meeting areas with a 20 km/h speed limit). Source: <https://worldstreets.wordpress.com/2014/05/21/paris-to-limit-speeds-to-30-kmhr-over-entire-city/>

- *The development of cycling and the Velib bike-sharing system:*

Early on, the Greens - particularly Deputy Mayor Denis Baupin, as chairman of both the City Cycling Club and the Cycling Promotion Committee - promoted cycling as an urban transport alternative with the support of pro-cycling organizations. Learning from cities such as Copenhagen and Amsterdam, the Greens proposed public funding of dedicated cycling infrastructure across the city,¹⁵⁰ which drew even greater public controversy than pedestrianisation measures and was criticized by the political opposition as ideologically driven policy. Attempting to mitigate conflict by taking over project leadership, Mayor Delanoé and the Socialist Party instead sought to engage the public and raise awareness through highly visible initiatives such as Paris Plage. They achieved this through the Vélib project, a bike-sharing system created through a private-public partnership with JC Decaux, a family-owned and French-based advertising company.

Inspired by existing schemes in La Rochelle and Lyon but implemented at significantly greater scale in terms of the number of bicycles per inhabitants and geographical coverage (APUR 2006), the Parisian Vélib system was introduced in 2007 and operates through an advertising concession granted to JC Decaux in exchange for start-up and operation. Financed by a monopoly on advertising revenues, the scheme sparked a political discourse on integrated mobility and gratuity (Huré 2012), and helped promote Paris on the world map - in contrast to London—as an innovative, livable and competitive environment (Mboumoua 2015). Its advanced - and regularly updated—technology has further broadened use among non-residents, tourists and regional commuters (Boullier 2014).¹⁵¹ As of 2016, Velib' consists of some 23.000 bikes, 1800 docking stations that spread out across the city of Paris (every 300 m) and 30 adjacent municipalities. It also constitutes the most visible component of the city's cycling strategy and a major driver for the rapidly expanding urban cycling network.¹⁵² Between 1999 and 2012, cycle routes grew over fourfold in Paris from 129 km to 545 km.¹⁵³ While Mayor Delanoé

¹⁵⁰ Interview with senior official at the Traffic Department, op.cit.

¹⁵¹ This is a major difference with the choice made in other cities, in which the bicycle sharing system is limited to city residents or to public transport users.

¹⁵² This is notwithstanding later criticisms against the system's costs and efficiency. These debates eventually led to the city of Paris' recent decision not to renew JC Decaux's concession for another 15 years

¹⁵³ See the Traffic Department's annual reports.

and his cabinet carefully monitored the public-private initiative through implementation and continued expansion, the financing arrangement remained a sore point for the Greens.¹⁵⁴

- *The development of a Parisian urban tramway system:*

The City of Paris also invested some €680 million into its tramway policy between 2005 and 2015 (see Map 9), and more specifically, in the development of Line 3 as well as improvements on Line 2. The municipality also took responsibility for 60% of the total costs (€193 million) for the line 3 extension (T3b project)¹⁵⁵. The extension of the T3 urban tramway line did, however, reinforce inter-partisan tensions around urban transport transformations. With the opening of the T3 line, Transportation Deputy Minister Baupin approached the RATP, APUR and related regional municipalities to discuss the line's extension towards the east and up to Porte de la Chapelle in the north of Paris, framing the tramway extension as an urban regeneration project. To gain regional support, he additionally highlighted potential benefits for disadvantaged neighbourhoods in the urban fringes as well as the opportunity to develop public transport services with and between adjacent municipalities. To pre-empt controversy in the aftermath of public backlash to the Green Party's cycling proposal, Baupin managed the project behind closed doors while selectively engaging target groups such as resident committees and shop-owners on an as-needed basis (Lefébure, 2007). In a scathing response, Socialist and Communist mayors from the northern districts of Paris and the Seine Saint Denis département publicly questioned Baupin's - and the Parisian Green's - commitment to reducing socio-spatial inequalities and challenged the project's rationale and design. Deeming the latter too technocratic and neglecting input from neighbourhood-level stakeholders, they called for a public debate, which followed in the course of six months in 2006.

Taking place in Paris and adjacent municipalities, the debates revealed a widespread distrust of what was purported to be an ideologically-driven transport strategy and centralized, technocratic form of policy-making. They further shifted focus from the project's technical characteristics to social disparities and governance in the capital-city region, along with questions of who would benefit from the project and how to manage urban policies within and outside Paris. Together with city bureaucrats and politicians, institutional and political actors, civil society, and professional organizations (e.g., taxi drivers) actively participated in the debate.¹⁵⁶ By contrast, Mayor Delanoé strategically chose to limit his direct involvement in the process and strategically positioned himself as a mediator between Baupin and opponents to the project. While the tramway extension project was formally adopted in 2009 and opened in 2012, it froze future urban tramway projects¹⁵⁷ and confounded Left-Green relations.

Map 9. Successive extensions of the tramway line 3 (as of 2012)



NB: orange: 1st segment, Green: 3b, dotted line: 3rd segment, underway since 2014.
Source: Ville de Paris, 2013.

¹⁵⁴ Opinion polls were regularly commissioned in order to feed political discourses, see for example TNS SOFRES (2008): <http://www.tns-sofres.com/publications/barometre-de-satisfaction-du-velib-2008>

¹⁵⁵ It benefited from a €130 million loan from the European Investment Bank.

¹⁵⁶ As observed in other CNDP debates, participation from residents and the wider public remained low (Lefébure, 2007, 170).

¹⁵⁷ Apart from the second extension of the T3 line towards Porte d'Asnières, which is currently underway.

After the Green party's poor results in the 2008 elections, a new Socialist Deputy Mayor, Annick Lepetit, presided over transport while Baupin became Deputy Mayor for Sustainable Development, Environmental Affairs, and Climate Change. Despite the Greens' critical role in prioritizing transportation measures within the city and developing the Parisian approach to sustainable transport, inter-partisan dynamics within the Left-Green majority - complete with conflicts and cooperation - posed thorny challenges (Pichon, 2012). Most decisions entailed lengthy political negotiations on a case-by-case basis. As the Socialist Party gained popularity and electoral strength during Delanoé's second term, transport increasingly competed with other policy priorities such as housing and had to face reduced budget allocations (Foing 2012). In this context, Mayor Delanoé and the Socialist Party increasingly relied on other policy resources and alliances in order to advance transport initiatives. From 2012, they reinvigorated efforts around pedestrianisation and car traffic reduction, for instance closing of the urban highway flanking both the left and right banks of the Seine.

Capacity building and policy resource accumulation

While undertaking various transport policies and programs, the Delanoé administration also reinforced its comprehensive urban transport agenda by restructuring the city bureaucracy in ways that promoted local accumulation of policy resources and renegotiated power relations with state elites, enterprises and local authorities in the region. Between 2001 and 2015, the City of Paris emerged as a strong political organization with increasing economic resources and political capacity to negotiate with the State and private companies in order to develop transport policy initiatives. During this time period, its budget increased from 5.8 to 10.2 billion euros while at the same time, the State contribution decreased from 17 per cent to 10 per cent (see Table 4b above).

- *The development of public-private joint initiatives:*

In this context, the City lessened its reliance on the central government while launching new mobility initiatives that are co-produced with large urban service firms, such as JCDecaux (Vélib) and Bolloré (Autolib), and managed as part of public-private partnerships. In spite of the Greens' reluctance to develop such funding mechanisms, this choice was justified due to the administration's resistances against the development of new mobility initiatives (Tironi 2015). Building on the Vélib's success (Mboumoua, 2016), the city introduced an electric car sharing system, i.e., Autolib, in 2011 in partnership with the Bolloré Group, a French-based company specializing in transport, logistics and advertising among others. Autolib was used as an opportunity to promote its electric car system, Blue Car, whereas the city of Paris wished to expand its transport policy offer through the use of new technologies. Unlike the Vélib system, Autolib was introduced metropolitan-wide under the authority of an administrative body consisting of representatives from 46 municipalities privy to the system's development. Another difference with the bike-sharing system lies in the funding of the Autolib system, which receives direct support from involved municipalities through public subsidies during the total duration of the contract (2011-2023). Considered the most visible component of the city's efforts to promote electric cars, the network comprised 180 charging points placed every 500m by the end of 2016. It maintains a fleet of 4000 vehicles which are used by some 125.000 registered subscribers.

Beyond these two flagship examples, public-private partnerships and competitive tendering procedures have considerably increased the city's capacity to bypass administrative and political resistances towards new mobility initiatives.

In further seeking alternative funding sources, the city also participated in bids for European funding and international networks of cities as well as research and development partnerships with universities and state-owned enterprises such as RATP or ENEDIS (Power grid operator). Resulting experiments provided the city with a unique opportunity to explore new dimensions of urban transport on a short-term basis and at low cost while simultaneously drawing on findings to improve citywide policies and programs.¹⁵⁸

While allowing a rapid increase the scope of mobility policies, the introduction of public-private partnerships also initiated a shift in the city's role from service provider to that of a regulatory authority.

- *Developing new policy capacities:*

¹⁵⁸ Current efforts now lie with urban logistics, electromobility, and the management of big data.

This evolution also led to developing new policy capacities in transport and to increase its autonomy vis-à-vis state representatives and, to a lesser extent, regional actors. The city strengthened its information and knowledge by increasing the number of indicators used to both monitor and assess policy implementation¹⁵⁹. The mayor also spearheaded administrative changes such as reshuffling funding priorities in favour of transport and urban renewal, reorganizing administrative resources under the supervision of the Traffic Department, and creating the Mobility Agency (2011) with a concentration on research and innovation activities. This was also achieved by organizing tendering procedures to encourage competition with state elites and enterprises under the City's oversight. The recent decision made in April 2017 to suspend JC Decaux's *de facto* monopoly over street design by handing over the management of the Vélib system to one of its competitors confirmed the city's wish – and capacity – to retain the upper hand on the structuring of these new markets¹⁶⁰. Similarly, the use of competitive tendering procedures in the allocation of concessions for operating Parisian urban tramway lines has allowed the city to maintain pressure on both RATP and SNCF¹⁶¹. Finally, the city drew extensively on consultation processes in order to ensure support from the districts' administrations and elected representatives during implementation stage. In addition to the large amount of resources mobilized at planning stage for the urban tramway or the pedestrianisation policies, similar efforts were less successful during further attempts to expand the Quartiers tranquilles / Quartiers verts policy towards the western districts, which are traditionally considered bastions of the Conservative Party and where the development of mobility policies faces strong resistances from car users.

The decade-long process of planning and policy implementation - beginning with Paris Plage, urban tramway planning, and anti-noise urban redesign and regeneration measures; formalized and scaled up through the city's first Mobility Plan; and culminating in projects like the Velib bike share system, urban tramway expansion, and the Autolib electric car sharing system - carried long-term consequences for urban transport and mobility agenda setting in Paris. The city not only cultivated its own unique approach to sustainable urban mobility but further expanded its capacity for developing autonomous policy alternatives independent of support from transport authorities and operators. The approach itself actively sought to reduce car use by enhancing transport alternatives and reclaiming available road space from cars to broader uses while also using transport as an important means to undertake large-scale urban renewal programs in areas located at the margins of the capital city.

This latter aspect of highlighting the *urban* dimension of transport and mobility differentiated the Left-Green policy offer from that of the Conservative Party, but also, from those of the Socialist and Green Parties at the regional and national level. Widely considered a major political success contributing the re-election of the left in Paris in 2008 and 2014, it became a source for inspiration to other cities worldwide. Still, solely focusing on the city's initiatives in transport neglects the critical role of inter-governmental relationships in change strategies. It also neglects the huge amount of resources made available at regional level for urban sustainable transport initiatives, which the city of Paris was able to mobilize in support of its own schemes.

4.3.2 Building capacity for sustainable urban transport policies in the region

Outside of Paris, the Left-Green majority likewise assumed leadership over regional governance from 1998 - three years before they took Paris. With Jean-Paul Huchon (Socialist Party) at the helm, the coalition won three consecutive elections (1998-2015) during the course of which it developed transport innovations at the regional level, both with cooperation and competition among municipalities, the city of Paris, and the state.

Similarly to the situation observed in Paris, a combination of institutional and political factors fostered a shift in transport policy developments. Undoubtedly, the introduction of the 2004 Act on Local Responsibilities eventually granted municipal and regional governments in the capital-city region with some significant autonomy in transport planning and policy-making. Nevertheless, such opportunities did not suffice on their own. While undertaking the various transport policies and programs, the region reinforced its comprehensive urban transport agenda by restructuring its bureaucracy in ways that promoted local accumulation of policy resources and

¹⁵⁹ For a systematic overview, see the city's annual "Bilan des déplacements à Paris".

¹⁶⁰ It should be noted that this decision is unprecedented in the French context (Huré, 2012).

¹⁶¹ Interview RATP, Paris agency, March 2015.

renegotiated power relations with state elites and enterprises. There again it relied upon the example set by the City of Paris while at the same time introducing some innovative measures of its own, with some transformative impact on transport policy developments and results.

When compared to the situation observed in Paris and some municipalities in the inner-suburbs closest to the Paris ring-road, the changes observed at regional level were slower and less visible due to the specific combination of institutional, political and socio-economical factors. Also, as the outer-suburbs were still rapidly developing, state elites and local authorities highlighted the need to further expand the road network in parallel to public transport and sustainable mobility initiatives. This section accounts for such levels of spatial differentiation in the development and distribution of sustainable transport policies across the Ile-de-France region.

The region's efforts in expanding the sustainable transportation agenda

The elaboration of the first Regional Mobility Plan (PDUIF, 2000) provided the region with an opportunity to define its own sustainable mobility policies with support from suburban municipalities. Drawing on the myriad of initiatives that had been introduced at municipal and departmental levels as well as its 1996 Soft Mobility Plan, the Regional Council joined forces with IAU Ile-de-France¹⁶² to promote transport alternatives and urban regeneration against state representatives and transport organizations. With the primary aim of reducing individual car use by promoting alternative modes of transport, the Regional Mobility Plan further complemented the latest Region-State Contract (2000-2006), which prioritized the funding of public transport infrastructure over roads.¹⁶³ It also provided a useful framework for hitherto car-oriented regional municipalities, including the city of Paris, to elaborate their own Mobility Plans with sustainable urban transport components and seek regional funding support.

In addition to changes in transport planning capacities, the Regional Council also added much-needed implementation capacity by taking over the STP in 2000 – which was renamed STIF – and by benefiting from a reform of network operating contracts. In spite of continued inter-institutional rivalry, the Left-Green majority's leadership over the region and Paris eased coordination of policy goal setting and implementation across levels of government and at the regional scale. First, STIF brought added capacity to negotiate new policy goals with transport operators and local authorities and streamlining policy offers, across the region (Orfeuill, Wiel, 2012). Bilateral short-term network operation contracts with transport operators (RATP, SNCF and bus companies) were introduced and added to the quality of transport service delivery and internal management during the 2012-2015 programming period. Second, STIF emerged as a preferred venue for inter-municipal negotiations and technical discussions on operationalizing public transport policies and spending allocations across the region. It successfully oversaw negotiations about increasing tax rates for *versement transport* across the region within the limits set by national law (see Table 6 in section 2). This was achieved by confirming the principle of differentiated rates in the region – Paris, the inner and the outer suburbs, and since 2016 and the creation of the Grand Paris metropolitan area, the introduction of a fourth zone (see Table 9 above). Apart from discussions with local authorities, STIF also negotiated high levels of VT rates in the region with economic actors and business groups in the region, whose interests are represented through the Chambers of commerce in the region, as well as in the Regional Social, Economic and Environmental Council¹⁶⁴.

Together, these added resources allowed the regional council to increase its staff and budget size as well as defining its own transport policies for the first time with support from regional municipalities. STIF strengthened the overall public transport capacity and efficiency in the region, with a particular emphasis on the bus network that had long been neglected. As of 2001, it launched preliminary work on the Mobilien network, which identified some 150 bus lines operating at the regional level that could be prioritized as high service bus routes. STIF brought together representatives from local authorities and transport companies (RATP, Optile) during a large consultation phase (2005) and a decision was reached in 2006 to allocate € 70 million to this project during the 2006-2010 contract period with a specific focus on developing services in the outer suburbs

¹⁶² Since 1983 authority over this regional planning agency was transferred to the Regional Council.

¹⁶³ In the 4th plan, this included projects to extend existing metro and urban tramway lines, the development of circular lines, the promotion of intermodality and accessibility across major interchanges. The 5th plan extends the duration of implementation for existing projects, introduces 5 new extension projects and provides funding for feasibility studies about new transport projects.

¹⁶⁴ Conseil économique, Social et Environnemental

area¹⁶⁵. The general aim was to streamline existing bus services throughout the region while at the same time enhancing its homogeneity in terms of both quantity and quality. These improvements included bus priority systems, higher, more regular frequencies, extended time slots, and in some cases, the development of right-of-way lanes. The regional mobility plan also acknowledged the need to develop differentiated transport policy approaches across the region, with a distinction between core urban areas (incl. the city of Paris)¹⁶⁶, and rapidly developing urban areas in the outer suburbs¹⁶⁷. In both cases, some attempts were made to increase the integration between land-use and transport planning.

Another regional policy initiative is the Noctilien bus network, introduced as of 2005, which was progressively introduced in order to provide a minimum level of night services and compensate for the absence of rapid transit and rail-based transport services at night¹⁶⁸. Aiming at “bringing back home workers and the youth”, it quickly expanded from the City of Paris (2005) towards the rest of the region (2009) and now amounts to some 47 lines throughout the region¹⁶⁹ that are operated by both RATP (32 lines) and SNCF (16 lines). In addition to the changes brought on the bus network, STIF also made significant efforts to provide region-wide travel information, change the tariff policy, and install new ticketing systems.¹⁷⁰

City of Paris and transport companies: altering the terms of the relationship.

Within this institutional framework, the city of Paris as well as both RATP and SNCF found new positions. In ambitiously undertaking a sustainable urban mobility agenda primarily catering to its own residents rather than the State or the region, the city of Paris unwittingly alienated suburban municipalities. In addition to problematizing the profound inequalities in the capital-city region, the latter criticized the lack of stakeholder engagement as in the case of the urban tramway project. The public controversy over the T3 extension, partly inflamed by backlash from suburban elected officials, revealed for the city the critical need to enlist, or at least engage, suburban municipalities in undertaking transformative transport initiatives. Consequently, Mayor Delanoé charged Pierre Mansat, a member of the Communist Party whom he appointed as Deputy Mayor of Territorial Cooperation, to facilitate cooperation between the city of Paris and suburban municipalities - through the *Conférence Métropolitaine* (2006) and *Paris Métropole Initiative* (2009).¹⁷¹ By strengthening the role of STIF as a legitimate arena for fostering political compromises over public transport planning, the City of Paris sought to increase its own autonomy in developing new transport policy measures and initiatives. Indeed, support from suburban municipalities was critical in dismantling urban motorways in the city centre, reducing road space available for cars, and tapping into regional funding in order to expand public transport capacity within its own territory. In exchange, the city of Paris supported suburban municipalities during negotiations over spending allocations within STIF, over the State's contribution to transport initiatives in the region and more importantly, during the conflict over the Grand Paris initiative.

In the case of RATP and SNCF, the 2000 reform opened a decade-long period of institutional struggles between the regional transport authority and these large transport companies. In this context, the changed approach advocated by the city of Paris, together with the reshuffling of transport funding mechanisms to the

¹⁶⁵ A total of 150 bus lines were identified in 2000. In 2006, € 15 million were spent on this project (€ 8 million by RATP, €7 million by Optile), and it was agreed that half of the total amount (€35 million) would be spent in the outer suburbs, 18 in the inner suburbs, and 17 in Paris.

¹⁶⁶ For example, the reallocation of road space to public transport, cycling and walking, the reduction of speed in residential neighbourhoods and the development of dedicated lanes for buses and cycling

¹⁶⁷ For example, promoting urban densification strategies around train stations, improving local public transport networks and promoting modal shift.

¹⁶⁸ It replaced the Noctambus network, which ensured accessibility to and from the Chatelet station for workers living outside Paris.

¹⁶⁹ According to RATP data, 70% of Noctilien bus services are concentrated during weekends.

¹⁷⁰ Including the Navigo Pass – a contactless smartcard that can be used on all public transport systems in the region, including the Vélib system – and Imagine R card for students, the Ticket t - a single trip ticket common to all transport companies.

¹⁷¹ This was first achieved as part of the *Conférence métropolitaine* (2006) and as of 2009, as part of *Paris Métropole Initiative*.

benefit of STIF, progressively led to profound management reforms within RATP¹⁷². Following a decade of strikes and struggles with central government, and in the context of the rising Parisian urban transportation agenda, RATP underwent a series of internal reforms during the 2000s aiming at strengthening its worldwide reputation while at the same time establishing new grounds for discussions with local authorities in the capital-city region. Successive negotiations with STIF on performance-based operating contracts confirmed shifting power relations and led RATP to develop a larger number of transport services as part of its newly-defined role as “urban mobility service provider”. The development of the urban tramway system and the changes brought to the bus network also contributed to shifting internal power relations and offered the company’s management additional capacity to negotiate with unions. To be sure, specific measures such as night services on the metro and the bus network still faced strong opposition from drivers on both networks, and specific agreements were negotiated in order to introduce the Noctilien network. But since the late 2000s, RATP’s interests shifted towards medium-sized cities in the inner-suburbs, which now justifies an increasingly differentiated portfolio of services in order to retain its position in the City of Paris and develop new activities outside Paris and worldwide. This is achieved through small-scale partnerships with other transport providers in the region (e.g., Autolib) or by seeking for European funding (e.g., INTERREG, Horizon 2020, etc.) in order to explore new technologies and develop new services in close relationship with local authorities in the capital-city region.

All in all, results were particularly impressive in the field of urban transport due to increased coordination with local authorities (municipalities, départements), and to some extent, due to additional funding opportunities as part of the national urban transportation agenda (see below). Between 2006 and 2014, six new urban tramway lines opened - only two located in Paris - in addition to the construction of four metro line extensions (see Tables 9a and 9b below). In exchange for more autonomy, the city of Paris also agreed to develop new mobility services at its own cost as in the case of the Vélib network, but then extended the system to 30 municipalities outside Paris from 2009 beyond the scope of the concession with JC Decaux. In turn, Autolib planning spanned 46 regional municipalities from the start and now includes 97 municipalities.

Table 8a. Urban tramway developments in the Paris Ile-de-France Region (1992-2014)

Line	1 st opening	Mainly location	Current routes
T1	1992	Inner-suburbs, north-east (Seine Saint Denis)	Asnières-Gennevilliers-Les Courtilles - Noisy-le-Sec
T2	1997	Inner-Suburbs, south-east (Val-de-Marne)	Pont de Bezons - Porte de Versailles
T3 (in two arcs, T3a & T3b)	2006	Paris	Pont du Garigliano - Porte d'Ivry Porte d'Ivry - Porte de la Chapelle
T5	2013	Inner-suburbs, north-east (Seine Saint Denis)	Marché de Saint-Denis - Garges Sarcelles
T6	2014	Inner-Suburbs, south-east (Yvelines, Hauts-de-Seine)	Vélizy-Villacoublay (Robert Wagner) - Châtillon-Montrouge
T7	2013	Inner-Suburbs, south (Essone)	Villejuif Louis Aragon - Athis-Mons Porte de l'Essonne
T8	2014	Inner-suburbs, north-east (Seine Saint Denis)	Epinay-Orgermont - Villetaneuse Université - Saint-Denis Porte de Paris
Total RATP as of early 2017	7 lines, 187 stations, 105 km, 830.000 passengers/day		
T4	2006	Inner-suburb north-east (Seine Saint Denis)	Bondy – Aulnay-sous-Bois
Total SNCF as of early 2017	1 line, 11 stations, 7,9 km.		

Table 8b. Metro line extensions within Paris and into the suburbs (1998-2014)

Extension	Metro line	Route
1998	line 13 (north)	from Basilique de Saint-Denis to Saint-Denis - Université
1998	Météor or line 14 (east)	from Madeleine to Bibliothèque François-Mitterrand

¹⁷² The SNCF’s position remains more ambiguous and altogether conflictual as shown during recent negotiations over the 2012-2015 and the 2016-2020 operating contracts. It is only over the recent period, due to the opportunities opened by the Greater Paris initiative and in context of growing criticism at State-level against the company’s preference for high-speed, that SNCF management showed some renewed interest for urban transportation. Interview STIF, May 2015 and Interviews member of parliament 1 (Conservative Party) and 2 (Socialist Party), June 2015.

2003	Météor or line 14 (west)	from Madeleine to Saint-Lazare
2004	Météor or line 14 (east)	from Bibliothèque François-Mitterrand to Olympiades
2008	line 13 (north)	from Gabriel Péri to Asnières - Gennevilliers - Les Courtilles
2011	line 8 (east)	from Créteil-Préfecture to Pointe du Lac
2012	line 12 (north)	from Porte de la Chapelle to Front Populaire
2013	line 4 (south)	from Porte d'Orléans to Mairie de Montrouge

That said, the Regional Council continued to lack effective steering capacity until the late 2000s. Only some relatively small and diffuse policy initiatives primarily aiming at enhancing public transport systems' accessibility, attractiveness, and reliability, were introduced. As the Regional Council gained policy resources and implementation capacity, it not only pushed back against state imposition of spatial and transport planning agendas but also mediated contentious dynamics between the city of Paris and other Ile-de-France municipalities. Continued struggles over the State allowance to the STIF budget only provided the regional council with a limited budget and autonomy, much less than that of Paris City Council. Most regional initiatives in transport experienced considerable delays or were abandoned due to resistances from RATP and SNCF management or employees. This lack of cooperation is particularly visible in the case of regional systems (RER, regional trains) with state elites' reluctance to acknowledge STIF's authority and continued RATP-SNCF rivalry. The network's age, especially on lines A and B, as well as unresolved compatibility issues between transport companies, contributed to repeated delays, network failures and to its lack of reliability. In those cases, in which increased coordination required some changes in the management of staff and career developments, such as the creation of joint traffic control centers, resistance against proposed improvements were particularly vivid and often abandoned because of the fear of strikes. Last but not least, 11 public transport infrastructure projects that were included in the 2000-2006 region-state Contract were delayed due to late payment or indefinite postponements of amounts owed by the state. This justified their integration in the next programming period (2007-2013).

Concluding remarks

Notwithstanding such limitations, the Regional Council took the opportunity of newly gained political resources and institutional powers in order to increase its leadership over transport planning and policy-making in the region. As prominent members of the Green Party transitioned from Paris city hall to the regional assembly following the 2004 regional elections, some of the transport solutions that had been experimented with in Paris were promoted at the regional level.¹⁷³ Moreover, the elaboration of a new generation of planning documents and contractual agreements with concerted aims of promoting sustainable transport offered the region a timely window of opportunity to intensify and expand its transport agenda forward.¹⁷⁴

4.3.3 Weak institutionalization of the region's leadership over transport governance.

The elaboration of the Regional Spatial Planning Document (SDRIF 2007, 2013) marked the first time the Regional Council exercised the authority to formulate its own strategic planning objectives and lead the design process with support from IAU Ile-de-France. Unlike the situation observed in the previous period during which the regional scale was considered a preferred policy venue for seeking policy resources in support of projects designed elsewhere, the regional authority sought to effectively structure transport policy objectives and resources around its own policy priorities. In doing so, the Region openly challenged other levels of government, including the State, and met strong resistances from a number of stakeholders – subregional levels of government, transport companies and large economic groups – as observed during successive struggles over the Grand Paris Express project. This confirmed the region's weak position as well as the enduring role of political

¹⁷³ Acting Vice President of Transport for the Regional Council, Pierre Serne, Green Party member and former advisor to the Paris Deputy Mayor of Transport Denis Baupin - led discussions around the new SDRIF and Mobility Plan (PDUIF 2008). Baupin himself was elected as an MP in 2012, and paid less attention altogether to transport and mobility issues as he became vice president of the French Parliament.

¹⁷⁴ Road competencies also evolved following the 2004 decentralization reform. All national roads that are not part of the national motorway network were transferred to the départements.

and institutional competition as the main driver for transport policy developments in the French capital-city. More fundamentally, it contributed to further crystallising the positions held by competing approaches to transport policy futures.

Transport as tool for compact spatial planning or for strengthening economic competitiveness?

The proposed 2008 SDRIF contrasted from earlier versions in advocating a shift towards more compact spatial planning, incremental urban investments, and a more autonomous future for the capital city-region that prioritized the interests of its local inhabitants rather than that of the State¹⁷⁵. It further paid extensive attention to urban transport (and less attention to roads) as part of its emphasis on sustainable transport policies and increased liveability and quality of life. In parallel, the Region and STIF launched the revision of the Regional Mobility Plan in 2008, in order to achieve a significant reduction of individual car use by 2020, in part by committing to a 20 per cent increase in public transport and 10 per cent increase in walking and cycling modal shares (proposed PDUIF 2008). In place of a radial network towards the City of Paris, it aimed, on the one hand, at developing direct and rapid connections between large urban and economic centres in the periphery, and on the other hand, at forging new interconnections between existing networks and the new circular axes.

In contrast to the capacity-oriented and infrastructure-led approach of former regional transport planning documents and contractual agreements, this regional transport agenda aimed to improve public transport service quality, in part by allocating funding to maintain, modernize and optimize existing networks (mobilization plan), and by focussing on the development of missing links (Arc express) (see Map 9). Another point of differentiation was the greater attention given to increasing policy resources such as funding and tools to operationalize goals and objectives; the region suggested a 10-year €19 billion investment programme co-funded by the region, the state, départements, and municipalities – including the budget already committed in the 2007-2013 state-region contract. Within STIF, new performance-based operation agreements with the region's main transport operators helped expand transport initiatives along the principles laid down in the proposed 2008 PDUIF. For instance, STIF introduced a type of bus rapid transit network in 2009 - the T-Zen bus system - in order to increase connections within the inner and the outer suburb areas¹⁷⁶. In the case of regional rail-based networks, such as regional trains and the ageing RER system, STIF sought to negotiate its own transportation agenda with central government on the one hand and with RATP and SNCF on the other hand.

- *Growing opposition to the region's proposed reform agenda:*

The proposed plans, i.e., SDRIF and PDUIF, draw resistance from state elites and organizations, as well as from those local authorities that would not benefit from it. Throughout the elaboration of the SDRIF project, political debates were characterized by unusual levels of violence.

Together with RATP and SNCF, state elites repeatedly highlighted the region's lack of knowledge and expertise in transport. In its attempt to bypass resource-seeking strategies and impose its own transportation agenda, the Region also faced growing political opposition from elected representatives. Opposition was particularly vivid in Conservative strongholds in the region, where pro-car policies were promoted as a preferred solution against traffic congestion. For instance, the location of future transport infrastructures, which were also designed as priority areas for the development of housing and other economic activities, met with strong local reactions: while some claimed their rights to become a "sticker on the map", others rejected the constraints attached to the development of new transport infrastructures in terms of housing development. Many of them tried to avoid the introduction of urban planning restrictions within their own constituency, which were justified in the name of nature conservation and agricultural land preservations.

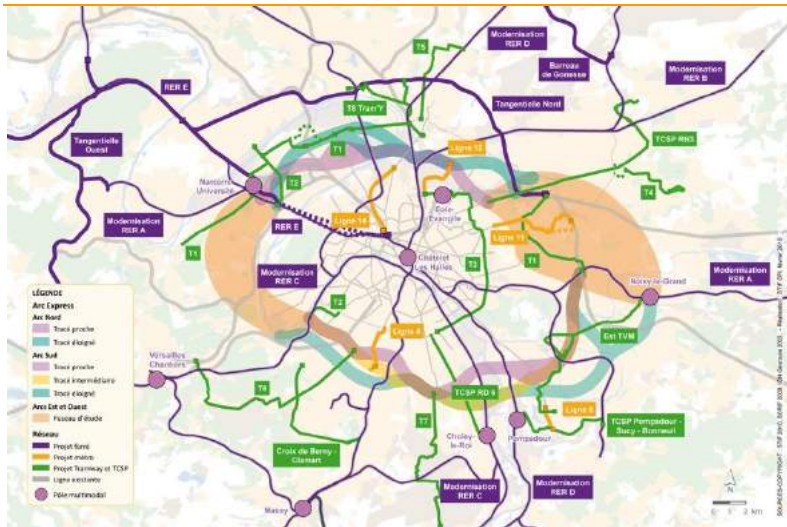
Notwithstanding their opposition to the regional scheme, local elected representatives recognized the Region's efforts in promoting a more collaborative approach and mobilizing unprecedented resources in terms of

¹⁷⁵ See also section 2 in order to put transport issues in a broader perspective.

¹⁷⁶ As of today, 2 lines have been created and 5 more are planned by 2020. Since 2014, it is operated by Transdev, a private company operating the since 2014.

both communication and expertise in order to include local authorities and the wider public in the spatial planning process.

Map 9. The region's mobilization and Arc express plan (as of 2010).



Source: STIF

In this context, President Sarkozy's Grand Paris Express initiative pushed regional transport issues on the national political agenda. Sarkozy's vision for transport infrastructure developments differed from that of the region in a number of ways. Drawing from his experience as local elected representative in the Hauts-de-Seine department, he promoted alternative project design and funding mechanisms such as public-private partnership or land value capture that would foster new synergies with large French construction and real-estate companies, such as Bouygues or Vinci¹⁷⁷. All three documents – the proposed 2008 SDRIF, the proposed 2008 PDUIF and funding attached to the 2007-2013 state-region contract – were put on hold.

- *The Sarkozy-Blanc Grand Paris express initiative:*

Nominating former RATP CEO Blanc¹⁷⁸ as Secretary of State to the Grand Paris project (2008-2010), and drawing on the support from large economic actors and state elites, he advocated infrastructure-led and mass transit solutions in order to complete and expand unfinished investments. This included the development of a circular rail line connecting all existing metro lines with one another¹⁷⁹ as well as major existing and planned development sites in the inner and outer suburbs (e.g., business districts, airports and science and technology clusters). Focusing on new infrastructure developments and inspired by his former work on the Météor project, Blanc recommended developing a 140-km underground metro line in the shape of a double loop located at a distance of some 10 km from the Boulevard périphérique.

¹⁷⁷ N. Sarkozy was trained as a lawyer and built his entire political career under the protection of his mentor, C. Pasqua, and in the Conservative Party. Among other things, he held several mandates as mayor of Neuilly-sur-Seine, elected representative in the Hauts-de-Seine departmental assembly and was later nominated budget minister in the Balladur Government (1993-1995). In his Declaration on his strategy for sustainable development (Roissy-en-France, 26/06/2007), he declared "We'll find large projects and we will mobilize national synergies in support of these major projects. This appears to me as a more ambitious and important reason to debate than endless discussions about whether or not our compatriots who benefit from social aid should also benefit from free public transport" (op.cit., TbA). Available at: <http://discours.vie-publique.fr/notices/077002121.html>

¹⁷⁸ Since his mandate as RATP CEO, Blanc had become a member of the centrist party UDI and held several elected mandates in the Yvelines department as member of Parliament, first between 2002 and 2008, and between 2010 and 2012.

¹⁷⁹ With a clear reference to the old dream of a "Métrosphérique project". Such a circular rail line had existed in the 19th century under the name of the "Grande ceinture". It was located between 5 to 20 km from the existing Parisian ring road (boulevard périphérique) and was used for passenger and freight traffic. Plans to rebuild a circular rail line were regularly discussed but never implemented, and most transport infrastructures and networks followed a radial pattern in order to increase accessibility to the Villes nouvelles.

In addition, Sarkozy insisted upon developing the Charles de Gaulle Airport Express line, a project that had been on the agenda since the mid 1990s but repeatedly failed due to continued and strong opposition from the north-eastern inner-suburbs who favoured the upgrading of the existing RER B line. The total cost of the Grand Paris Express project was estimated at € 14 billion that is, twice the amount invested every 10 years for transport policies and infrastructures in the capital-city region. Blanc also recommended that all proposed state investments, including those already committed as part of the 2007-2013 state-region contract, should be suspended or abandoned unless the region found alternative funding sources. All discussions with the region were interrupted.

Additional criticism against the Grand Paris Express initiative highlighted the project's flaws. Insofar as it was considered a "RATP project", several alternative projects were developed, first by the SNCF who proposed a rail alternative enabling shorter travel time between La Défense and Charles de Gaulle airport, and second by architects and urban planners who favoured a combination of over ground transport solutions (e.g., metro lines, urban tramways and a bus rapid transit) in order to intensify urban regeneration in the inner-suburbs¹⁸⁰. A number of prominent members from the Conservative and the Centrist parties in the region expressed some doubts regarding the costs of the Sarkozy-Blanc initiative and the project design process. Close ties between State elites and the industry were increasingly criticized as a case of "silent corporatism" and often compared to the "Météor-Eole debacle" which had been conducive to a major governance failure.

As the classic RATP-SNCF rivalry gained increased visibility, many feared that central government would, once again, fail to choose and once again prove its inability to prioritize the capital-city region interests.

All against Sarkozy: an original mode of transport governance in the capital-city region.

President Sarkozy's Grand Paris initiative was indeed considered a clear denial of recently gained local and regional autonomy. In their wish to defend their hard-gained powers, local authorities' first reaction was to develop to resource-maximising strategies in order to gain support from both the region and the State in support of their own plans. The regional council itself proceeded with the SDRIF's formal approval: it was unanimously adopted by the regional council (December 2008) and the STIF council (December 2009), but central government refused to transfer the plan to the Council of State for final approval. In the absence of central government's support, regional and local authorities, STIF and RATP focused on implementing the 2008 Regional Mobility Plan. In the context of the 2008 municipal and cantonal elections, local authorities in the Ile-de-France region published their own position papers on regional transport initiatives and took the opportunity of the public enquiry procedure on the proposed 2008 SDRIF to push forward their own preferences regarding strategic planning in the region.

- *Municipal- and departemental-led sustainable transport initiative in the inner-suburbs:*

Municipalities in the inner-suburbs were able to strategically tap into new pieces of national legislation in the environmental sector and this accelerated the diffusion of sustainable mobility and transport policies in the region. While national urban transportation policy objectives had previously targeted large metropolitan areas, successive Grenelle laws increased national funding for alternative transport solutions in medium-sized cities and in distressed areas within major metropolises – a readjustment that proved particularly beneficial for the inner-suburban area in the capital-city region. Similarly to the situation observed in the 1970s, the largest share of national funding promoted standardized alternative transportation systems such as right-of-way bus, metro systems and tramway projects, and only a limited amount of funding support was made available for urban mobility experiments, such as car and bike renting systems, congestion charges, and electric cars. The State strictly monitored implementation through successive competitive calls for projects (respectively in 2008 and 2011), to which both industry interests and specific types of municipalities (i.e. medium-sized cities, deprived neighbourhoods, and interurban mobility) could apply.

Under the joint pressure of local authorities, environmental NGOs and RATP, the capital-city region was granted a specific budget for transport initiatives and a total of €8 billion were spent for transportation projects between 2010 and 2015 (see Table 9). A number of local authorities were able to seize this opportunity in order to

¹⁸⁰ Among other ideas: A skytrain project (Christian de Potzamparc), transport as driver for polycentrism (Bernardo Secchi and Paola Viganò) or towards "a city among the greenest, the most compact and the highest quality of the built environment worldwide" (Winy Maas), Paris as a port city with the development of maritime transport alongside the Seine valley (Antoine Grumbach). For an overview, see: <http://www.ateliergrandparis.fr>

develop public transport or sustainable mobility initiatives and in doing so, contributed to implementing, in partnership with STIF and transport companies, some of the measures that had originally been included in the regional sustainable transportation agenda.

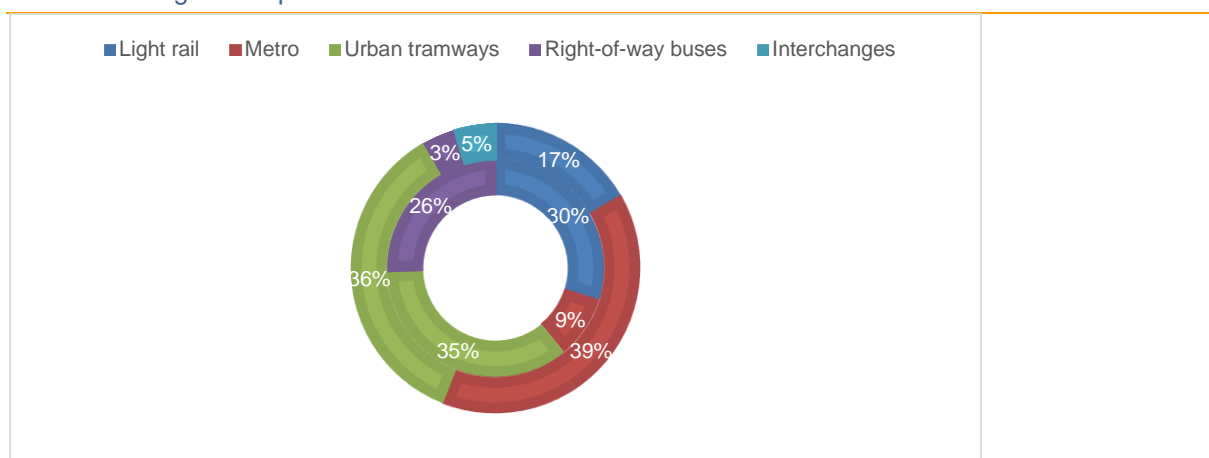
Inner suburbs particularly benefited from the expansion of metro lines and right-of-way bus lanes across the Boulevard Périphérique, as well as extended urban tramways, bus networks and interchange stations in the periphery (see Graph 5). Department authorities in particular emphasized possible synergies between the region's project with their own mobility plans in order to obtain support from STIF. As part of their newly-gained powers over road networks, they successfully negotiated cycling infrastructure investment as part of successive Regional Mobility Plans, in part, spurring development of "cycling gateways" connecting various cycling networks and reaching a total of 2500 km as of 2012.¹⁸¹ Similarly to the city of Paris, départements also explored additional funding sources at regional, national or EU level in order to develop their own transport initiatives such as cycling networks and inter-municipal bus systems, and in support of municipally-led transport initiatives. In a number of cases, and even though they lacked formal powers in transport – apart from maintaining the road network - they drew on their own budget in order to develop local transport services.

Table 9. Urban transport projects funded under the Grenelle Laws in the capital-city region.

Infrastructure projects	Number of projects selected	Length	Total costs
Tram-train	4 projects	60,7km	€1,4 billion
Metro	8 projects (extensions)	19,1 km	€ 3,3 billion
Tramway (rail & tires)	8 projects (incl.1 extension)	72,1 km	€ 3 billion
Right-of-way bus	4 projects	52 km	€ 0,3 billion
Interchange stations	7 projects		€ 0,4 billion

Source: compiled by Halpern, GART 2009 & Groupe de travail et comité Grenelle « Transports urbains ».

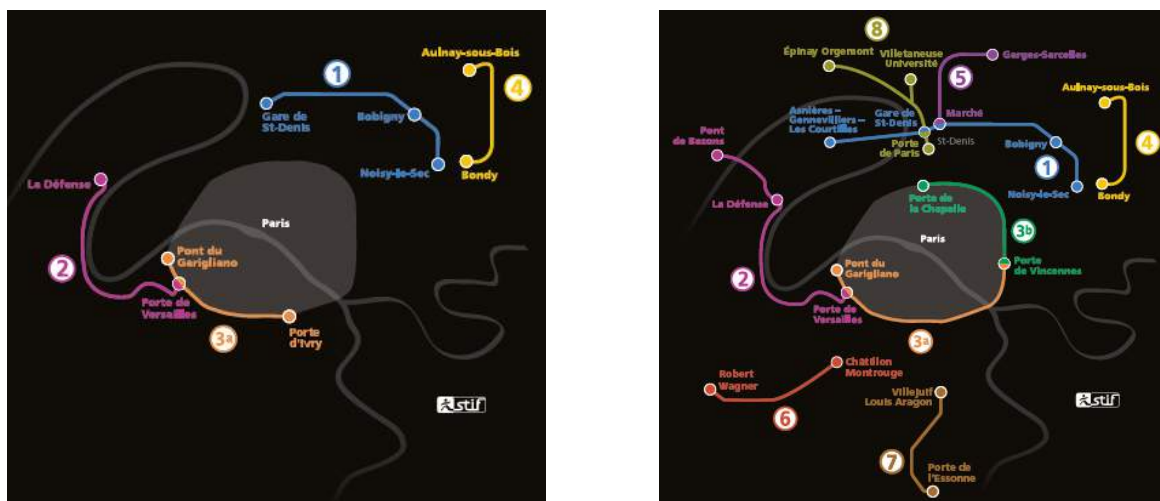
Graph 5. Urban transportation projects funded as part of the Grenelle funding programmes: costs vs. length compared



Source: compiled by Halpern, drawing from GART 2009 & Groupe de travail et comité Grenelle « Transports urbains ».

Map 9. The regional urban tramway system in 2010 and 2014

¹⁸¹ This represents a 60% level of achievement of what was originally planned in the first regional Mobility Plan.



Source: retrieved from STIF (2014, p.12 &13): http://www.stif.org/IMG/pdf/STIF_DP_Tramway_2014.pdf

- *The role of parliamentarians in accelerating the emergence of a compromise:*

In addition to municipally- and départements-led resource seeking initiatives, prominent MPs from the Conservative Party sought to open a new, unprecedented transport policy-making arena within national Parliament in order to negotiate a legitimate alternative to President Sarkozy's initiative. In the context of the 5th Republic, political debates and decision-making processes about large-scale infrastructure projects and transport governance in the capital-city region had been strictly contained within the executive power.

Seizing the opportunity of a government commission to produce a report on the funding of the Grand Paris Express project, Gilles Carrez – trained as a top civil servant, an elected MP from the Ile-de-France region¹⁸² and a prominent member of the Conservative majority – encouraged the creation of a larger working group on transport governance in the capital-city region. This was first achieved informally and this unanimously recognized expert of State finances and budget was able to strategically use his personal political and administrative network. While deliberately choosing to exclude RATP and SNCF, he included representatives from several central and local state administrations, as well as members of parliament from across the political spectrum and mainly elected in the region.

The opening of a transport policy-making arena within national Parliament accelerated the emergence of an original form of regional governance in the capital-city region. The Carrez report (2009) suggested a compromise between the Region's plan – securing funding for operating, maintaining and upgrading existing systems – and a State-led large infrastructure project. Recommending the development of an integrated approach that combined local- and region-wide systems, it also rejected the idea of land value capture and private-led initiatives in favour of classic transport funding arrangements, i.e. increase revenues from VT and users, and use state-region contracts as a preferred institutional venue for hierarchizing investment priorities over time¹⁸³. In order to avoid complaints from local authorities outside the capital-city area, it suggested creating a new business tax on offices, whose proceeds would be paid in full to the SGP, as well as increasing VT rates. Together, these funding mechanisms ensured higher levels of self-financing in the region. This political compromise was instrumental in preventing resistance from the rest of the country against later discussions about transport in the capital-city region¹⁸⁴.

¹⁸² Gilles Carrez began his political career as an elected representative from the Conservative party in the Conseil general du Val-de-Marne (département 94) in 1985, and became mayor of Perreux-sur-Marne, a municipality of some 33.000 inhabitants in the south east of the Ile-de-France region in 1992. Perreux-sur-Marne is located on the eastern branch of the RER A line, on a section operated by the SNCF and that particularly suffers from the SNCF-RATP rivalry in operating the line. This local mandate is jointly held with that of Member of Parliament since 1993. Since 2002, he acted as this assembly's general rapporteur of the budget.

¹⁸³ See Section 2 about the current state of discussions about public transport funding in the French context.

¹⁸⁴ According to one of our interviewee, this was mainly justified due to the costs of such projects: "no one wished to open a debate about the costs of a transport project in the capital region, which would inevitably lead to a discussion regarding the distribution of public funding and investments in the country as a whole" (MP, 21/05/2015).

Nevertheless, as part of its recommendation about the governance of transport in the capital-city region, the Carrez report also confirms and reproduces the State administrative elites' distrust against the Region and the STIF¹⁸⁵. First it recommends creating a new state-owned transport company, i.e., the future Société du Grand Paris, responsible for designing and implementing the Grand Paris initiative and to be placed under the STIF authority. Second it recommends putting an end to RATP-SNCF rivalry in the region as well as for research and development activities. Third, the Carrez report laid the ground for the changes that were eventually brought to the Blanc proposal during parliamentary debates over the 2010 Grand Paris Law.

Discussions about this piece of legislation confirmed the role of the national Parliament as a preferred venue for negotiating the future of public transport in the capital-city region, and this was confirmed during later discussions.

- *Towards an original form of regional governance in transport:*

With support from Ile-de-France region MPs and across political parties, a strong alternative to the Sarkozy Grand Paris strategy was developed in close relationship with the emergence of an original mode of governance in the capital-city region¹⁸⁶. The diffusion of the sustainable urban transport model that had emerged in Paris and inner-suburban municipalities was confirmed in a formal agreement that was signed in 2011, by which a €33 billion funding envelope was made available until 2025. In addition to the development of a new, circular automated metro line, (Grand Paris Express project), the State agreed to co-fund the 10-year regional transport investment programme proposed in the 2008 Regional Mobility Plan and successive state-region contracts (2007-2013, 2015-2020),¹⁸⁷ enabling network maintenance and upgrading as well as network extensions in Paris and the inner-suburbs.

This decision was confirmed after the return of a Socialist majority under President Hollande's administration (2012-2017). For the first time, sustainable policies goals and policies were institutionalized in regional planning documents (SDRIF 2030, PDUIF 2014, state-region contracts for the 2007-2013 and the 2014-2020 programming period). The 2014 PDUIF, for example, acknowledges the progress made in car use reduction in the City of Paris and the inner-suburbs and underlines the need to intensify the development of transport alternatives in the metropolitan area.

This political compromise was not, however, achieved to the benefit of a new leader, e.g., the region or the State, but due to the rallying of as a vast majority of local authorities and organizations – including the City of Paris - under a single banner “all against Sarkozy”. On the one hand, it contributes to strengthening the ability of STIF and subnational authorities to develop alternative policy solutions by drawing on the resources accumulated following three decades of capacity building in transport. But on the other hand, it also confirmed enduring mistrust on the part of state elites against the region's leadership over transport planning and implementation. To be sure, STIF's role as transport authority extends to SGP whereas the newly founded company's large financial, technical and political resources ensure its relative autonomy in daily activities. By contrast, STIF focuses on those projects that contribute to strengthening the local public transport offer.

All in all, the compromise resulting from the controversy over the Grand Paris Express initiative offers to address increased transport demand in the region while at the same time, developing rapid transit rail connections outside Paris and between existing lines. Some 75 per cent of the new stations will serve existing lines, and the largest share of planned infrastructures is located in the inner-suburbs.

¹⁸⁵ According to one of our interviewee, a transport expert: “The STIF is an ambiguous being, always at odds with the tradition of big, massive projects. By contrast, the SGP fits well within that tradition. It reproduces the old ambiguity related to the specific status of the capital region, a situation in which the state does not give up everything, where it wants to keep control of things. Things are very different in other regions, where the state has renounced everything that is connected with urban issues. But here, it is different”. (TbA, 16/04/2015)

¹⁸⁶ Successive amendments brought to the original project are synthesized in Table 11.

¹⁸⁷ This was achieved through the effective payment of State's contribution to the 5th state-region contract and granting additional funding as part of the 6th state-region contract (2015-2020). This was confirmed after President Hollande was elected in 2012.

Table 10. The Grand Paris Express initiative: a summary of main amendments.

	Arc Express Project (Ile-de-France Region) – Dec. 2007	Grand Paris Express (Blanc project) – Dec. 2008	Carrez report alternative – Oct. 2009	The SGP's integrated project - May 2011	The Nouveau Grand Paris – March 2014
<i>Main rationale</i>	Relieve existing network and maintenance costs in order to 1) treat emergency situations (RER A, Metro line 13), 2) maintenance costs, 3) increase inter-suburban connections.	Increase accessibility to/from strategic development poles in the region	Ensure sustainable funding by including operation and maintenance costs	Accommodate both the region and the State by strengthening the local transport offer and at the same time increasing accessibility to/from large economic centers.	Revise the project in view of a changed economic and financial context, but maintain priority on upgrading and expanding the existing network.
<i>Total duration of investment plan</i>	10 years (2010-2020) but 2 stages	Unknown (2025-2030?)	15 years (2010-2025) for the 1 st stage, 2 nd stage until 2039.	15 years (2010-2025), with a progressive opening between 2017 and 2025.	Extend total project duration until 2030, with progressive opening.
<i>Proposed infrastructure</i>	Two circular lines (north and south), and several interconnections.	A 140 km underground metro line, at a distance of some 10 km from Paris, and in the shape of a large eight.	A circular rail bypass (Arc Express), the extension of metro line 14 and RER E, the modernization of the RER network.	57 stations, a 160 km network of automatic metro and a total capacity of 2 million passengers / day.	Unchanged, but additional funding given to upgrading and capacity expansion.
<i>Estimated cost</i>	Between € 8 and 10 billion (mostly through public funding, i.e. state-region planning contracts)	€ 14 billion	€ 43,2 billion (including some € 24 billion for new infrastructure).	€ 20,6 billion (new infrastructure only)	€ 30 billion (new infrastructure only)

Concluding remarks

The current division of tasks between SGP and STIF reflects evolving state-region relationship, that is between high transport politics - developing and managing rapid transit networks under the leadership of state-owned companies and state elite networks – as opposed to low transport politics – maintaining and expanding capacity on existing networks under the leadership of STIF and subnational levels of government. The Region's authority over transport governance was further undermined through recent decentralization reforms, which further contributed to strengthening subregional levels of government's autonomy, including that of the City of Paris. The creation of the Greater Paris metropolitan authority, together with a number of specialized agencies across policy areas, is also considered a threat to the Region's leadership in a number of policy areas.

In this context, the choices made regarding the governance and funding of the Grand Paris Express initiatives reproduce the old distinction between state-led capacity investment projects in rapid transit systems and “everyday transport policies” which mainly consist of mitigating the negative impacts of the automobile and the failures of ageing networks.

4.4 Future challenges in transport policy developments

As of today, the three levels of government compete and clash in most policy areas even as the regional mode of transport governance has burgeoned. This was further exacerbated following the re-election of a Left-Green majority in Paris, with the Socialist Party Anne Hidalgo being elected as Mayor (2014), and Conservative Party candidate, Valérie Pécresse, as President of the Regional Council (2015). In a context of growing competition between levels of government during recent negotiations over territorial reforms in Paris and the capital-city region, a number of controversies over transport policy decisions have confirmed the permanence of high levels of conflict between levels of government about transport policies and infrastructure. In some cases, it led to major infrastructure crisis and major resistances, in others, it has been a source of policy innovation.

4.4.1 Addressing the rail infrastructure crisis

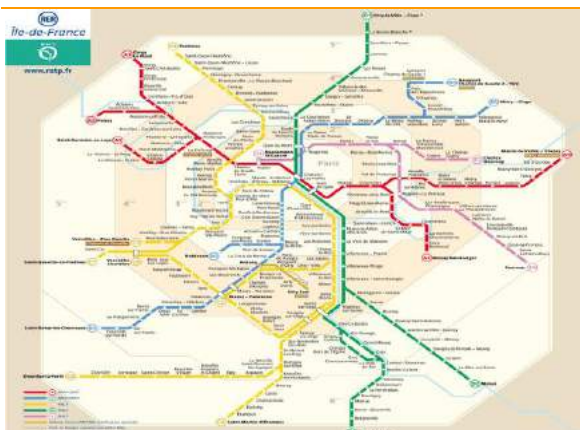
When asked to reflect about four decades of public transport governance in the capital-city region and whether or not it contributed to the reduction of car use, most interviewees often refer to the RER and the suburban regional train networks as both a success and a failure.

Over the recent period, these networks' lack of performance and difficulty to adjust to new demands and technologies is considered a major barrier for the development of Stage 3 policies region-wide. Repeated infrastructure crises highlighted the urgent need for massive investments in upgrading and modernizing these ageing networks. STIF and the Regional Council's increased investments and efforts did contribute to some improvements but were unanimously considered insufficient in view of the growing pressure it faced in a context of increasing transport demand in the region. Yet part of the solution also depends on increased coordination between SNCF and RATP, as well as between the region and the state in order to exert joint pressure. Insofar as it opened some room for manoeuvre to renegotiate implementation plans, the State's "divide and rule" strategy was considered an encouragement for lobbying strategies and a barrier against rule enforcement.

Building on the knowledge acquired during the preparation of the Carrez report and joint discussions about the 2010 Grand Paris Law, the Left-Green opposition successfully called for the opening of a parliamentary inquiry commission on the upgrading of the RER system. MP's exerted increased pressure on both companies to submit to STIF's requirements during negotiations over their respective 2012-2015 operating network contracts. Both companies were urged to find concrete ways to increase cooperation in the daily management of the RER network (Goldberg 2012), such as the opening of a joint traffic control centre on the RER A line for example. Since 2015, RATP initiated a comprehensive refurbishment programme on the RER A line together with SNCF and STIF, with seasonal closures of traffic on specific segments. Since then, a number of incidents related to the network's age highlighted massive investments needs on the RER B line. In the case of the regional train network, successive (and ongoing) inquiries related to the 2013 train crash at Brétigny-sur-Orge¹⁸⁸ repeatedly identified the network's insufficient maintenance as the main cause of the accident and highlighted the need to increase financial investment requirements, to revise the SNCF's network security policy as well as the overall governance of the railway sector at national level.

More generally, current debates over the state of the RER and the regional train networks provide a good example of the French State's difficulties to redefine its role and develop alternative forms of regulation and control in policy areas that are considered less of a priority than high profile projects¹⁸⁹. It also highlights the need for a number of network owners across Europe to develop alternative sources of funding in order to support upgrading costs as well as information and communication tools in order to better account for the disruptive impact of modernising works over public transport services.

Map 7c. The RER network as of end 2015



Source: RATP 2015

¹⁸⁸ A passenger train crash, with 7 people killed and over 300 people injured.

¹⁸⁹ See press articles and blogposts published about the collapse of train services at Montparnasse station between July 30 and August 1, 2017.

4.4.2 Funding regional transport and sustainable transport initiatives

A second source of controversy relates to public transport funding and the decision made in 2015 by the Left-Green regional majority to adopt a monthly flat fare rate of 70€ with unlimited access to public transport region-wide. This represented a significant reduction from the previous price that is, €116,50 per month for unlimited access to all 5 zones. Introduced during the last year of the Huchon administration and a few months before the regional elections, this demand-oriented policy measure was justified in the name of social justice. The difference in the revenues would be covered with *ad hoc* interventions of the State and following the election of a Conservative regional majority, a new agreement was reached with the Prime Minister to maintain the new tariff system with a state financial coverage. According to the current agreement, the economic resources are going to be collected through an augmentation of gasoline taxes, of the *versement transport* (which upper limit is established by national law) and with an increasing of the flat tariff. Nevertheless, the political debate is still on the wave, highlighting the disconnect from operating costs¹⁹⁰. Since December 2015, the Pecresse administration explores additional revenue sources in order to cover the costs of this policy measure, including a gradual increase of monthly ticket – 73 € in 2016, 75,20 € in 2017 – and additional increase of VT rates.

Beyond public transport, debates about the costs of sustainable transport initiatives also address the development of new transport services outside Paris. Until now, the development of regional sustainable transport policies has drawn from subregional- and private-led initiatives whereas regional-led initiatives have been scarce. These initiatives occurred partly at the expenses of the outer suburbs, where the quality and density of transport services are lower, and justified lower VT rates as well as the introduction of a single, region-wide tariff zone in 2015. Nevertheless, the profitability and replicability of initiatives and business models in a different socioeconomic and urban context than that of Paris has also been questioned such as in the case of Autolib, with municipalities outside Paris facing rising costs.

4.4.3 Continued efforts to overcome social resistances

Some issues have proven more difficult for both the city of Paris and the region to address, such as the development of night services or the regulation of vehicles on-demand. During the 2010 regional campaign and the 2014 municipal campaign, both Huchon and Hidalgo committed to substantially expand transport services at night – so far with limited success. In addition to Noctilien services, continued efforts from the city of Paris, organizations representing youth and the culture industry led to expanded evening and night services, on average until 0:30. Since 2014, the metro opens until 2 am during weekends (Fompeyrine, 2015). Under Mayor Hidalgo administration, the city of Paris drew on TFL's strategy in London in order to produce sufficient evidence in support of extending public transport services during night-time as a contribution to the city's attractiveness and economy. So far, it has failed to overcome resistances from RATP and SNCF, trade unions and users' associations (e.g., FNAUT) who argued that Noctilien and taxi services are sufficient enough to cope with transport demand at night. At the regional level and under the pressure from Vice-president Serne, STIF eventually obtained a commitment from RATP in 2014 that extended night time services would be ensured on the metro, the RER and the Noctilien networks on a number of special occasions (e.g., UEFA soccer games, New Year's Eve, etc.). A prominent regional politician also a member of the STIF board also admitted that night services were considered "less pressing issues in daily negotiations with RATP and SNCF over rush hours, punctuality, frequency"¹⁹¹. By contrast, additional efforts were made in order to increase safety, especially for women. But in a context in which the development of public transport services has been closely related to home-work travels and remains dependent on business tax and employers' contributions, there are little incentives to adjust to changing mobility patterns. This opened some opportunities for new mobility services to strengthen their positions within the regional transport system.

Following the recent development of app-based technologies¹⁹², ridesourcing services expanded rapidly and highlighted the scope for new mobility services during weekends and between 2 am and 5.30 am, at a time

¹⁹⁰ See similar debates in Vienna, following the Red-Green majority's decision to introduce the €1 per day season ticket. (D4.2 Vienna report).

¹⁹¹ Interview with regional elected representative from the Green Party, 06/12/2017.

¹⁹² These paragraphs draw on research input provided by Gabriela Neves da Lima, during her internship at Sciences Po, CEE.

when the metro shuts down (e.g., collective taxi services) (Fompeyrine, 2015). Their development put issues related to the regulation of taxi services back onto the political agenda. As stipulated in the Transport Code¹⁹³, the main difference between taxis and companies offering ridesourcing services lies in the former's license to park-and-wait on designated areas allocated on road space and their right to use road space otherwise reserved for bus services. Since 2011, Uber acts as a major player in the capital-city region: only 60 drivers were registered in 2011, and in 2016, there were over 5000 drivers registered in the capital-city region¹⁹⁴. Its main competitor, Lyft, underwent a similar growth. In total, it is estimated that some 7.200 transport companies offer ridesourcing services in France and in Paris alone, a number of start-ups and other actors (e.g., Heetch, ouiHop, LeCab, Allocab, Snapcar, Chauffeur Privé, Cinq-S and Marcel) were created¹⁹⁵.

Following strong and violent protest from taxi drivers, carsharing services (UberPop) were banned and until now, a number of litigation cases were opened in order to reduce the range of ridesourcing companies. Attempts to measure the phenomenon in view of a decrease of 4 per cent in Parisian car circulation remain limited¹⁹⁶. Since the phenomenon is recent, it is not encompassed in the last Enquête Globale Transport (EGT) of 2010. It may however, be included in the next one, which will be published in 2020, by using the numbers of daily trips of taxis in Paris, one can estimate the relatively small demand of private hired vehicles. Taxi rides represent around 80,000 of the 15 million automobile trips, which in turn represent less than one third of the daily trips in Paris (estimated at 40 million) (EGT, 2010). As observed in other cities worldwide, the development of such mobility services challenges attempts to reduce car use, especially at night and in those areas outside Paris lacking public transport services at night or where taxi and Noctilien services are underdeveloped.

4.4.4 Dismantling urban expressways in the city of Paris

Rising air pollution episodes provided an opportunity for Mayor Hidalgo to announce her wish to further reducing car use and motorized travel modes during the early days of the 2014 municipal campaign¹⁹⁷. On the one hand, it primarily consists of expanding and intensifying her predecessor's policies such as doubling the total length of bike lanes¹⁹⁸, expanding the 30 km-hour speed policy, further extending the circular tram line (see above, Map 9) and banning non-electric vehicles from a limited number of streets. The reduction of road space allocated to car traffic was extended to highly prestigious squares (e.g., Place de la République¹⁹⁹). But on the other hand, the City's approach is altogether more ambitious and more competitive, and now seeks to draw new sources of legitimacy from public consultation devices and international place-making as a way to challenge other levels of government.

Mayor Hidalgo used every opportunity of promoting Paris on the international scene as a Green, liveable and innovative city. Acting as host during the COP21 (December 2015), in her new role as chair of the C40 network (2016) or in leading the Paris bid for the 2024 Olympic and Paralympic games, she repeatedly used transport as a major tool for in order to strengthen the city's – and her – international profile while at the same time intensifying pressure upon the State and the Region in order to gain more autonomy during discussions about decentralization reforms. In this context, she increasingly challenged Prime Minister Valls' policy in close cooperation with the Parisian Greens and their new leader, Christophe Najdowski, her Deputy Mayor in charge of transport, traffic, roads and public space.

¹⁹³ Code des transports, article L3121-1

¹⁹⁴ The services being currently offered in the city are uberPool, uberX, uberBerline and UberVan.

¹⁹⁵ Heetch and ouiHop define themselves as local participatory modes of transportation and follow a non-profit logic. The former dedicates its services to the periphery of Paris, youngsters (in their twenties) and nightly hours. The latter offers short distance rides according to incidental trips. Other above-mentioned services follow a more institutionalized and business-like model, yet benefit from numerical evolutions for booking and payment actions without adopting the Uber price surging model.

¹⁹⁶ Interview IAU, June 2016

¹⁹⁷ See Mayor Hidalgo's manifesto during the municipal campaign: <https://issuu.com/oserparis/docs/oserparislelivrenumerique>

¹⁹⁸ Cycling plan 2015-2020 which relies upon €150 million in order to develop 200 km of bike lanes, and plan a network of Cycle Superhighways.

¹⁹⁹ 70% of road space was formally dedicated to automobile traffic, and since 2014, 60% is dedicated to pedestrians. Similar works are planned in 7 other squares.

The newly elected administration also benefited from the long-awaited transposal at domestic level of EU regulations on air pollution in order to increase pressure on car users. Taking into account the numerous failures encountered in the past when attempting to introduce a congestion charge in French cities, Mayor Hidalgo and her team chose to exert increased pressure on specific types of vehicles by drawing on EU urban access regulations. A few weeks ahead of the formal adoption of the national Law on Energy transition (2015) which includes some provisions about transport, she introduced a temporary traffic ban²⁰⁰ on all motorized vehicles (coaches, trucks and buses) produced before 2001 which became permanent and enforceable in September 2015, following the formal adoption of the law. A few months later (July 2016), the city of Paris was the first in France to become a “traffic restricted area”: all individual motorized vehicles produced before 1997 were partly banned from the city centre, and all vehicles were encouraged to follow the “Crit’Air” national regulation, which classifies motorized vehicles according to their level of pollution and became mandatory in January 2017²⁰¹.

Similarly to the strategy developed under the Delanoé administration in order to undermine opposition in the region, the city of Paris introduced a series of financial incentives in order to complete those provided at national level²⁰² for individuals and professionals from Paris and the entire region in order to promote the use of cleaner vehicles, modal shift (public transport, bike-sharing) and collective investments (e.g., bicycle parking, electric vehicles charging stations). Last but not least, the city of Paris also introduced an ultra-low emission zone initiative in a selected number of areas and expanded its 30 km-hour restriction policy to the entire city.

Institutional conflicts culminated following the city of Paris’ announcement to permanently ban cars from the Seine expressway as part of the Plan on air quality. It was announced during the COP21, in a context of intense political negotiations over the creation of the Greater Paris Metropolitan authority and a few weeks away from the Left-Green coalition’s political defeat in the 2015 regional elections. Mayor Hidalgo’s strategy to regain access to the Seine river includes a number of measures representative of a Stage 3 city: dismantling of an urban expressway, pedestrianizing this 3.3 kilometres-long area, developing recreational and Green spaces, and supporting the development of an electric tram.

This decision met with critics from all fronts, including those opposing this measure’s impact on air pollution levels²⁰³. In the absence of regional-wide and comprehensive expertise about the negative impact of car use on health and the environment, the ban on the Seine expressway sparked unprecedented debates about impact assessment, the role of data and the selection of indicators. International transport experts, such as Phil Goodwin²⁰⁴, were regularly invited in the media in order to discuss whether or not “traffic evaporation” was a measurable phenomenon and the measure’s expected impact on traffic congestion in the city and at regional level. The newly elected regional Conservative majority took the lead of the opposition to the project, including motorists, shop-owners and daily commuters from the entire region. As the RER network faced a growing number of break-downs and failures (see below), the decision was criticized as lacking consideration for the overall performance of the regional public transport system and increased car dependency for a number of passengers commuting from the entire region. The upgrading of the RER network and the opening of new rapid-transit lines as part of the Grand Paris Express initiatives were not expected to happen before 2019 and a number of experts highlighted worsening traffic conditions in the region. Similarly to the criticism faced by Baupin a decade earlier, Mayor Hidalgo and Deputy Mayor Christoph Nadjowski were accused of being ideologically-driven and unilaterally prioritising the city’s interests – and their own political career.

²⁰⁰ Valid 7/7 between 8am and 8pm.

²⁰¹ Also introduced as part of the 2015 Law on Energy Transition, “Zone de circulation restreinte”. In Paris, state representatives issued a list of limitations (e.g., disabled people, moving trucks, etc.). The Crit’Air classifying tool was also introduced at national level in order to distinguish green (100% electric), purple (gasoline, post 2011), yellow (gasoline 2006-2010, diesel post 2011) and orange (gasoline 1997-2005, diesel 2006-2010 – estimated at 43% of the total number of private vehicles in circulation).

²⁰² National policy measures include: €7 billion for public transport and individual subsidies for replacing diesel vehicles with hybrid or electric vehicles.

²⁰³ On a number of occasions, it was argued that other pollution sources exerted a far bigger impact on air quality than motorized vehicles.

²⁰⁴ Emeritus Professor at UCL

In spite of the negative recommendation issued by the public inquiry commission, Mayor Hidalgo pushed the project further²⁰⁵ with the state representative (*Préfet de police*) imposing a 6-month trial until March 2017 in order to better understand the measure's impact on the distribution of car traffic, noise pollution and air pollution. This also justified the setting of a temporary monitoring committee about car traffic in Paris under the Prefet's authority²⁰⁶ in order to bring together existing resources in data collection and analysis from across levels of government and develop new ones. In reaction to the opening of this unprecedented discussion arena, the region installed its own committee and sought to develop its own policy solutions.

Although the closing of the urban expressway is now confirmed, ongoing discussions regarding the city of Paris' proposed schemes to actively reduce car traffic in the city and develop additional urban sustainable mobility policies²⁰⁷ confirm the salience of transport issues in inter-institutional and political conflicts in the capital-city region. Reflecting on the strategy adopted in the core metropolitan area over the past three decades and in view of the State's proposed Greater Paris Express, the city of Paris now advocates systematising and intensifying a more radical approach to the use of road space by developing sustainable transport alternatives.

By contrast to the choice made in Paris, the sustainable urban transport approach shows some signs of receding in at the regional level since the election of the Pécresse administration in 2015, with an increase in public transport tariffs and new road investments. This confirms the need to consider Stage 3 policies as a dynamic process and the return to Stage 1 policies as a possible outcome.

²⁰⁵ Decision from the Paris Council, 26 September 2016

²⁰⁶ Drawing on regional expertise (including from IAU), Pécresse established a regional monitoring committee whose main task was to produce monthly report and develop alternative solutions.

²⁰⁷ This concerns more specifically the reorganization of car traffic in the Rue de Rivoli, another major east-west axis, through the development of cycling expressways and right-of-way bus lanes.

5 Conclusion: Conflict as a driver towards sustainable urban mobility?

The analysis done in CREATE highlights the critical role played by political and institutional conflicts in a context of exacerbated fragmentation and the extent to which a large variety of actors, namely different levels of government, technical agencies, political parties, elite groups and professional networks, compete in order to shape transport governance and the distribution of transport policy resources. This was achieved through incessant institutional reforms, major conflicts and competition strategies, and the development of highly visible policy initiatives and projects.

First, this report demonstrates that transport governance and policy processes in the Ile-de-France region underwent significant changes over the last four decades, thus suggesting it might have contributed to the significant reduction of car use that was observed in WP3. It also shows the relevance of the CREATE three stages approach for understanding the shift away from car-oriented policies in the Paris Ile-de-France region.

Second, the report also provides some explanation for policy change by looking at different drivers for change and analysing how and why they explain transport policy developments over time. It argues that the main driver for change in the Ile-de-France region lies in political and institutional competition between levels of government. By contrast to other cities under study in WP4, where consensus-seeking strategies account for policy change over time, competition emerges as the main driver for change in the case of the Paris Ile-de-France Region: competition between levels of government, between political parties, between transport companies and between social and economic groups. Together, this accounts for the continuous coexistence of two highly differentiated models of urban and spatial planning in the capital-city region: on the one hand a liveable, sustainable and compact model in which the automobile is included in a larger regional transport system, and on the other hand, a regional growth model in which the automobile plays a critical role in order to ensure daily accessibility for commuters to the core metropolitan area.

As a result, transport policy developments in Paris and the Ile-de-France region reveal an interesting paradox: over the past three decades, high level of institutional and political conflicts have accelerated – instead of prevented – the shift towards urban sustainable mobility. Demographic and urbanization dynamics were instrumental in triggering various forms of collective – or unilateral – action across the region. In terms of transport policy developments, the evolution of transport policy objectives, resource and tools sheds light on both the “What’s” (substance) and the “How’s” (governance) of transport policy change. On the one hand, it shows how a sustainable approach to transport planning and policy-making progressively emerged at the margins of the transport policy sector, through the diffusion of alternative representations and policy solutions, and by drawing on small-scale innovations. This incremental process is closely related to decentralization reforms and the struggle of local authorities in the capital-city region for increased institutional and organizational autonomy. It also confirms the critical role played by new social and political forces over time, such as the Greens, in strategically tapping into urban renewal and environmental policy resources and tools such as street design initiatives. But on the other hand, the evolution of transport policy objectives, resource and tools also highlight how state elites and networks are able to successively resist bottom-up pressures and maintain, in a number of cases, a state-led approach to transport planning in the capital-city region that prioritizes its role as the national powerhouse. These achievements took the form of large-scale, rapid-transit infrastructure networks such as the RER system, the motorway network and today, the Grand Paris express network – projects in which state-led organizations and elites played a critical role. Insofar as it favours a project-led approach to transport policy developments, this approach also led to “Great planning disasters” (Hall 1982) and accounts for today’s infrastructure crisis. Indeed, no provisions were made for covering the costs related to network maintenance and modernization, nor has there been any incentive for transport companies and the industry to develop such skills.

Third, this case study has some significance for understanding the governance of capital-cities in Europe beyond the CREATE project. In this respect, the study of changes underway in transport helps understanding the struggle for increased autonomy and political power at subnational level against State-led governance in the French capital-city region. This driver for policy change is well known in the case of medium-size cities across Europe (Le Galès 2003), whereas capital-cities were often characterized as paradigmatic cases of ungovernable cities (Lefèvre 2009) or as latecomers (Estèbe, Le Galès, 2003)²⁰⁸. By contrast, the case of the Paris Ile-de-

²⁰⁸ We benefited on this occasion from the work done as part of the “What is governed” research programme at Sciences Po, in which the governance of London, Paris, Sao Paulo and Mexico are systematically analyzed.

France region shows how political and institutional competition combined with the development of governance and policy capacities over time accounts for transport policy developments in the Ile-de-France region. Furthermore, analysing transport policy developments over time confirms the continued role of the State even though the nature of its power has considerably evolved in the context of successive decentralization reforms. This is particularly the case in those areas, such as rapid transit networks, in which policy resources were, and to a large extent still are, concentrated by state-led organizations. Yet this longitudinal qualitative policy analysis also confirms that state leadership was always contested and allowed some room for manoeuvre for challengers such as local authorities, new political and social forces, or economic actors, to develop alternative approaches and policy solutions which, together, eventually led to the development of a robust urban sustainable transport model.

Last but not least, the report confirms that the shift away from the automobile city is far from being homogeneous from a social and spatial point of view. We expected to find some differences in transport governance and policies between the core city and the region as a whole, and we also expected policy change to follow a different rhythm and scope in the Ile-de-France region as opposed to those observed in the city of Paris²⁰⁹. In this regard as well, the results from WP4 are consistent with those presented in D3.2 and shows some profound differences between the core metropolitan area, which roughly corresponds to the limits of the Greater Paris Metropolitan area, and the outer suburbs, and within the metropolitan area, between municipalities. A shift away from the automobile city undoubtedly took place in the Paris Ile-de-France region, and the development of Stage 3 policies across the region is precisely documented together with the pivotal role of Green-left political actors on the one hand, and continued capacity-building at the municipal level on the other hand. There again, the struggle for increased autonomy and political power at subnational level against State-led governance provides some explanation for remaining spatial disparities in terms of transport policy developments and behaviours.

²⁰⁹ See D4.1 report.

6 References

6.1 CREATE reports

Halpern, C., Persico, S., 2016, « Transport policy evolution across 5 European capital cities: qualitative analysis », 1st WP4 technical report, CREATE project, 136p.

Nguyen-Luong, D., Courel J., 2016, “D3.2 Technical Report for Stage 3 Cities: Paris Agglomeration.” WP3 quantitative analysis. CREATE project, 52p.

Raes, C., 2016, *Paris Ile-de-France City report, Past and present changes in urban transport governance and policies*, February 2016, 17p.

6.2 Interviews

Paris Ile-de-France Workshop, January 29th, 2016

Organizers

- Charlotte Halpern (Sciences Po, CEE)
- Alessandro Maggioni (Sciences Po, CEE)
- Dany Nguyen-Luong (IAU Ile-de-France, Mobility and Transport Department)
- Caroline Raes (IAU Ile-de-France, Mobility and Transport Department)

Participants

- Transport engineer former SNCF, Transilien
- Expert transport planning, IAU Ile-de-France
- Transport engineer, former Ile-de-France Directorate of Roads
- Expert transport planning 2, IAU Ile-de-France
- Expert transport statistics, IAU Ile-de-France
- Expert mobility planning, IAU Ile-de-France

CREATE Study visits

- Peer-learning activities: visit from the city of Skopje to IAU Ile-de-France, March 16-17, 2016
- Study visit 'From the city to the metropolis', Sciences Po, April 18-19, 2018

Face-to-face interviews

- Sustainable mobility Unit, Department of Roads and Traffic, city of Paris (January 2015)
- Regional elected representative (Green party) (December 2016)

Interviews done during Spring 2015 as part of the TUT-POL project:

- City of Paris, Mobility Agency (May 2015; June 2015)
- Conseil général du Val d'Oise, Department of transport (May 2015)
- Conseil général des Hauts-de-Seine, Department of transport (May 2015)
- IAU, Engineer, transport and mobility department (April 2015)
- IAU, Transport economist, transport and mobility department (April 2015)
- IAU, Planning Department (April 2015)
- Ile-de-France Region, Department of planning, regional planning and metropolitan strategies (May 2015)
- Ile-de-France Region, Department of Transport, Unit of regional planning (June 2015)
- Ile-de-France Regional and Interdepartmental State Administration for infrastructure and planning (DRIEA), Department of planning (May 2015)

- Ile-de-France Regional and Interdepartmental State Administration for infrastructure and planning (DRIEA), Grand Paris Unit (May 2015)
- Jean-Pierre Orfeuil, Transport expert (April 2015)
- Local elected representative, municipality in the Seine-et-Marne Department (May 2015)
- MP Seine-Saint-Denis Department, Socialist Party (May 2015)
- MP Val-de-Marne Department, Conservative Party (May 2015)
- RATP, Department of innovation (May 2015)
- RATP, Paris office (June 2015)
- STIF, Project manager in charge of relations with transport companies (May 2015)
- STIF, Project manager, Department for economic affairs and tariff development (May 2015)

6.3 Grey literature

6.3.1 Archives

Archives de Paris

ADRP 344 W 540, 1962-1968, Sept ans de vie de la région parisienne et de son District, 21 janvier 1969, 433 p.

SERIE 1514 W, APUR, 1967- dossiers : 139-145, Axe Nord-Sud, Périphérique, Voie express rive gauche

Bibliothèque administrative de la Ville de Paris, Manuscrits.

MS 1477 : Voie Express Rive Gauche.

MS 1478 : RATP, rapports du préfet sur l'expérience des couloirs réservés.

MS 1483 : Mise en œuvre du stationnement payant

6.3.2 Press Review (Factiva Database and Sciences Po Library's press clippings)

Les Echos - Le Parisien - Le Figaro - Le Monde

6.3.3 Reports, policy and administrative documents, plans.

NB: A large share of these documents is available at the IAU library.

APUR, (2006), Etude de localization des stations de vélos en libre service, Rapport, 74p.

APUR, (2015), Etude d'opportunité d'un Vélib' métropolitain, Rapport, 28p. Available at : <http://www.apur.org>

Beaufils, S., Sagot, M. (2007) Système tarifaire des transports collectifs : éléments de réflexions. Analyse de composition sociodémographique des zones de carte orange. IAURIF, Département Transports et Infrastructures, Avril

Bilan LOTI du RER E (EOLE), Réseau Ferre de France, Mars 2006.

Carrez G. (2009), Financement du projet de transport, Rapport Assemblée nationale.

Commissariat général du Plan (CGP), « I Ve Plan de développement économique et social (1962-1965) », Journal officiel, 1962

Commissariat général du Plan (CGP), « Ve Plan de développement économique et social (1966-1970) », Journal officiel, 1966

Commissariat général du Plan (CGP), « VIe Plan de développement économique et social (1971-1975) », Journal officiel, 1971

Commissariat général du Plan (2003) « Transports urbain : quelles politiques pour demain ? », Rapport, July

Conférence territoriale régionale, Ile-de-France (2010) Le Journal du SDRIF !, n°1, 26 novembre.

Conseil régional, Ile-de-France (2000) Contrat de Plan Etat – Région 2000 – 2006.

Conseil régional, Ile-de-France (2007) Contrat de Plan Etat – Région 2007 – 2013.

Conseil régional, Ile-de-France (2014) « Présentation du projet de Plan de Déplacements Urbains d'Ile-de-France (PDUIF) pour approbation ».

Cordobes, S., Durance, P. (2004) « Les Entretiens de la Mémoire de la Prospective : Edith Heurgon, ancienne responsable de la mission Prospective de la RATP, Septembre.

Cour des Comptes (2010), Les transports ferroviaires régionaux en Ile-de-France, Rapport public thématique.

CESR - Ile-de-France (2005) «Les transports et la révision du SDRIF de 1994 », rapport administratif, 17 février.

Direction de la voirie et des déplacements de la Mairie de Paris (2000). « Les quartiers tranquilles à Paris – 1996-1999 », rapport, janvier.

Direction de la voirie et des déplacements de la Mairie de Paris (2000). « Quartiers tranquilles – Etat des opérations réalisées au 31 décembre 1999 », rapport, mai.

Direction de la Voirie et des Déplacements (2003) Schéma Directeur du Réseau Cyclable Parisien 2002 – 2010, Mairie de Paris, January

Delouvrier, P. (1964) « Les problèmes du District de la région de Paris », conférence prononcée à l'occasion des Journées techniques de la route, « Région de Paris », annexe publiée, Revue Générale des Routes et des Aéroports, n° 390, Juillet-Août.

DREIF, APUR, IURIF (1990). Le Livre Blanc de l'Ile de France, Janvier.

DREIF, Division de l'urbanisme et du schéma directeur, Population emploi : évolutions longues éléments de suivi du SDRIF, mai 2002

Goldberg D., (2012), Rapport de la commission d'enquête relative aux modalités, au financement et à l'impact sur l'environnement du projet de rénovation du réseau express régional d'Ile-de-France,

Groupe « Mobilité et transport » pour l'élaboration du SDRIF 2008, Etat des lieux

IURIF (1999) « Fort ralentissement de la croissance démographique en Ile-de-France », Note Rapide, n° 30.

IURIF (2003) « Point quantitatif SDRIF. Population, emploi et urbanisation », Note Rapide, n° 332.

IURIF (2010) « La saga des rocade des métros au cœur de la région capitale » Note Rapide, 502.

IURIF (2011), « Peak car, la baisse de la mobilité automobile est-elle durable ? » Note rapide, n°620.

IURIF (2014), « Tramway, une école française », Paris, Institut d'Aménagement et d'Urbanisme de la Région Ile-de-France. Available at : https://www.iau-idf.fr/fileadmin/NewEtudes/Etude_1062/tramwayWeb2014.pdf

IURIF (2016) « Schéma Directeur IDF 2030 : un projet de société à partager », Note Rapide, n° 712.

Insee (2009), La croissance périurbaine depuis 45 ans. Extension et densification, Insee Première, n°1240, Juin.

Insee (2011) « Zonage en aire urbaine 2010: le centre se densifie, le périurbain s'étend. » Ile-de-France à la page, Octobre, n° 374.

Paumier, J.M., Rabardel, D. (2007) Perspectives d'évolution du rôle et des compétences du Syndicat des Transports d'Ile-de-France (STIF), CESER, Commission Transport.

La lettre du Préfet de Région L'Ile de France au Futur, n° 89, Juillet-Août 2000

Lemoine, C., Predali F. (2007) Système tarifaire des transports collectifs : éléments de réflexions. IAURIF, Department Transports et Infrastructures, Avril.

Merlin, P. (1982) « Les transports à Paris et en Ile-de-France » La documentation Française. Notes et études documentaires, n° 4659 – 4660, Mars.

Merlin, P. (1985) « Les politiques de transport urbain » La documentation Française. Notes et études documentaires, n° 4797.

Morange, P.M., (2012) Rapport au nom de la commission d'enquête relative aux modalités, au financement et à l'impact sur l'environnement du projet de rénovation du réseau express régional d'Ile de France, Assemblée Nationale, Rapport enregistré à la Présidence de l'Assemblée Nationale 7 mars.

Omega Center "Project Profile: METEOR", Bartlett School of Planning, University College of London: http://www.omegacentre.bartlett.ucl.ac.uk/wp-content/uploads/2014/12/France_METEOR_PROFILE.pdf

OMNIL (2010) Enquête Global Transport. Résultats détaillés.

OMNIL (2011) Le transport en commun en chiffre, Rapport.

OMNIL (2012) Enquête globale transport, La mobilité en Ile-de-France, n°1, Septembre.

Plan Aménagement Directeur Organisation Générale de la Région Parisienne (PADOG), 1963

Préfecture de la région Ile-de-France, DREIF (1988) Les transports de voyageurs en Ile-de-France.

RATP (2007 – 2014), Rapports d'activités: http://www.ratp.fr/fr/ratp/c_5002/le-groupe-ratp/

RATP (207 – 2014), Rapports financiers: http://www.ratp.fr/fr/ratp/c_5002/le-groupe-ratp/

Région Ile-de-France, (2000) Plan de Déplacements Urbains de la Région Ile-de-France, Décembre.

Région Ile-de-France, (2014) Plan de Déplacements Urbains de la Région Ile-de-France, Juin.

Schéma Directeur Aménagement Urbaine Région Parisienne (SDAURP), 1965

Schéma Directeur Aménagement Urbaine Région Ile-de-France (SDAURIF), 1976

Schéma Directeur Région Ile-de-France (SDRIF), 1994

Schéma Directeur Région Ile-de-France (SDRIF) 2014

STIF (2002 to 2014) Rapport d'activités: <http://www.stif.org/>

STIF (2004) « Pourquoi des contrats avec la RATP et la SNCF ? » La lettre (hors-série), Janvier

STIF (2012), Communiqué de Presse. Budget 2013

STIF (2015) « Le nouveau Grand Paris », Transports en Ile de France, July

Ville de Paris (2001 – 2014) Bilan de déplacements, Observatoire des déplacements Ville de Paris, Paris: <http://www.paris.fr/services-et-infos-pratiques/deplacements-et-stationnement/deplacements>

Ville de Paris (2005 – 2015), Rapport Financier d'exercices, Direction de l'information et de la communication, Direction des Finances, Mairie de Paris.

6.4 Secondary sources

Alvarez, A., G. (2006). « Mobilien et le PDU d'Ile-de-France. L'innovation dans les politiques de déplacements au risque de la concertation ». Doctoral Thesis in Sociology, Ecole des Ponts Paris Tech

Baccaïni, B., Sémécurbe, F. (2009) « La croissance périurbaine depuis 45 ans. Extension et densification », Insee première, n°1240, juin

Banister, D. (2000). *European transport policy and sustainable mobility*. London, Taylor & Francis.

Béhar, D. (2013) « Les paradoxes du rôle de l'État dans la gouvernance du Grand Paris », Métropolitiques, 28 janvier 2013: <http://www.metropolitiques.eu/Les-paradoxes-du-role-del-Etat.html>

Biland, E., Gally, N., (2018), « Civil servants and policy analysis in central government », in Halpern C., Hassenteufel, P. and Zittoun, P., *Policy analysis in France*. Bristol, Policy press.

Boullier, D., Crepel, M., (2014), « Velib and data, a new way of inhabiting the city », *Urbe Brazilian Journal of Urban Management*, 6(1), p.47-69

Boutaric, F. (1997). Émergence d'un enjeu politique à Paris: la pollution atmosphérique due à la circulation automobile. *Pôle Sud*, Vol 6, n°1, pp26-46.

Boutaric, F., Lascoumes, P., (2008), « L'épidémiologie environnementale, entre science et politique. Les enjeux de la pollution atmosphérique en France », *Sciences sociales et santé*, 26(4), p.5-38.

Bratzel, S. (1999). "Conditions of success in sustainable urban transport policy. Policy change in 'relatively successful' European cities." *Transport reviews*, Vol 19, n° 2, 177-190.

Callen, D. (2011). La "fabrique péri-urbaine", système d'acteurs et production des ensembles pavillonnaires dans la Grande Couronne francilienne (Doctoral dissertation, Université Panthéon-Sorbonne-Paris I).

Cattan, N., Pumain, D., Saint-Julien, T. (1999), *Le système des villes européennes*, Paris, Anthropos, 2^{ème} ed.

Cherky, E., Mehl, D. (1977) « Crise de transports, politique d'Etat et mouvements d'usagers : enquête sur la Région Parisienne 1968 – 1977 », Centre d'études des mouvements sociaux, Paris.

Cottour, C., Lelarge, P., Milan, O., (2008) Une brève histoire de l'aménagement de Paris et sa région, DREIF, Septembre.

Davezies, L. (2004), *Évolution des fonctions des villes nouvelles depuis 20 ans : accueillir, produire, servir-desservir*, L'Oeil, Rapport financé par le Puca dans le cadre du Programme interministériel "Histoire et évaluation des villes nouvelles", 80p. Available at : www.cdu.urbanisme.developpement-durable.gouv.fr/IMG/pdf/davezies.pdf

Davis, D., Altshuler A., ed. (2018, forthcoming). *Transformative urban transport*. Oxford, Oxford University Press.

Delouvrier, P. (2003). *L'aménagement de la région parisienne, 1961-1969 : le témoignage de Paul Delouvrier : accompagné par un entretien avec Michel Debré*. Presses Ponts et Chaussées.

Deroubaix, J.F., Leheis, S., (2011), « Les politiques de déplacements à Paris et à Londres », dans Bezes, P., Siné, A., *Gouverner (par) les finances publiques*, Paris, Presses de Sciences Po, p. 323 - 353

Desjardins X., Drevelle M., (2014), « Trends in the social disparities in access to jobs by train in the Paris region since 1975 », *Transport Planning Review*, 85(2), p.155-170

Desjardins, Maulat, J., Sykes, O., (2014), « Introduction. Linking rail and urban development: reflections on French and British experiences », *Transport Planning Review*, 85(2), p.143-154.

Estèbe, P. Le Galès, P. (2003). « La métropole parisienne : à la recherche du pilote ? », *Revue française d'administration publique*, n° 107, 2003, pp. 345-356.

Flonneau, M. (2003). « L'action du district de la région parisienne et les « Dix Glorieuses de l'urbanisme automobile », 1963-1973 ». *Vingtième siècle. Revue d'histoire*, (3), 93-104.

Flonneau, M. (2005), *Paris et l'automobile. Un siècle de passions*, Paris, Hachette Littératures.

Flonneau M., Guigueno V. (eds), (2009) *De l'histoire des transports à l'histoire de la mobilité ?* Rennes, PUR 2009

Foing D. (2011), *Comptes et légendes de Paris: Bilan de la gestion Delanoë*. Paris: Denoël.

Fouchier, V. (2011) « La politique des Ville Nouvelles (1965 – 2000) », dans *Programme Interministériel d'Histoire et d'Evaluation des Villes Nouvelle Françaises 2001 – 2005*. Available at: <http://www.cdu.urbanisme.developpement-durable.gouv.fr/la-politique-des-villes-nouvelles-1965-2000-r8213.html>

François, A., Sauger, N., (2006), « Groupes d'intérêt et financement de la vie politique en France », *Revue française de science politique*, 56(2), 227-254.

Gaillard, M. (1991). *Du Madeleine-Bastille à Météor : histoire des transports parisiens*. Paris, éd. Martelle.

Gérondeau, C. (1977) *Les Transports urbains*, Paris, PUF, Coll. « Que je-sais ? », n°1344, 2^e édition

Gilli F., Offner J.M., (2009), *Paris, métropole hors les murs*, Paris, Presses de Sciences Po.

Gilli F. (2014) *La métropole du Grand Paris*, Paris, Presses de Sciences Po.

Glachant, M., Bureau, B. (2010) « Évaluation de l'impact des politiques. Quartiers verts et Quartiers tranquilles sur les prix de l'immobilier à Paris » *Economie & prévision*, (1), 27-44.

Haegel, F. (1994) *Un maire à Paris. Mise en scène d'un nouveau rôle politique*, Presses de la Fondation Nationale, Paris

Hai-Vu, P., Thierry, K., André, T. (2013) « Les conflits d'infrastructures en Ile de France. Des révélateurs des imperfections de la décision publique dans les espaces ruraux et périurbains », *Revue d'Économie Régionale & Urbaine* Vol 1, pp. 203-229.

Hall, P., 2013, *Good Cities, Better Lives: How Europe Discovered the Lost Art of Urbanism*, London: Routledge.

Halpern, C., Le Galès, P. (2015) "Political leadership and transformative urban transport. The case of Paris Ile-de-France", *Transforming Urban Transport – The role of Political leadership*, Harvard University Graduate School of Design. Research Paper, unpublished.

Halpern, C., Le Galès, P. (2016), « From city streets to metropolitan-scale infrastructures: transport policy change in Paris and the Ile-de-France Region », *The role of Political leadership*, Harvard University Graduate School of Design. Research Paper, online publication.

Hayward, J., Watson, M., (eds.), (1975), *Planning, politics and public policy : The British, French and Italian experience*. London : Cambridge University Press.

Hayward, Jack (ed.), (1995), *Industrial enterprise and European intergration : From National to International Champions in Western Europe*. Oxford : Oxford University Press.

Hauck Walsh, A. (1968), *Urban Government for the Paris Region*. New York: Praeger.

Heurgon, É. (1998) « La RATP partenaire de la politique de la ville et du développement territorial. » *Flux* n°31-32, 1998. pp.99-104.

Hubert J-P, Margail, F., Offner, JM., Zembri, P. (1995) *Les enjeux organisationnels et territoriaux des interconnexions de réseaux de transports collectifs*, rapport GDR 903 « Réseaux », Noisy-le-Grand, mai, p. 26-46.

Huré, M. (2010) « Une privatisation des savoirs urbains ? Les grands groupes privés dans la production d'études des projets de vélos en libre-service à Lyon et Bruxelles », *Géocarrefour*, vol. 85, n° 4, p. 265-273.

Huré, M. (2012a) « De Vélib' à Autolib'. Les grands groupes privés, nouveaux acteurs des politiques de mobilité urbaine », *Métropolitiques*, 6 janvier URL : <http://www.metropolitiques.eu/De-Velib-a-Autolib-Les-grands.html>

Huré M., (2012b), « Une action publique hybride ? Retour sur l'institutionnalisation d'un partenariat public-privé, JCDecaux à Lyon (1965–2005) », *Sociologie du travail*, 54, 2, 233-253.

Houk, M. (2004) L'institution de la proximité. Les arrondissements de Paris, Marseille et Lyon depuis 1983, in : B. Jouve & P. Booth (Eds) *Démocraties métropolitaines. Transformations de l'Etat et politiques urbaines au Canada, en France et en Grande-Bretagne*, pp.263–291 (Le Delta I : Presses de l'Université du Québec).

Imbert, C., Brune, A., Rozenholc, C. (2011), « Les villes nouvelles franciliennes », *Espace populations sociétés*, 3, 591-602.

Kuhlmann S. (2007) "Trajectories and driving factors of local government reforms in Paris: A 'deviant case' of institutional development?", *Local Government Studies*, 33:1, 5-24.

Larroque, D., Margairaz, M., Zembri, P. (2002). *Paris et ses transports : XIXe-XXe siècles, deux siècles de décisions pour la ville et sa région*. Paris, Ed. Recherches.

Lascombes, P. (dir.) (2009), *Favoritisme et corruption à la française*, Paris, Presses de Sciences Po.

Lassave P., Offner, J-M. "Urban transport: changes in expertise in France in the 1970s and 1980s." *Transport Reviews*, 1989, Vol 9, n°2, pp. 119-134.

Lefebure, P., (2007), « La CPDP sur l'extension du tramway à Paris (2006) comme occasion d'interroger les ambiguïtés du débat public », in Cécile Blatrix et al., *Le débat public: une expérience française de démocratie participative*, Paris, La Découverte « Recherches », p. 167-177.

Lefèvre, C. (2009) *Le système de gouvernance de l'Île de France : entre décentralisation et globalisation*, Rapport effectué pour l'Institut CDC pour la recherche et la Direction du développement territorial de la Caisse des Dépôts et Consignations, Paris.

Le Galès, P., "The Ongoing March of Decentralisation within the Post-Jacobin State", in Pepper D. Culpepper, Peter A. Hall and Bruno Palier (eds), *Changing France: The Politics that Markets Make*, Basingstoke, Palgrave Macmillan, 2006, pp. 198-215.

Le Lidec, P., 2012 "Decentralisation and Territorial Reforms in France: How Constitutional Constraints Impact Strategies for Reform", in Arthur Benz and Felix Knüpling (eds.), *Changing Federal Constitutions. Lessons from International Comparison*, Opladen, Berlin, Toronto, Verlag Barbara Budrich, 2012, pp. 249-267.

Marchand, B. (1993). *Paris, histoire d'une ville (XIXe-XXe siècle)*. Seuil.

Margairaz, M. (1989). *Histoire de la RATP: la singulière aventure des transports parisiens*. Editions Albin Michel.

Maksim H., Vincent S., Gallez C., Kaufmann V. (dir.), (2010), *L'action publique face à la mobilité*, Paris, L'Harmattan.

May, N., Ribeill, G. (1976) « Rapports sociaux dans les transports urbains et mouvements revendicatif transports » *Prospectives et aménagement*.

- Merlin, P. (2005). L'Ile-de-France : hier, aujourd'hui, demain. *Population*, (1), 209-211.
- Molotch, H. (2011). The City as a Growth Machine: Towards a Political Economy of Place. *City Reader*, p 251.
- O'Leary, B. (1987) "British farce, French drama and tales of two cities: reorganisations of Paris and London governments 1957–86", *Public Administration*, 65, pp.369–389.
- Ollivier-Trigalo, M. (2007) « Entretien avec François Prochasson, chef de projet Plan de Déplacements de Paris, Ville de Paris », *Flux* 3 (n° 69), p. 86-93.
- Offner, J-M (1993) « Les 'effets structurants' du transport : mythe politique, mystification scientifique ». *Espace géographique*, Vol 22, n°3, pp. 233-242
- Orfeuil J.P., Wiel M., (2012), Grand Paris. Sortir des illusions, approfondir les ambitions, Paris, Scrineo.
- Pichon M., (2012), L'écologie politique et la ville. Effets et influence des écologistes sur l'action publique municipale, Mémoire de master, sociologie politique comparée et recherche urbaine, Paris, Institut d'études politiques.
- Prat P., (2012), L'institutionnalisation de l'action de l'État en région parisienne : du plan Prost à la police d'agglomération, Thèse de doctorat en Science politique, Paris, Institut d'études politiques.
- Pham, H. V., Kirat, T. (2008). Les conflits d'usage des espaces périurbains et le contentieux administratif. Le cas de la région Ile-de-France. *Revue d'Économie Régionale & Urbaine*, (5), 671-700.
- Rietveld, P., Stough, R. R. (Ed) (2005). *Barriers to Sustainable Transport: institutions, regulation and sustainability*. Routledge
- Robert, J. (1994) L'Ile-de-France, Paris, Presse Universitaires de France.
- Röber, M. & Schröter, E. (2007) Governing the capital – comparing institutional reform in Berlin, London and Paris, in: J. Gross & R. Hambleton (Eds) *Governing Cities in a Global Era. Urban Innovation, Competition and Democratic Reform*.
- Sabatier, P. (1988). 'An advocacy coalition framework of policy change and the role of policy-oriented learning therein.' *Policy Sciences* 21: 129–168.
- Sabatier, P. (1993). 'Policy change over a decade or more,' in Paul Sabatier and Hank Jenkins-Smith, eds. *Policy Change and Learning: An Advocacy Coalition Approach*. Boulder: Westview Press, pp. 13–39.
- Sfz L., (1981), *Critique de la décision*, Paris, PUF.
- Spencehauer, V., Hamelin, F. (2008), "L'action publique de sécurité routière en France. Entre rêve et réalisme", revue Réseaux, n°147, p. 49-86.
- Subra, P. (2001) « Le transport routier en France : aspects géopolitiques d'une question environnementale », *Hérodote* vol 1, n°100, p. 151-179.
- Tironi, M. (2015) « (De)politicising and Ecologising Bicycles », *Journal of Cultural Economy*, 8:2, 166-183
- Tricoire, J. (2007). Le tramway à Paris et en Ile-de-France. Paris, La Vie du Rail.
- Urfalino, P. (1994). Décisions, actions et jeux. Le cas des grands travaux parisiens. *Villes en parallèle*, (20-21), 3-26.
- Wollmann, H. (2000) "Local government systems: from historic divergence towards convergence? Great Britain, France, and Germany as comparative cases in point", *Environment and Planning C: Government and Policy*, 18, pp. 33–55.

Wollmann, H. (2004) "Local government reforms in Great Britain, Sweden, Germany and France: between multi-function and single purpose organisations", *Local Government Studies*, Vol. 20, n° 4, pp.639–665.

Zembri G., « Infrastructures de transport hybrides : quelques enseignements pour la planification. Le cas de la ligne de métro automatique Météor à Paris », Belgeo [online], 1-2, 2010. Available at: <http://belgeo.revues.org/6988>

Zittoun P., (2007), « La carte parisienne du bruit. La fabrique d'un nouvel énoncé de politique publique », *Politix*, 2, 78, p. 157-178.

Zittoun, P. (2008). One policy for two problems: the controversy surrounding the Parisian tramway. *Planning Theory & Practice*, 9(4), 459-474.

Zittoun, P., (2013), « Entre définition et propagation des énoncés de solution. L'influence du discours en « action » dans le changement d'une politique publique », *Revue française de science politique*, 63(3), p. 625-646

Zittoun, P. (2014). *La fabrique politique des politiques publiques: une approche pragmatique de l'action publique*. Presses de Sciences Po.

6.5 Websites

IAU Ile de France <http://www.iau-idf.fr/>

OMNIL <http://www.omnil.fr/>

Plan de déplacements urbains Ile de France: <http://pdu.stif.info/>

RATP <http://www.ratp.fr/fr/>

Optile <http://www.optile.com>

Société du Grand Paris <http://www.societedugrandparis.fr>

STIF <http://www.stif.org/>

Ville de Paris <http://www.paris.fr/>

Atelier du Grand Paris : <http://www.ateliergrandparis.fr>

Official Law Bulletin <http://www.legifrance.fr>

La documentation Française: <http://www.ladocumentationfrancaise.fr>

French Open Data Platform : <https://www.data.gouv.fr>

Instut Nationale de la statistique et des études économiques : <https://www.insee.fr>

Région Ile-de-France : <https://www.iledefrance.fr/>

Ministère de l'environnement, de l'énergie et de la mer : <http://www.developpement-durable.gouv.fr/>

7 Glossary – List of main organizations

AdCF. Association des Communautés de France. Established in 1989 in order to represent inter-municipal organizations. In 2017, it represents over 900 inter-municipal organizations and metropolises, which together amount to some 80% of the total French population.

APUR. Atelier Parisien d'Urbanisme. Established in 1967 by the Paris Council, its mission is produce reports about, to analyse and to develop policy strategies concerning urban and social evolution.

IAURP. Institut d'Aménagement et d'Urbanisme de la Région Parisienne. Established in 1960 by the State to evaluate the assessments made by the PADOG and to support the SDAURP 1965 elaboration.

IAURIF. Institut d'Aménagement et d'Urbanisme de la Région Ile-de-France. Successor of the IAURP, it supports the decision-making process of the regional council through research activity and report production.

DIRIF. Direction de Routes Ile-de-France. Established in 2006 by the State. Its mission is to managed, maintain and operate the national road network not conceded to private operators.

DRIEA (Ile de France). Direction Régional et Interdépartemental de l'Équipement et de l'Aménagement de l'Ile-de-France. Established in 2010 under the Regional Prefect authority as a result of a merger between a number of other local State administrations among which : the Direction Régionale de l'Équipement d'Ile-de-France (DREIF) and the Direction des Routes d'Ile-de-France (DIRIF). It has a consultative role on several domains: urban development, transport, road network management and operation, risk prevention, budget management.

EPA: Etablissement Public d'Aménagement. It is an operational administrative structure under the direct control of the State usually adopted to implement urban and infrastructure development plans in behalf of the State itself or of another local authority.

Grande Couronne. Following the 1968 departmental reorganization, it includes four departments and is referred to the inner-suburbs: Seine-et-Marne (77), Yvelines (78), Essone (91), Val-d'Oise (95).

Petite Couronne. Following the 1968 departmental reorganization, it includes three departments and is referred to the outer-suburbs: Hauts-de-Seine (92), Seine Saint-Denis (93), Val-de-Marne (94).

OPTILE. Organisation Professionnelle des Transports d'Ile-de-France. It is a professional organisation which represents some 80 bus companies in the region during negotiations with the STIF about operating network contracts. It concerns primarily local or departmental connections within the inner and outer suburb areas.

RATP. Régie Autonome des Transports Parisiennes. Established in 1949 by the State. Public state-owned company operating a large share of public transport services in Paris and the suburbs, incl. the metro system, the largest share of Tramway lines, as well as a large share of the bus network, and parts of the RER network.

SNCF. Société National des Chemins de fer Français. Established in 1939 by the State. Public state-owned company operating the railway transport network concerning freight transport and individual mobility. It operates a largest share of rail-based systems in the region (incl. regional trains, RER lines), one tramway line, and some bus lines through Kéolis, its subsidiary company.

STP. Syndicat des Transports Parisiens. Established by the State in 1959. Public administrative body composed by the State (majoritarian), the city of Paris, the Seine, Seine-et-Oise and Seine-et-Marne departments (before the 1968 administrative reform when it has been reformed). It has the role of organising and developing the public transport in the Paris region.

STIF. Syndicat des Transports d'Ile-de-France. Successor of the STP that was reformed into STIF 2000.

8 Annexes

8.1 Annex 1. List of key spatial and urban planning documents for the capital-city region

The following table introduces a list of key spatial and urban planning documents that are referred to throughout the report. It was compiled and adapted from various sources, among which the Ile-de-France region website: <https://www.iledefrance.fr/fil-actus-region/histoire-amenagement-ile-france>

	Date	Authority	Objectives	Main projects (incl. transport infrastructures)
Plan Prost, Spatial Plan for the Parisian Region	1932-1941	State	Further densify already urbanized areas, limit urban sprawl, develop services and networks in the suburbs	Motorways (A13, A12, A1, A6, A4), a 40-km ring around Paris (Périphérique), a 2 nd ring further out in the suburbs (Francilienne)
PADOG (Spatial and organizational Plan for the Parisian Region)	1960-1965	State	Decentralize, further densify already urbanized areas, limit urban sprawl	Plan large housing estates Develop new urban centres outside Paris: La Défense, Vélizy-Villacoublay, Le Bourget-La Courneuve, Créteil, Fontenay-sous-Bois.
SDAURP (Strategic spatial and urban development plan for the Parisian Region)	1965-1976	State (Paris District)	Enhance the role of the region as the national powerhouse, decentralize and polycentric model.	New towns: Cergy-Pontoise, Évry, Marne-la-Vallée, Sénart et Saint-Quentin-en-Yvelines Regional rail-based transport network (RER) Preserve the Green belt
SDRIF (Strategic planning document for the Ile-de-France region)	1994	State	Enhance the region's international and European attractiveness, reduce spatial inequalities and preserve rural and green areas.	Complete the motorway network Develop tangential connections in public transport (rail transport, metro)
SDRIF 2030	2008 (never adopted, revised 2013)	State and Region	Enhance the region's international and European attractiveness, reduce socio-spatial inequalities	Densify specific urbanized areas Invest in public transport networks Protect natural resources and green areas

8.2 Annex 2. Chronology of major decentralization reforms and key legislations about transport in the capital-city region.

The following table introduces a selective overview of major pieces of legislation that shaped transport governance and policy developments in the capital-city region. These pieces of law can be found in four main policy domains: decentralization reforms, transport, environmental protection and spatial planning.

It was established together with C. Raes from IAU, as part of the WP4 Cities' reports (Raes, 2016) and completed by A. Maggioni and C. Halpern from Sciences Po. It draws upon a large variety of sources, incl. Legifrance, which is a comprehensive database for all legal documents in France: <https://www.legifrance.gouv.fr/>

Date	Name of Legislation	Policy domain	Content
1961	Law n°61-845 August 2, 1961 on the organization of the Paris region	State reform / capital-city region	Creation of the Paris district. It confirms and extends the 1959 legislative order.
1964	Law n°64-707, July 10, 1964, on the reorganization of the Paris region	State reform / capital-city region	Reform of the administrative organization of the Parisian region, incl. the creation of 7 départements in addition to the city of Paris, and the transfer of administrative powers towards State representatives in the region and the city (deconcentration reform)
1975	Law n° 75-1331, December 31, 1975, portant réforme du régime administratif de la Ville de Paris	State reform / city of Paris	Reform of the administrative regime of the city of Paris. The city of Paris is recognized as a municipality in its own rights, incl. an elected mayor at the 1977 municipal elections. The council's double political function - a municipal and a départemental function - is confirmed.
1976	Law n° 76-394, May 6, 1976 on the creation and organization of the Ile-de-France region	State reform / capital-city region	Reform of the administrative regime of the region. The Parisian Region becomes the Ile-de-France region. A revised version of the SDAU is introduced.
1982	Law 82-213 for the rights and liberties of municipalities, departments and regions.	State reform / Decentralization	The so-called Defferre law initiates the decentralisation process, including the removal of preliminary administrative control over local authorities' decisions. Departmental and regional executive powers are transferred from state representatives (préfets) to the elected president of these authorities' respective presidents. The president of the Ile-de-France regional council is elected for the 1 st time at the 1986 regional elections.
1982	Law 82-684, August 4, 1982 on the participation of employers to the financing of urban public transport	Transport	Public and private employers must reimburse 50% of their employees' season fares.
1982	The Domestic Transport Act (LOTI), n° 82-1153, December 30, 1982	Transport	It is considered a cornerstone in the development of transport policies. It recognizes the "right to travel under reasonable conditions of access, quality and price for every citizen and for the community as a whole". It organizes the decentralization of powers to municipalities and their groupings, with the exception of the Ile-de-France Region. The LOTI establishes Urban Transport Authorities (called Autorités Organisatrices des Transports Urbains, AOTUs) that are responsible for planning and coordinating public transport services in a designated "urban transport perimeter" (PTU). In addition, it introduces urban mobility plans (PDUs).
1982	Paris-Lyon-Marseille Law, n°82-1169, December 31, 1982	State reform / Decentralization	Administrative reform of Paris, Lyon and Marseille, including the creation of directly elected infra-municipal authorities (arrondissements).
1995	Law 95-115, February 4, 1995, introducing guidelines for spatial planning and development (LOADT)	Spatial planning	Powers to elaborate the Regional Planning Document (SDRIF) is delegated to the regional council in concert with the State
1996	Law n° 96-1236 on Air and the Rational Use of Energy (Loi l'air et l'utilisation rationnelle de l'énergie – LAURE), December 30, 1996	Environmental protection	It introduces a number of requirements in order to mitigate the negative impact of the automobile and with more than 100 000 inhabitants to produce PDUs that will contribute to: 1) reducing car traffic, 2) promoting the use of public transport, walking and cycling. Additional measures aiming at mitigating the impact of the automobile include the reorganization of parking, the development of right-of-way bus lanes in order to increase the reliability of public transport, improving the quality of information about transport for policy users, etc. The LAURE Law also introduces a collaborative approach to transport

			<p>planning in extending the range of stakeholders to be included in the preparation of PDUs.</p> <p>In the case of the capital-city region, it introduces an obligation for the Region to adopt its own Mobility Plan (PDUIF) and to ensure its compatibility with Spatial planning documents (SDRIF).</p>
2000	Decree, July 6 th , 2000	Transport governance / capital-city region	<p>It amends previous administrative acts related to the organization of passenger transport in the Paris Region and establishes the status of the Parisian Transport Syndicat (STP).</p> <p>The newly created Regional Transport Authority (STIF) has the power to establish pluri-annual network operating contracts with RATP and SNCF in order to enhance the quality of public transport service and the organization of public transport.</p>
2000	Law 2000-1208 on Solidarity and urban renewal, December 13, 2000.	Urban regeneration	<p>Authority over the regional transport agency (STP) is transferred to the region. STP is renamed STIF (see below). + Decree introducing</p>
2004	Law 2004-809, august 13, 2004, on local freedoms and responsibilities	State reform / Decentralization	<p>It marks another major step towards a decentralized organization for transport in the Ile-de-France region and the city of Paris.</p> <p>The State completely withdraws from the STIF's board and the Region takes over the chairmanship. The Act also provides STIF with new responsibilities: it becomes the region's transport authority for the entire region and takes over the elaboration of the Regional Mobility Plan (PDUIF).</p> <p>Powers over the road network are also redistributed: only the national road network (incl. expressways in the capital-city region) are transferred towards the departments.</p>
2009 & 2010	Act n° 2009-967, August 5, 2009, on the implementation of the Grenelle de l'environnement (Grenelle 1) & Law n° 2010-788, July 12, 2010, on the national commitment for the environment (Grenelle 2)	Environmental protection	<p>The "Grenelle Laws" aims at mainstreaming environmental protection issues across all policy domains and levels of government.</p> <p>With regards to transport, the new legislation stipulates that "the national government will take action to reduce pollution and nuisances caused by various types of transport". It also sets a 20% reduction target in CO2 emissions between 2005 and 2020.</p> <p>Both laws also emphasize the need to develop alternative transport infrastructures and systems (incl. bike- and car-sharing, electric vehicles, various types of public transport, etc.). Funding is also provided at national level for urban transport infrastructure projects through three calls. It also includes the right to experiment with new policy tools, such as economic instruments (tax on heavy goods vehicles, congestion charges), zoning in major cities (low emission zones). Most attempts to introduce such policy tools failed due to social and political resistances.</p>
2010	Law 2010-597, June 3, 2010 on the Greater Paris	State reform / capital-city region	<p>This major piece of law sets the framework for the modernization of the existing transport network and the development of a large transport system (Grand Paris Express). It introduces the Société du Grand Paris (SGP), a state-owned transport company that is responsible for building the transport network. New transport funding schemes are introduced upon this occasion (State subsidies and taxation of commercial space).</p>
2014	Law 2014-58 January 27, 2014, on the modernization of territorial public action and the assertion of metropolitan authorities (MAPTAM)	State reform / capital-city region	<p>This marks a 4th wave of decentralization reforms in France. It clarifies the division of exclusive and shared tasks between levels of government. It also introduces a new level of government in large cities, e.g. metropolitan authorities. With regards to transport, it extends the responsibilities of transport authorities to non-motorized transport (e.g. bike sharing services), car sharing and carpooling, as well as urban logistics with the exception of the capital-city region. It also introduces a reform of car parking in order for municipalities to use revenues from car parking as a tool for modal shift.</p> <p>In the case of STIF, it is designated as the authority responsible for decisions pertaining to infrastructure projects and rolling stock acquisition for the Grand Paris Express project.</p>
2015	Law 2015-991 august 7 th , 2015 on the new territorial organization of the Republic (NoTRE)	State reform / capital-city region	<p>This law clarifies the status and provisions related to the Greater Paris Metropolitan Authority.</p>

2016	CDG Express Law, 2016-1887, December 28, 2016	Transport / capital-city region	A rail connexion is developed between Paris and CDG airport by 2024
2017	Law 2017-257, February 28, 2017, on the Status of Paris and Metropolitan Planning	State reform / city of Paris	As of January 2019, the city of Paris will exert the powers of a municipality and a Département. Arrondissements 1 to 4 will be merged. As of January 2017, the city of Paris gains new competences, incl. in traffic control and parking management.

8.3 Annex 3. The regional transport authority STIF: major reforms and competences

The following table lists the main reforms and stages in the emergence of a regional transport authority. It was compiled by Halpern, drawing on a number of sources including grey literature from STIF and interviews.

	Change of name	Governance	Transport companies	Main missions	Main revenues
Before 1959	Comité des transports parisiens (1938) Office régional des transports parisiens (1949)	Majority of votes lies with State representatives	Creation of RATP and SNCF	Coordinate public transport offer in the capital-city region	
1959	Syndicat des transports parisiens (STP)	Responsibility is shared between the State, the city of Paris and 3 départements.	- 2 large public transport companies: RATP and SNCF, which together represent some 90% of the public transport offer. + some 90 private companies, operating bus services. - Relations are set as part of network operating contracts under the supervision of the State Council.	- Organise and modernize public transport in the capital-city region - Coordinate public investment in transport infrastructures and services - Provide expertise about the evolution of transport demand - Contribute to the elaboration of regional mobility plans.	- No financial autonomy - Parts of proceeds from parking fines - Public subsidies or compensatory allowance, as part of network operating contracts with a division of tasks between the State (to the SNCF) and local authorities (to the RATP).
1968 + 1971 (versement transport) + 1975 (carte orange)	1 st reform	- All 8 départements are represented in the board - STP is now presided by the region's préfet. - (1971) Introduction of the <i>versement transport</i> : a local tax levied on the total gross salaries of all employees of companies of more than 9 employees, intended to raise capital for investment in local public transport infrastructure. NB: the 1976 regionalization reform did not increase the region's powers within STP nor over RATP and SNCF.		Introduction of one single pass (carte orange) in 1975, valid on all public transport networks in the capital-city region.	- Financial autonomy - transport revenues - In addition to above, STP manages the proceeds from the <i>versement transport</i> .
2000 (Decree)	STP becomes STIF	Responsibility transferred to the Region, with reduced powers and	Reform of network operating contracts, now set on a pluriannual basis and	Introduction (2001) of a contactless smart card (Pass Navigo) as a single mean of payment.	- see above - Continued struggle over the State allowance to the STIF budget.

		responsibilities from the State	providing some objectives in terms of service quantity and quality.		
Since 2005	STIF	<ul style="list-style-type: none"> - Complete withdrawal from the State from the STIF's board. - Significant extension of powers, almost equivalent to that of other regional transport authorities in France. 	RATP is recognized as a rail infrastructure owner.	<ul style="list-style-type: none"> - Organizes, coordinates and finances public transport - Develop infrastructure investments - revise regional mobility plans - define tax rates for the versement transport additional transport services: school transport, transport on demand, river transport. - Simplification of the tariff structure (from 8 to 6 zones in 2007; from 6 to 5 in 2011 and progressive introduction of a single tariff zone). 	<ul style="list-style-type: none"> - 50% of total proceeds from road traffic fines, - versement transport - Public subsidies <p>Major exceptions / issues of contention with the State:</p> <ul style="list-style-type: none"> - some major capital investments, such as the Grand Paris Express, the high-speed rail-link to CDG airport (CDG express) are withdrawn from the STIF's authority - rail infrastructure ownership is transferred to RATP free of charges
2015		Reform of the versement transport, with the introduction of a new threshold (companies of more than 11 employees).		Introduction of a single tariff zone for public transport.	

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D4.2 - Technical report for Stage 3 city: Vienna

Work Package 4 “Qualitative analysis of Transport policy developments”

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1 The CREATE project

1.1 Brief reminder about the CREATE project

How to reduce road congestion in large cities in Europe and the Euro-Med? How to encourage a switch from cars to more sustainable transport modes? Historically, rapid urban growth has led to a growth in car ownership and use, and consequential increases in urban road traffic levels. These increases, in turn, are associated with a range of negative impacts, including traffic congestion, traffic collisions, social exclusion and dangerous levels of air and noise pollution.

Recently, some European cities (Berlin, Copenhagen, London, Paris, Vienna) appear to have been successful in decoupling economic growth from traffic growth – and in the process, have been able to offer urban living environments that are cleaner and less congested, while maintaining increases in living standards. Why have these cities been able to achieve this turnaround, and what lessons can be drawn for other parts of Europe and the Euro-Med?

To answer this fundamental question, the CREATE project (Congestion Reduction in Europe, Advancing Transport Efficiency) brings together a team of international analysts in order to explore historical patterns of urban road traffic and car use, to identify success factors in encouraging modal shift and lessons learnt in Western European capital cities, and to work with Eastern Europe and Euro-med city partners (Adana, Amman, Bucharest, Skopje and Tallinn) to assist them in developing sustainable strategies.

Further information available on the CREATE Website: <http://www.create-mobility.eu/>

1.1 About Work Package 4 in the CREATE Project

How to account for the shift away from car-oriented policies towards sustainable urban transport policies?

As part of the CREATE project, the primary goal of Work Package 4 (WP4) is to analyse the historical 'Transport Policy Evolution Cycle' processes in Stage 3 cities, i.e. five Western European capitals (Berlin, Copenhagen, London, Paris and Vienna): Can we identify similar qualitative drivers of change across European cities? What are the main differences between cities and how to account for them? To what extent does the analysis of policy developments over time helps us make sense of recent policy choices and deadlocks? This is done by identifying the qualitative and contextual drivers that have enabled – or hindered – a shift from Stage 1 "urban congestion growth" to Stage 3 "encouraging sustainable mobility and liveable cities" policies. It also contributes to highlighting lessons to be learnt in order to speedup these processes in Stage 1 cities.

The work done as part of WP4 is coordinated by Dr. Charlotte Halpern, at Sciences Po, Centre d'études européennes et de politique comparée (CEE), CNRS, Paris.

This document, **D4.2 Vienna report**, is part of the second series of technical reports produced as part of WP4 during Task 3, "Qualitative analysis of transport policy development cycle processes in the five Stage 3 cities during the Shift from Stage 1 to Stage 3". It seeks to develop a comprehensive qualitative analysis of the historical development of policies relating to traffic congestion and car use over the past four decades. It investigates the ways in which transport policies are designed and implemented in the five Stage 3 cities, how they have evolved over time, which policy mix has been favoured at different times, their intended/unexpected effects, and how coordination has been ensured.

By highlighting discrepancies between policy choices and policy results, D4.2 reports contribute to understanding the shift away from car-oriented policies towards alternative transport policies in different city contexts.

This is done across the 5 cities as follows:

- Explore urban sustainable policy dynamics by looking at three policy dimensions:
 - policy objectives (i.e. Which are the main policy documents? How are power and resources distributed among different levels of government? Major policy reforms? Proposed, passed and failed measures?),

- policy structures (i.e. what are the main resources: legal, financial, organisational? Evolution of budgets? Organisation charts? Creation of new agencies?)
- policy instruments (i.e. regulatory/legislative, economic/fiscal, agreement-/incentive-based, informative/communication-based).
- Map out the evolution over time since the policy shift began by explaining the dynamics of issue salience, institutional and political changes, as well as changes in the governance of transport.
- Understand how controversies regarding urban sustainability policies were resolved by looking at policy results (failed/accepted measures).

The completion of Task 3 draws on the work done in Tasks 1 and 2, as introduced in the 1st WP4 Technical report. It developed the common analytic framework, methodology and data collection strategy that is applied in WP4, provided a first assessment of the spatial and chronological perimeter it targets, and a brief mapping out of multi-level institutional and transport governance settings in the five Stage 3 cities, including a chronology of the shift from Stage 1 to Stage 3. Data sources include policy documents, proposed and passed measures, yearly budgets, and expert interviews with key policy actors.

The work achieved as part of WP4 is complementary to other work produced as part of the CREATE project. Particularly noteworthy is the work done as part of WP3 and D3.2 reports, which introduce transport supply data and policies influencing travel demand in each city. When relevant, specific sections from D3.2 reports are referred to. This will be done systematically during Task 4, and as part of WP5.

1.2 About this document, D4.2 Vienna report

This D4.2 Vienna report develops a case study of this specific Stage 3 city. A preliminary draft was produced by Nicole Badstuber (UCL) in December 2016. It was then completed by Dr Charlotte Halpern (Sciences Po) in April 2018, in order to provide an analysis of transport policy developments in Vienna. It provides key data and high-level interpretations for this case to feed into the wider cross-city analysis of transport policy evolutions being undertaken for Work Package 4 of the CREATE project.

More precisely, each D4.2. report includes the following information:

- A short summary
- Context: socio-demographic changes, major evolutions in urban development
- Institutional and political arrangements
- The governance of transport
- The organization of transport, including the transport offer
- Main policies, measures, or projects
- A brief conclusion about the 3 stages approach
- References, including grey literature and major policy reports, main publications about urban governance and transport.

This D4.2 Vienna report is not of itself a definitive synthesis of transport policy evolutions and their causes in Vienna, but rather it is a compendium of resources, with some basic interpretation, to feed into this further analysis. It is complementary to the work produced by BOKU, as part of WP3, which reviews transport supply data and policies influencing travel demand in the city.

This report only reflects the authors' view. Where opinions are expressed about the causes of change or the significance of specific aspects, these are with the sole intention of guiding further analysis under the CREATE programme and to act as a starting point for that further analysis.

1.3 Short summary of D4.2 Vienna report

A number of travel behaviour indicators show that a major transformation has been taking place in Vienna since the mid 2000s. The analysis done in WP4 discusses transport policy developments in the context of the CREATE Stages 1-to-3 evolutionary approach.

More precisely, analysing transport policy developments in Vienna highlights three major findings. First the three policy types coexist with one another, each benefiting from their own champions within the city administration, the political spectrum and the transport policy community at large. More precisely, transport policies shifted progressively from planning for the 'automobile city' (stage 1), towards planning for people (stage 2), which is still dominant in federal transport policies and to some extent, in transport policies at city level as well, and, more recently, towards 'planning for city life' policies (stage 3), which have been incrementally introduced

during the 2010s. As observed in Copenhagen and Berlin, the incremental nature of policy change in Vienna contributes to exacerbating the overlap between the three policy types and for the transition being neither unidirectional nor evenly spread in the region. Second, robust forms of urban governance and the infrastructure and built environment legacy account for the emergence and adaptability of the Viennese model of public transport over time. Drawing on a deeply rooted corporatist form of policy-making, SPÖ elites were able, together with the City administration and the city's utilities company, to negotiate effective implementation with transport organizations, workers' representatives, and district administrations. By shaping opportunities for new entrants – civil society organizations, economic business groups, etc. – into the transport sector, it successfully integrated their demands into the local policy-making community. More precisely, the main drivers for stage 3 policies result from the pressure exerted by ecologist groups and cycling organizations, the election of a red-green majority in 2010 and increased policy capabilities within the City administration and the transport planning community. Third, similarly to the situation observed in other WP4 cities, this evolution is not evenly spread in the city, with some strong differences between the historic city centre, and the inner and the outer suburbs. In this respect, Vienna's historic urban core still benefits from tailor-made transport policy initiatives, including urban design and pedestrianisation initiatives. By contrast the role of the car remains largely dominant on both sides of the city's borders, and accounts for increased commuting traffic flows.

In this context, the report discusses the long-term viability of the Vienna approach to car reduction, which primarily draws on the combination between two policy tools, i.e., parking management and high capacity and quality public transport. Elaborated in the early 1990s, the approach was considerably enhanced and strengthened over the past 3 decades, including through sustainable transport initiatives (the "Green alliance" concept) and new technologies and multimodal travel solutions (smart city agenda) since the election of a red-green majority. Yet the report shows the growing challenges this approach faces in a context of population growth, a rapidly evolving political outlook, and uncertainties related to resources available for public transport in the future. It examines how weakening forms of urban governance have resulted in the growing politicization of transport issues, which manifests itself in two different ways: first, the growing number of transport controversies; and second, new opportunities for ideas and solutions promoted by outsiders to the local transport policy-community. Last but not least, it discusses the potential disruptive role of several challenges: those related to macro-trends, such as population growth and increased commuting traffic flows, those related to forms of urban and regional governance, weakening in the former case, and weakly institutionalized in the latter case, and those related to power relations between advocates of the car, public transport and active modes in a context of increased political competition.

2 Introduction to the Vienna case study

Like many capital cities in Europe, Vienna faces growing pressure on the transport system as demand increases and diversifies. As with other Stage 3 cities in WP4, current debates about transport policies tackle the challenge of population growth, competing demand for scarce road space and strengthening non-motorized alternatives. Furthermore, the Austrian capital-city also faces the challenges of a legacy urban form which profoundly shapes past and present transport policy developments. The urban core of Vienna was built around a backbone of a frequent and connected public transport network in the 19th century. This compact city built during the 19th century therefore lends itself to a transformation into the 21st century liveable city.

Taking a long-term view on transport policy developments in Vienna and the wider metropolitan area, **the report's main objective is both contextual and explanatory at the same time**. More precisely, it contributes to the understanding of historical transport policy developments in Vienna by exploring the 'ifs' and 'how's' of the shift towards a more sustainable transport offer. First, it offers a detailed overview of major developments in transport over time by looking at the evolution of policy objectives, tools and resources. Second it provides some explanation for policy change by examining various drivers – or combination of drivers – that might have exerted an influence on the process.

The analysis of transport policy developments in Vienna highlights the gradual nature of change and provides some explanation for it. First, the changing role of road transport is discussed by analysing transport policy developments over six decades. As post WWII city planning principles focused on urbanizing outer districts, private motorization emerged as a dominant transport policy solution with the support of the Federal government. The report examines how public transport incrementally regained priority over car use until it was eventually confirmed as the backbone of the city's transport network. Second, the report highlights main drivers for policy change in a context of strong political and institutional stability that characterized urban politics since 1955. It discusses the interplay between exogenous factors of change on the one hand, such as Federal or EU legislation, the fall of the Iron curtain, macro-economic changes such as the Oil crisis, and on the other hand, factors of change pertaining to evolving urban politics, both within the Social Democratic Party (SPÖ)¹ and between the SPÖ and its challengers (the Conservative Party², and more recently, the Green Party and the FPÖ³), the strengthening of the city's administration, and the different ways in which urban authorities overcame a large array of social resistances and mobilizations against proposed transport policy changes. In doing so, the report argues that such consistency shaped transport politics in Vienna and accounts for the gradual nature of transport policy developments until the early 2010s. In a context of increased political competition for leadership, the importance of transport issues on the local political agenda is being exacerbated and opens new room for manoeuvre for alternative policy solutions.

Area selection

In this report, the area under scrutiny is that of the Land. In this respect, it somewhat differs from the analysis done in WP3 and refers to a formal level of political governance.

Data availability and sources

The case of Vienna relied on a different research support than other cases in WP4. Partners at BOKU produced a short city questionnaire (Roeder, Klementsitz, 2016), but no workshop was organized⁴. Two series of face-to-face interviews were conducted, first by Charlotte Halpern and Nicole Badstuber (February 2016) and second by Nicole Badstuber (March 2016). Interviewees were asked to identify, explain and discuss transport policy developments marking the shift from a car centric to sustainable transport policy. The report also benefited

¹ Sozialistische Partei Österreichs until 1991, now Sozialdemokratische Partei Österreichs

² Österreichische Volkspartei - ÖVP

³ Freiheitliche Partei Österreichs, a right-wing populist and national-conservative political party.

⁴ For a presentation of the methodology used in WP4, see D4.1 technical report (Halpern, Persico, 2016). A joint paper was produced with partners from BOKU and TUD, together with a poster, for the TRA2018 Conference in Vienna (April 2018) (Roeder et al., 2018).

from the input provided by BOKU and the City of Vienna to WP4, including statistical data, reports, grey literature (e.g., archives) and press archives, as well as from input provided to WP3 and the CREATE project more generally⁵. In addition, Sozialdata's input to the CREATE project and discussions with Werner Brog proved particularly helpful in order to make sense of developments taking place in Vienna⁶.

Data collection was systematized as part of the completion of the WP4 database. This was achieved by the Sciences Po, CEE team (Ann-Kathrin Bersch, Charlotte Halpern, Simon Persico)⁷.

Report outline

The remaining part of this report is organized in two sections. The first section starts by providing a dynamic overview of demographic, socio-economic and institutional changes in Vienna over the past six decades. This also includes changes in transport organization and transport supply. Together, it contributes to highlighting drivers for policy change that are specific to the Vienna case. The second section explores the relationship between those factors of change and transport policy developments. It accounts for major transport controversies and for the choice and selection of policy initiatives. It also discusses their respective effects in the context of the CREATE transport policy development cycle approach. Three main phases are identified with some significant change in the type of policy goals, measures and projects, and in the last subsection, current challenges are discussed into more details.

⁵ See the D3.2 Vienna report (Roider et al., 2017). See also contributions to CREATE meetings, including the WP3 workshop (Sciences Po, Paris, 8-9 March 2017), CREATE consortium meetings and the WP6 scenario-building workshop (UCL, London, 21-22 February 2018), during which presentations were made by researchers from BOKU or representatives from the City of Vienna.

⁶ See Sozialdata's contributions to the Vienna's 1994 Transport strategy (*Vekehrskonzept*), and in particular those related to evolving attitudes towards mobility. These were published by MA 18 as part of a special series.

⁷ This case study has also benefited from the work done outside the CREATE project. First, Charlotte Halpern organized a one-week study visit to Vienna and Bratislava with Sciences Po master students in November 2013. The material gathered on this occasion proved particularly helpful as a first insight into forms of urban governance and policy-making in Vienna. Our group met with leading representatives from the political, administrative and academic spheres. Second, this work also benefited from discussions led within the TUT-POL project, *Transformative urban transport*, led by Diane Davies, with funding from the Volvo Foundation for Education and Research. The case of both Vienna (Bühler, Pucher, 2017) and Paris (Halpern, Le Galès, 2017) were examined in this project. Some of the work about Vienna has already been published (Bühler et al., 2017a; Bühler et al., 2017b). An edited volume is under press, to be published at Oxford University Press in the Autumn (Davis, Altshuler, forthcoming).

3 Major drivers of transport policy change in Vienna.

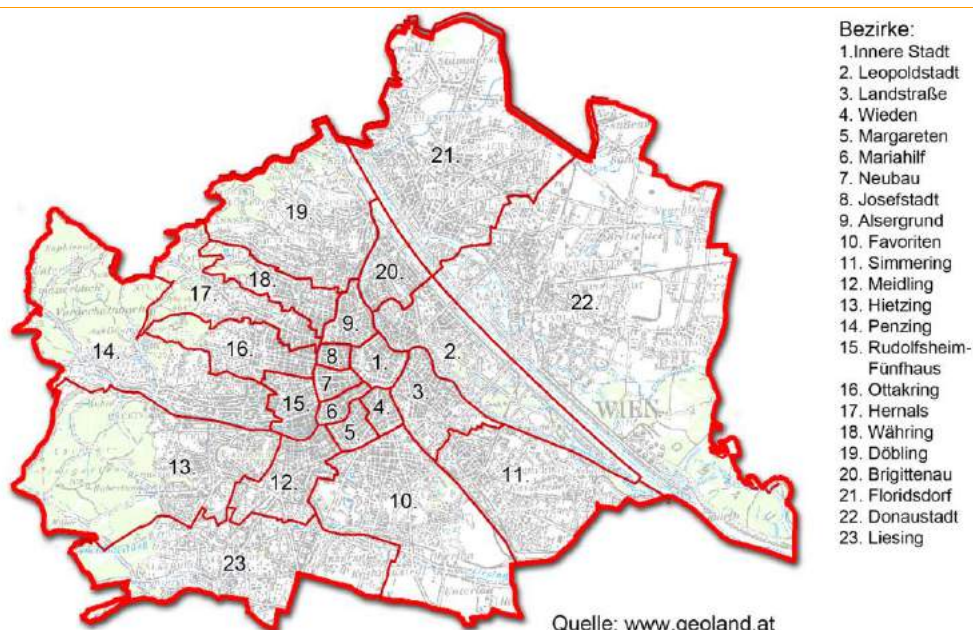
With a population of 1.74 million and a total area of 415 km², Vienna is the most populous state in the country, and by far the largest urban area⁸. It is the country's undisputed political centre since the creation of the Republic of Austria in 1922 (Becker 1999). Between 1945 and 1955, the inner-city district was administered by all four powers, as part of the so-called "Inter-allied Zone". Its economic development was inhibited because of the Soviet occupation and the uncertainty of Austria's status following WWII. After the split of Europe into the NATO and Warsaw pact countries in 1955, Austria was re-established as a sovereign state and the City of Vienna was restored into its pre-1938 borders. Yet in the context of the Cold war, the country's center of gravity moved towards the west, to the detriment of Vienna. Located near the Iron Curtain, the city lost access to its hinterland until 1990.

Since the early 1990s and in a changed political and economic context, it experienced continued urban growth, thus raising new challenges in terms of city planning. The area under study in this report is the City of Vienna, and a distinction is made in some cases between:

- The urban core, which corresponds to district 1 and the area classified on the UNESCO's World heritage list
- The inner-city area refers to districts 1-9 + 20 and covers some 46 km². Its limits are marked with the Ringstrasse, a ring road build in the mid 19th century alongside the former outer fortifications. It is commonly known as "the Gürtel" or the belt.
- The outer-city area refers to districts 10-19 + 21-23, and covers some 367 km²

Map 1a gives an overview of the districts of Vienna. In this section, the following factors of change are successively addressed: 1) Demographic, urbanization and socio-economic trends; 2) Politico-administrative arrangements; 3) Transport planning, organization and funding.

Map 1a. Administrative map of Vienna and its 23 districts.



Source : © WienTurismus, www.geoland.at

3.1 Demographic, urbanization and socio-economic trends

Demographic, socio-economic and urbanization trends have changed dramatically in Vienna since the 1950s. These developments are, to a large extent, comparable to trends observed across other cities in WP4, but also reflect this city's singular trajectory. In the context of the Cold War era, it lost its distinctiveness from both a demographic and economic perspective, by contrast to the changes underway in the rest of the country. As of

⁸ It is followed by Graz, with some 281.000 inhabitants.

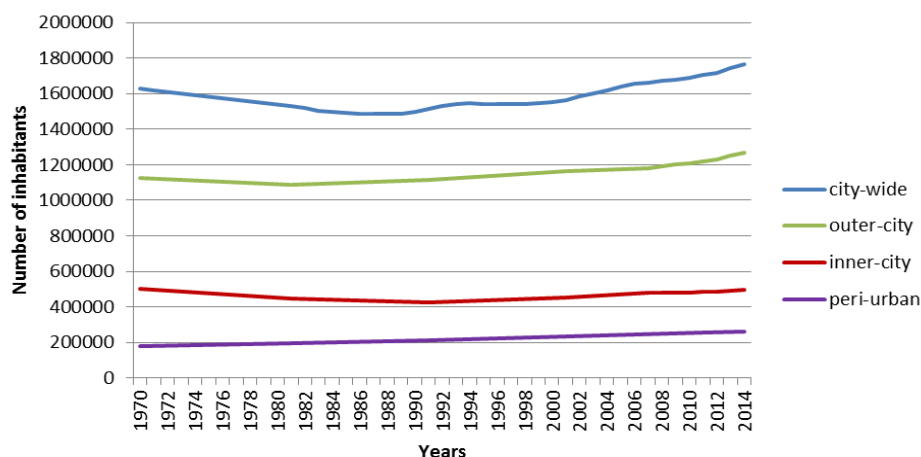
today, the city's undisputed role as the country's economic centre results from the concentration of population in the Vienna region.

3.1.1 Demographic trends: suburbanization and re-urbanization

Within the timeframe considered in this study, demographic trends highlight a major turning point taking place during the second half of 1980s. These overall trends do not reflect any major differences between the inner and the outer city.

Following significant losses of residents between 1934 and 1951, Vienna experienced a short period of low levels of population growth in the post WWII era. It was more evenly spread across the city than during other phases of city development, and predominantly took place across the outer districts, 10 to 23 (except for 20) (Eigner, Resch, op.cit.). This period of population growth was, however, immediately followed by three decades of population decline from 1.62 million inhabitants in the early 1960s down to 1.48 million in 1987 (See Graph 1a). By then, Vienna's population had dropped to its lowest point⁹. Population decline was mainly due to negative birth rates: Vienna was reliant on migration to buffer the move to the suburbs - between 1961 and 1971 nearly 70,000 people migrated to Vienna - rather than people leaving the city *en masse*. Hidden by these averages are conflicting trends: the inner-city was most affected by urban flight in the 1960s and 70s, whereas there was an increase in population numbers in the outer districts – with notable growth in the 1960s and 70s – and others moved further afield. During these two decades, the population in the outer districts rose by around 3,5 per cent.

Graph 1a. Development of the total number of inhabitants by area types [number]



Source: (Statistik Austria, 2002), (Statistik Austria, 2015), extracted from D3.2 Vienna report, p.10.

From the mid 1980s onward, the rate of urban flight fell overall citywide, and signs of re-urbanisation were observed. The trend was not dramatic. Between 1987 and 1991 the population rose by 0.6 per cent to 1.54 million. This represented the first growth in population since the end of the Second World War. This shift mainly resulted from the national labour deficit, the dissolution of the Soviet Union and the war in former Yugoslavia¹⁰. The population growth could be attributed to international migration, in particular from Poland, Czechoslovakia and former Yugoslavia. Throughout this time period, there were differences across the city, with the urban core experiencing continued if markedly slower population decreases until the mid 1990s, by contrast to population growth in the outer districts.

Since 1991, population in Vienna continued growing from 1.55 million in 1995 up to 1.8 in 2016. Growth is still primarily resulting from incoming migration, with some 29 per cent of the Viennese population holding a

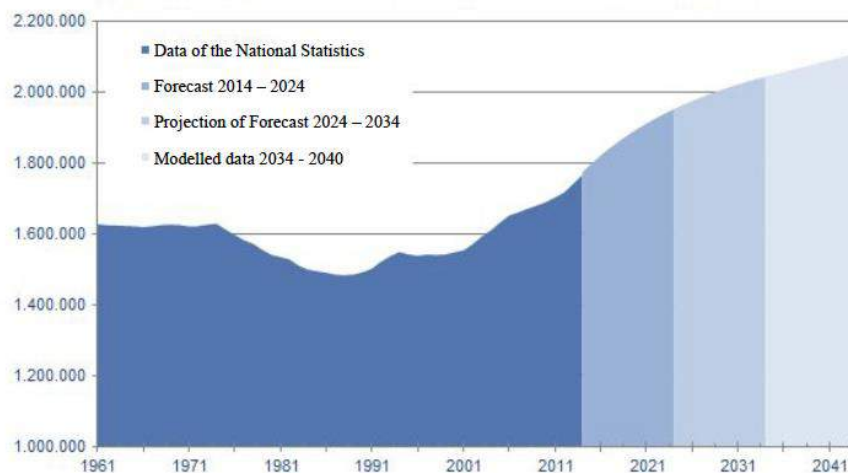
⁹ To set this into context the population of Vienna was a fifth lower in 1981 than in 1923. (Eigner, Resch, op.cit.)

¹⁰ This trend was mitigated by stricter migration policies in the mid-nineties (Magistratsabteilung 24, 2010). See also see D3.2 report.

foreign passport, mainly coming from Serbia, Turkey and Germany¹¹, and a city wide average of 29 per cent of residents with a foreign background MA 23, 2017). By contrast to the situation observed in Vienna, a steady suburbanization process was observed from the 1960s onwards outside the city's borders in the adjacent province of Lower Austria, i.e. peri-urban areas in WP3. It exhibited a steady population growth from 1.77 million inhabitants in 1970 to 2.68 million in 2015.

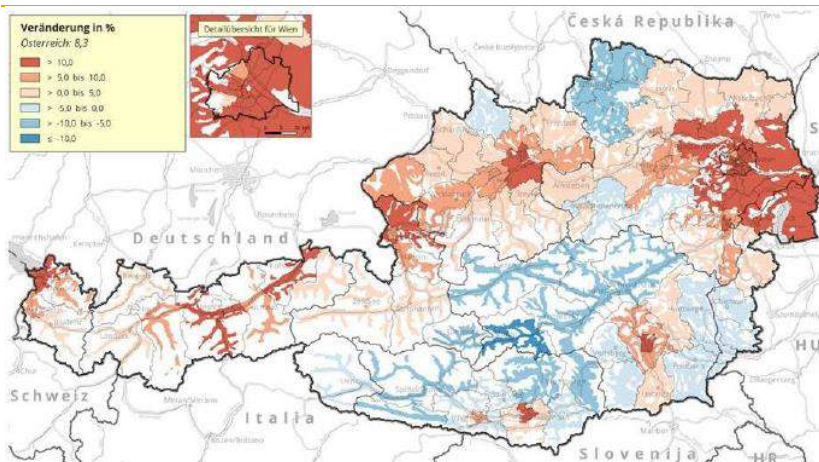
The population of Vienna and its metropolitan area is expected to grow by up to 4.75 per cent by 2025 (See Graph 1b). When considered into the national context (Map 1b), the enlarged Vienna region stands out as the area facing the most important demographic pressure in forthcoming decades (Umweltbundesamt, 2016, p.259-272). Changes taking place in the Viennese agglomeration reflect urbanization trends at national level. As of 2016, more than 66 per cent (5,29 million) lived in urban regions (Statistics Austria, 2016). Vienna, as in other Austrian urban regions, is characterized with rapid suburbanization.

Graph 1b. Population growth rate and projection to 2044 in Vienna



Source : Statistics Austria, Joint presentation by BOKU & City of Vienna, CREATE project, September 2015

Map 1b. Prognosis of the population change in Austria, 2014-2030 (in %)



Quelle: ÖROK (2015b)

Source: ÖROK, retrieved from the 11th State of the environment report, 2016 (Umweltbundesamt, 2016, p.262)

Land-use regulation is a preferred policy tool in order to address these issues, together with housing policies. There again, profound changes in the uses and effects of these policy tools have been observed during

¹¹ Vienna is considered an exception in Austria. At national level, the share of residents from foreign origin is 11,5 per cent of the total population (Statistik Österreich, 2017). See Facts and Figures on migration 2017, MA 23: <https://www.wien.gv.at/english/social/integration/basic-work/facts-figures.html> (last consulted 23/02/2018).

the time span considered in this report, to which one should add some differences across provinces and between provinces and the Federal State.

3.1.2 From strict land-use regulations to diffuse suburbanization

Changes in the spatial distribution of population growth did not take place spontaneously but resulted from the continued interplay between, on the one hand, interventionist, city-led urban policies and on the other hand, the preferences of households and private firms for cheaper residential and commercial spaces at the urban fringes.

Interventionist model of city planning

Following its restoration to its pre-1938 borders, the City of Vienna drew on land-use regulations in order to develop an interventionist model of housing production. This city-led, strongly regulated model aimed at reducing levels of density in the inner-city and developing areas located in the outer districts. Even though negotiations with municipalities located in the adjacent province of Lower Austria took another decade before any of the dispositions enclosed in the Land use plan could be implemented (Pirhofer, Stimmer, 2007), these city planning principles structured the production of housing until the late 1970s.

Between 1945 and 1954, 28,000 new housing units were built, and the rate of home building rose to between 6,000 and 7,000 units a year between 1954 and 1959 (Eigner, Resch, 2001). The peak of home building was reached in 1967, when 17,818 housing units were completed in the year. The housing units were overwhelmingly built by the city, as opposed to only around a fifth by the private sector. The development of housing associations was encouraged in a 1954 Law in order to encourage the production of housing with the outlook for them to be owned. This gave urban authorities an opportunity to profoundly transform urbanization patterns citywide and reduce levels of density in the inner-city area.

By 1971, the number of residents living in the inner-city had stayed the same whilst a number of households moved to the city's periphery. The population spread led to a drop in residential density which constitutes, to this date, a distinctive feature of the Viennese quality of life. Together with the regulation of labour relations, the provision of housing is considered a key dimension of Vienna's Fordist economic model until the late 1990s – and a strategic resource for the SPÖ's continued leadership (Novy et al., 2001; Interview politician, SPÖ, March 2016).

As of late 2017, the City of Vienna still relies upon housing as a strategic tool for urban transformation. It owns some 220,000 housing units, with about one quarter of the Viennese population leaving in municipally-owned housing.

Diffuse suburbanization at the city's fringes and beyond

A number of studies underlined the weakening of this urban economic regime (Backer, Novy, 1999; Novy et al., 2001). The housing market was incrementally re-commodified following the deregulation of rent controls at national level. Cooperatives and local authorities were allowed to sell their housing stocks at market value. In Vienna's private rental housing sector, prices increased continuously since the late 1980s and opened new opportunities for the real estate sector in order to build and rent housing in Vienna and the surrounding areas. The shift was particularly pronounced in the case of large urban development projects, such as Donau City¹² on the Danube Island, the MuseumsQuartier in the inner-city and Seestadt Aspern¹³ in an area located northeast from the city centre (Kurz, 1981). In this context, private real estate developers played an active role in planning and developing large-scale urban developments, in close cooperation with the city's planning authorities, the Vienna Danube Region Development Corporation (WED) and Bank of Austria (Novy et al., op.cit.).

Together, these changes on the housing market account for the City's limited ability to regulate urbanization dynamics through land-use regulations since the late 1990s. More precisely, the post WWII top-down

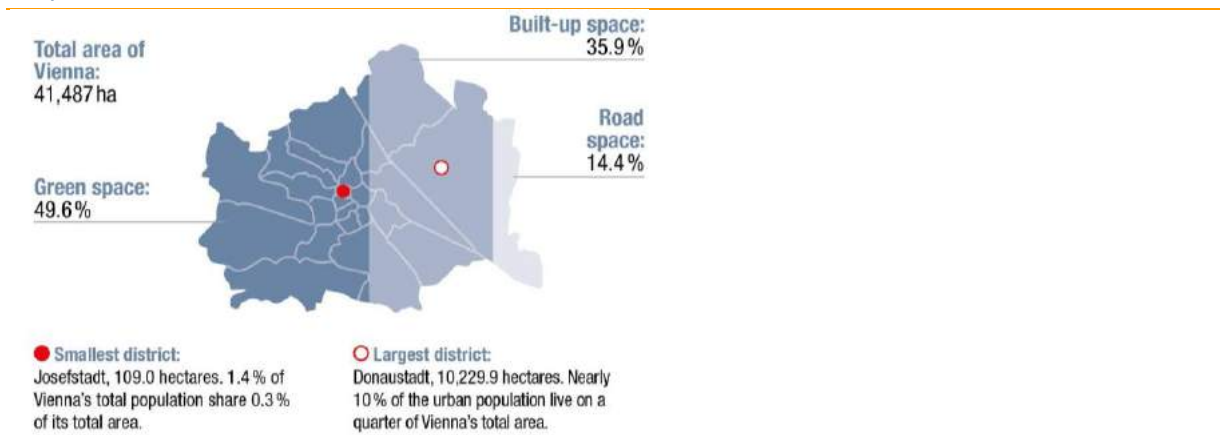
¹² Donau City is considered one of Vienna's flagship urban developments from the post WWII era. See below.

¹³ This the most recent development undertaken by the City of Vienna, some 7km East from the city centre. See below.

approach to urban planning is weakening, and when considered at national level, it is reduced to a minimum. This is particularly marked at the city's fringes, where diffuse urbanization and low-density developments took place.

Suburbanization has also characterized developments taking place across the city's borders, in the province of Lower Austria. In order to attract wealthier households and social groups, municipalities outside Vienna developed aggressive housing and real estate policies in order to allow for low density settlements. Until the early 1990s, some of the richest municipalities in Austria could be found in Vienna's functional urban region (OECD, 2003). Space consumption per inhabitant rose by 25 per cent since 1990, and increasingly threatens the preservation of green spaces while at the same time, increasing car dependency (Tötzer, Gigler, 2007). Such levels of competition between local authorities also impact the location of workplaces, with a strategic use of fiscal policy tools and land-use regulations in order to attract firms and new economic development centres. In this respect, the City of Vienna also contributes to the dispersion of employment within its borders in order to accommodate this demand in spite of rising real-estate prices. Overall, prices for housing ownership in Vienna underwent a 67 per cent increase since 2008, which is significantly higher than in other fast growing cities in Austria (Umweltbundesamt, 2016, 261).

Map 1b. Land-use in Vienna, as of end 2016



Source : MA 28, MA 37 and MA 41, calculation by Municipal Department 23 - Economic Affairs, Labour and Statistics, 2018.

The spatial distribution of workplaces

In parallel to changes in the population's spatial distribution, some changes were also observed in the amount, the distribution and the type of workplaces over the timeframe considered in this study. The period of rebuilding after the war led to the reinvigoration of industries in the inner districts: in 1954, there were 66,958 workplaces in Vienna, with some 52 per cent located in the inner-city (Eigner, Resch, op.cit.). Following the decision reached in 1955, a large share of industrial firms and workplaces relocated in Lower Austria and towards other provinces. Employment in the inner districts fell from 148,000 to 113,000 between 1961 and 1991. The distribution of workplaces gradually shifted towards the outer districts, with 45 per cent of the workplaces located in the inner-city districts in 1973.

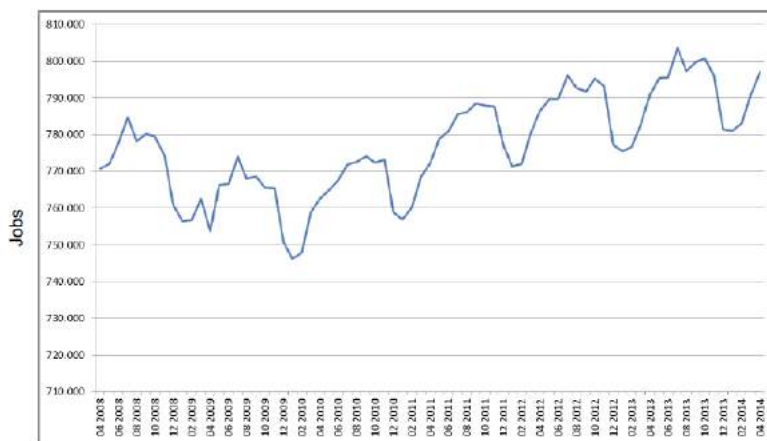
These changes in the location of employment also reflected **some changes in the type of employment**: manufacturing industries accounted for 41 per cent of employment, compared with 58 per cent for service industries. Whilst an upswing of the secondary sector was observed at the fringes of the city, employment dispersion did not lead to a decentralization of control up until the mid 1970s, and in 1973, headquarters in Vienna controlled 43 per cent of all jobs in the industry countrywide (Becker, Novy, 1999, 136). More space-consuming industries were relocated to outer districts and new businesses developed outside the city's borders, especially in the areas located south of the River Danube. Outer districts did not all benefit from similar trajectories in their economic recovery¹⁴.

¹⁴ Floridsdorf, the 21st district in north-eastern Vienna where the Soviet occupation forces were stationed, only started to rebuild and economically recover a decade later than its counterparts (Eigner, Resch, op.cit.)

Nevertheless, the city experienced continued growth in GDP and in the number of jobs from the early 1970s onward (Eichmann, Nocker, 2015). Such growth was mainly driven by public employment, including international public organizations setting up their headquarters in Vienna, and jobs in the construction industry, which rose continuously in relationship with non-market services. Moreover, industrial foreign direct investments and services remained concentrated in Vienna. During the 1980s, there was an increase of workplaces by 7,3 per cent city-wide, due to the rising number of commuters and the influx of migrants who took up residence in Vienna (European Commission, 1996). This number has further increased by 29 per cent over the past 20 years.

Following the fall of the Iron curtain and accession to the EU in 1995, this local Keynesian economic development policy was incrementally dismantled and replaced with increased efforts to attract higher qualified jobs altogether, and promote entrepreneurship, services in high-tech and financial sectors. Within Vienna the share of manufacturing workplaces declined to 14 per cent until 2014. Correspondingly, the service industries have increased and now account for 86 per cent of employment. The number of high skilled employment and growth in services, particularly energy distribution, financial and insurance services, increased significantly over the past decade (See Graph 2). Vienna ranks among the world's most popular city for congresses and hosts a number of international organizations (Statistics Vienna, 2017). Tourism, education and culture also contribute to the city's economic growth¹⁵. Over the recent period, some efforts were devoted to strengthening linkages between universities, firms and local authorities.

Graph 2. Evolution of the number of jobs in Vienna (2008-2014)



Source : City of Vienna, Municipality Department of Economics, Labour and Statistics (MA23), retrieved from joint presentation by BOKU & City of Vienna, CREATE Project, September 2015

3.1.3 Socio-economic changes in a context of economic growth

Although the balance shifted towards the outer districts gaining in economic importance, inner districts maintained their importance as an employment hub. The nominal gross domestic product of Vienna and the nominal yearly income per capita show a steady growth since the 1970s, which reflects the average annual income of Vienna's inhabitants. Yet, changes in the distribution of workplaces also reflects broader socio-economic changes as well as changes in the education levels of the population (see D3.2 Vienna report).

Until 1973, Vienna experienced a decline in employment numbers, also explained by its stagnating – and aging – population: the percentage of Vienna's population in employment dropped from 69.9 per cent in 1961 to 63.7 per cent in 1971¹⁶. Between 1961 and 1991, those in employment living in the outer districts rose from 43.7 per cent of the total employees to 51.5 per cent. Those in employment residing in the inner districts dropped from 339,000 to 296,000, whilst the number of employed living in Outer districts rose from 378,000 to 434,000 (Eigner, Resch, op. cit.)

¹⁵ For a detailed analysis of Vienna's employment structure, see Eichmann & Nocker (2015).

¹⁶ In addition, the extending of compulsory schooling to year 9 and changes in the law to allow early retirement contributed to the issue.

Income differences between the top and the bottom quartiles have increased continuously since the early 2000s (MA18, 2010)¹⁷. In relationship with above-mentioned changes in the type of jobs and their spatial distribution, the highest concentration of full-time and high-skilled jobs is to be found in the inner city, as well as outer districts, e.g., Hietzing (13th district), Liesing (23rd district), and peri-urban areas in the north and the western parts of the city. In those areas, access to green spaces is also highest. By contrast, the largest share of the population with low-skilled jobs and levels of education, as well as highest levels of unemployment, are concentrated in outer districts between the inner-city and the Danube (e.g., Rudolfsheim-Fünfhaus, 15th district), and in outer districts beyond the “Gürtel”¹⁸.

3.1.4 Concluding remarks

Demographic, socioeconomic and urban changes are expected to have had an impact on mobility demand due to the concomitant evolution of places of residence and the location of economic centres. Moreover, apart from a small number of city-led urban development projects in which a strong control on land-use regulations was maintained, the city's ability to regulate the location and main features of new developments for residential and commercial spaces is weakening. This is particularly the case for new economic centres and urban developments at the city's fringes. Beyond the city's borders, in both Lower Austria and in Burgenland, inter-municipal competition increased and this favours low density settlements and space-consuming developments. Overall, demographic growth and urbanization trends have shaped the framing of political debates and policy objectives in Vienna. These factors have been instrumental in justifying interventionist approaches to land-use regulation and housing in selected areas while at the same time allowing for differentiated enforcement strategies when seeking to attract jobs and firms within its own borders.

3.2 The distribution of powers in the context of the Austrian politico-institutional system

Austria has three levels of government: the federal state, the federal provinces (*Bundesländer*) and the municipalities.

- The federal state is responsible for federal legislation, external relations such as foreign policy and trade, and defence. It is also responsible for ordinary jurisdiction.
- The federal provinces hold legislative and executive powers.
- The smallest unit of government, the municipalities, do not hold legislative powers. Although they do not draft any legislation they are the enforcers of the federal government's administrative tasks.

Within this federal system, the responsibility to enact laws is divided between the federal state and the provinces. The City of Vienna has a specific status within the national politico-administrative system. In this context, its effective political capacities and level of autonomy is defined in the context of the Austrian model of cooperative federalism (Bischof, Karlhofer, 2015). This is addressed in the following section.

3.2.1 Vienna as a city-state

Since 1955, Vienna has combined the three main functions of a Federal capital, a Federal province and a municipality, and is also the headquarters of a number of international regional offices. As a Bundesland (federal province)¹⁹, Vienna has its own legislative and executive body. The city's statutes specify the respective powers of the Council, the Senate (i.e., the government) and the mayor, as well as those of the city's administration.

¹⁷ For a comprehensive overview of the spatial distribution of socioeconomic changes in Vienna, see MA 18, (2010), Soziale Veränderungsprozesse im Stadtraum: <https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008107.pdf> (last consulted 23/01/2018).

¹⁸ See above for an explanation of this term.

¹⁹ Vienna has been one of the nine federal provinces (*Bundesländer*) that formed the Republic of Austria since 1922.

Although representing in theory two levels of government, Vienna only has one legislative chamber that serves as both the city council and the state legislature. The legislative body is the Vienna Provincial Parliament (Landtag). The 100 members of the city Council (*Gemeinderat*) are also the 100 members of the Landtag (Vienna Provincial Government). The members are elected for five year terms by the Viennese population. The elections are on the basis of proportional representation. A number of city council committees, consisting of representatives of the political parties elected into the provincial parliament, are in place, including a Committee for Traffic (Kostal et al., 2014).

The highest executive body of the Bundesland is the Vienna Provincial Government (Landesregierung) or Senate. It is headed by the Governor (Landeshauptmann) who also acts as the city's Mayor. The Landesregierung consists of 12 members, called the City Councillors, and the Governor. The Mayor is elected by the city council. His or her term is equivalent to that of the city council legislative period. Together with the City councillors, the mayor manages the city's administration, or Magistrat (Stadt Wien, 2016e).

The City of Vienna: a two tiers governance system

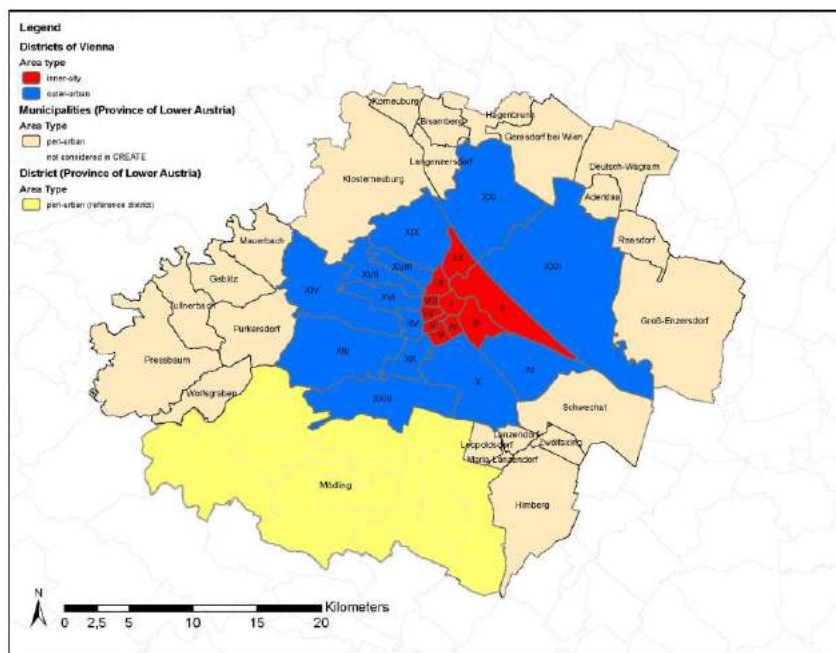
As a statutory city, Vienna is a single administrative district in its entirety. Since 1955, it has been restored into its pre-1938 borders. It comprises 23 districts and covers an area of 415 km².

The 23 district authorities were created in 1850, when the city area was enlarged by the inclusion of surrounding communities. **They do not form part of the city's administration and are not considered administrative districts**²⁰. The districts' numbering reflects to some degree the process by which they were incorporated into Vienna (see Map 2a):

- The first (District 1) refers to what used to be Vienna's historic centre and the entire city until 1850. It was awarded a UNESCO World heritage status in 2001.
- Districts 2–9 (and 20 which was in 1900 separated from the second district) were incorporated in 1850 and are known as *Innenbezirke* (inner districts). They are composed of the localities that were located on the other side of the second ring of fortifications around Vienna (the Gürtel) and within the Green Belt.
- The other districts (10-19; 21-23), which are known as the *Außenbezirke* (outer districts), were incorporated between 1874 and 1938, mainly in 1892.

²⁰ They are headed by legally qualified civil servants, performing the tasks assigned to them in the "Allocation of Competencies of the Vienna City Administration". Document available her : <https://www.wien.gv.at/english/administration/organisation/pdf/administration.pdf> (Last consulted January 2017)

Map 2a: Area types of the stage 3 city “Vienna” (2014)



Source: retrieved from D3.2 Vienna report, p.8.

3.2.2 Evolving Bund-Land relationships in the context of cooperative federalism

The City's effective level of autonomy is defined in the context of the Austrian model of cooperative federalism (Bischof, Karlhofer, 2015). Unlike the situation observed in other federal states in Europe, the autonomy of Austrian provinces is limited and their reserved powers are limited to a small number of areas, e.g., local finances, education, public services and public tendering. In all other policy domains, such as transport for example, the distribution of powers is not clearly defined in the Constitution, thus potentially leading to overlapping, competing or joint initiatives between levels of government. Apart from a small number of exceptions, the Bundesrat enjoys no veto powers against federal legislations. **Alternatively, in those areas in which the provinces are responsible for controlling the execution of Federal legislations, the relationship is not a hierarchical one, but rather a complex one, in which successive negotiations shape policy implementation.**

In this context of “cooperative federalism” in which the distribution of powers has often been characterized as complex and unclear (Bischof, Karlhofer, 2015), evolving relationships – political, institutional, etc. – between levels of government play a critical role in shaping policy developments at the local level. From a political perspective, the essentials of Austrian consociationalism, based on the once predominant Austrian People's Party (ÖVP)²¹ and the Social Democrats (SPÖ)²², eroded from the 1970s onward and more so in the context of the economic crisis. Until then, these two parties usually formed coalition governments. They were intertwined with trade unions and business organizations respectively and government linked up with large interest groups in neo-corporatist institutions. In this framework, decision making was highly centralized and top-down, but was also instrumental to finding compromises across policy areas (Becker, Novy, 1999). Since the late 1980s, systematic recourse to coalition governments at both federal and provincial levels, contributed to increase political party competition and to weaken traditional forms of corporatist decision-making. Clientelism began to lose its importance, with some variations across sectors and across provinces. This appears to be increasingly the case since the 2010s, due to increased differences between the federal government's party composition and that of the provinces, with new parties like the Green Party entering coalitions with the ÖVP and the SPÖ in six provinces, including Vienna (Karlhofer, 2015).

²¹ Österreichische Volkspartei - ÖVP

²² Sozialistische Partei Österreichs until 1991, now Sozialdemokratische Partei Österreichs

From an institutional perspective, when considered over time, it is often considered that Bund-Länder relations were characterized, between 1945-1988, by creeping centralization or moderate federalization according to policy domains, while as of 1988, **it gave way to uneven developments and several attempts at federal reforms in order to clarify the existing system.**

3.2.3 The Austrian spatial planning system in brief: the case of Vienna

Within the national spatial planning system, each province develops its own spatial strategies, plans and projects. There are no legislative provisions for spatial planning at the Austrian federal level: no planning law and no competence for urban or spatial planning. The plans provided by the provinces are only binding for state administration and public administration at the lower levels (provinces and municipalities), not for citizens and businesses. The following list provides an overview of the plans and policy documents that were consulted while preparing this report²³.

Table 1a. List of major plans and policy documents

1952	Stadtplan Wien
1961	Zoning plan Vienna
1968	Verkehrskonzept Wien
1980	Stadtentwicklungsplan Wien + Verkehrskonzeption
1994	Stadtentwicklungsplan Wien (STEP 1994) + Masterplan Verkehr
2001	Austrian Spatial Development Concept (ÖREK 2001)
2003	Masterplan Verkehr 2003
2005	Stadtentwicklungsplan Wien (STEP 2005)
2011	Austrian Spatial Development Concept (ÖREK 2011)
2015	Stadtentwicklungsplan 2025 (STEP 2025) + Fachkonzept Mobilität

The most important level of spatial planning is municipalities and cities. They enjoy an autonomous competence of local planning. The mayor and the municipal council have the responsibility to control land use through various types of plans²⁴. In view of its specific status in Austria – as the biggest city and in its double role of state and capital - Vienna has developed specific planning tools and regulations, including urban development plans (Stadtentwicklungsplan), to which it will be extensively referred to in Section 4 of this report. In Vienna, successive plans defined the city's objectives for urban planning for a 10-year horizon. Since the late 2000s, and similarly to other countries in Europe, a shift has been observed towards strategic spatial planning and reflects in subsequent plans' method and content. A common vision was elaborated by drawing on growth estimates, scenario planning and extended consultations. This in turn allows for increased flexibility at implementation stage. In Vienna, both STEP 2005 and 2025 are representative of this shift (Healey, 2003, see below).

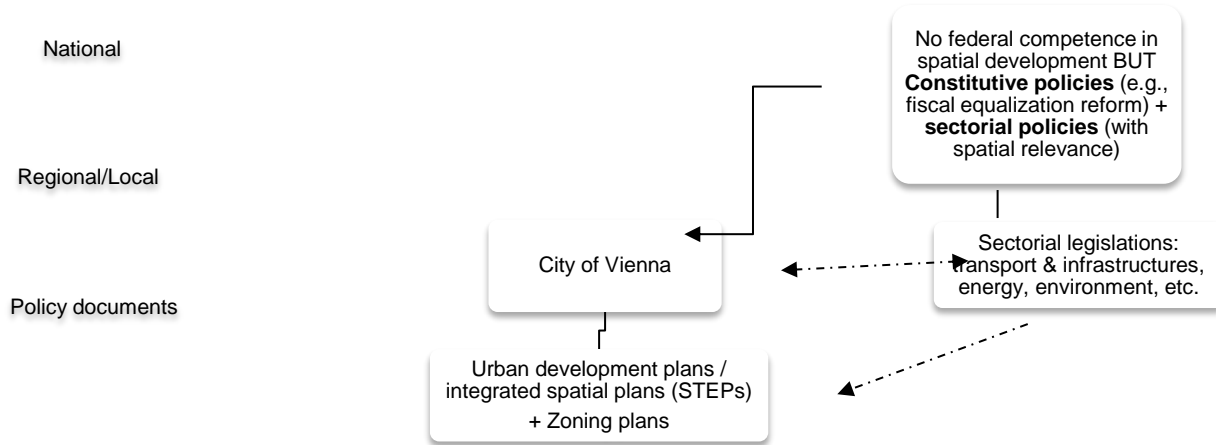
Furthermore, in the Austrian context, urban planners and architects have been instrumental in ensuring the overarching role of urban and spatial planning principles over issue-specific planning processes. Historically, this has been particularly marked in the case of Vienna, with famous architects and planners shaping the city's urban futures from the second half of the 19th century onward. There again, some changes have been observed during the time span considered in this report and the city now increasingly relies upon in-house urban planning expertise (see below, section 4). Yet when compared with other cities under study in WP4, these practitioners still play a critical role in shaping public and expert debates, political discourses and planning processes. They are represented in the city's planning advisory board, where they contribute to the emphasis given to spatial structure and urban planning rather than urban design. Their influence in the Viennese context also draws on the longevity of their professional careers and their multiple positions as academics, consultants and experts (Kurz, 1981; Pirhofer, Stimmer, 2007). As summarized by an interviewee: *“the Viennese world of transport and urban planning is very small. Everybody knows everybody. It doesn't mean these experts don't have an international reputation and career. But they tend to remain in Vienna for the largest part of their careers and are deeply embedded in local planning politics. Maybe this will change with the new generation and evolving constraints in the urban planning academic sphere.”* (Interview City administration, February 2016). By contrast, in the case of debates

²³ The largest share of these documents is available in local university libraries or online/on-demand through Vienna's City planning Department's website: <https://www.wien.gv.at/stadtentwicklung/dienststellen/ma18/> (last consulted 10/02/2018).

²⁴ These plans include: a local development scheme (Örtliches Entwicklungskonzept), the land use plan or zoning plan (Flächenwidmungsplan), and the local development plan (Bebauungsplan). See the information provided in the SPECIAL project (EU funded, under the intelligent Energy Europe programme) about Frameworks for spatial planning in Austria : <http://www.special-eu.org/knowledge-pool/module-2-spatial-planning-frameworks/policies-and-objectives/austria-planning-systems/> (Last consulted, December 2016).

regarding the historic city-centre, architects and practitioners specialized in heritage conservation have kept the upper hand on urban planning debates, which in turn accounts for a greater emphasis on urban design (De Frantz, 2001).

Figure 1. The Austrian spatial planning system



Source: Own elaboration, adapted from Schremmer (2013), Sciences Po STU Masters study visit to Vienna-Bratislava.

3.2.4 Ensuring Vienna's role and function as the main national hub

The coordination of federal and regional interests lies in the hands of ÖROK, the Austrian Conference on Spatial Planning. It was founded in 1971 by the federal government, the Länder and municipalities in order to coordinate spatial development at the national level. Its role considerably increased following Austria's accession to the European Union, and it now operates as a coordinating body between the EU and domestic levels of government for all issues related to spatial and regional planning. ÖROK develop and publish the "Austrian Spatial Development Concept" every ten years. The current version is "The Austrian Spatial Development Concept 2011" (ÖROK 2011). ÖROK also plays a key role, together with negotiations between and within political parties, in order to ensure both vertical (across levels of government) and horizontal (across ministry departments) coordination.

The role of the Federal State in transport planning and capacity investments

Despite its lack of competences in spatial planning, the Federal government retains a key role through its sectorial policies, including transport and infrastructure planning (see Figure 1). Since the 1995 accession to the EU and the 2004 enlargement, most efforts at federal level have been devoted to strengthening Vienna's central location as a major European hub. This was made material through a number of investments in strategic transport infrastructure and networks, including the extension of the airport, the development of a new main train station (Bahnhof Wien Europa Mitte), the extension of major railways and highways, and the development of cross-border relations as part of the Danube Region strategy and the CENTROPE project.

The federal government also plays a direct role in the Viennese transport network and the provision of transport services through its agencies. Usually, projects are harmonized with the framework conditions set by the ministry, which means that its influence remains limited except for decisions on national roads, including urban motorways, and the railway system. More specifically, it plays a critical role in the planning and operation of the rail-based network through the ÖBB (national railways agency), and that of national roads, including urban motorways (see below). Capacity investments in both networks are usually harmonized with the framework conditions set by the ministry, which means that its influence remains high for decisions on national roads and the railway system, and more limited for other networks. In addition to its role as transport authority, the Federal transport ministry, the national council and Federal agencies play a key role in funding transport capacity investments: up to 50 per cent of capacity investments in Vienna can be co-funded with Federal subsidies, provided they are coherent with Federal transport policy priorities and with political agreements regarding the allocation of funding between provinces.

Since the 2010s, a large share of federal policies and subsidies has been reshuffled according to the priorities set in the smart city agenda. It fosters increased quality of life for citizens and increased competitiveness through innovative action in the fields of energy, housing, mobility and urban planning. Cities' efforts to achieve commonly defined goals are supported through the Climate and Energy Fund and the development of a common set of indicators aimed at monitoring, benchmarking and assessing²⁵.

Spatial planning principles and major urban development projects in Vienna since the 2000s

The priority assigned to and the resources to be gained with Vienna's enhanced function as a European hub led to a reframing of the spatial planning principles into a regional context. Since STEP 2005, the main challenge lies with population growth estimates in the city and the wider region. As part of preparatory works for STEP 2005, debates about spatial planning and urban development have repeatedly highlighted the need to contain urban growth by seeking a compact city model (see also OECD 2003). Similar to the situation observed in London, the preservation of the Greenbelt (Wienerwald) constitutes another major planning principle against urban growth. This includes the re-grouping of residential and economic activities, the restructuring of existing infrastructure and services through capacity extension, and the maintenance of public service provision in low-density areas. Over the recent period, these spatial planning principles are increasingly framed in the context of the smart city agenda, which was introduced at federal level in 2010. As part of this overarching goal, large-scale urban development and regeneration programmes were introduced after the mid 2000s, including major flagship projects such as the central station (Hauptbahnhof), Donau City and Seestadt Aspern, which seek to re-balance urban growth towards the Eastern side of the Danube.

Only two of these projects are briefly introduced here, due to their relevance as major recipients of federal subsidies as part of its infrastructure planning priorities and of the smart city agenda:

- Donau City

The development of this large business district was launched in the early 1960s and evolved incrementally during the next three decades. Critical milestones were the opening of the UNO city (1979), the metro (1982), and a congress center (1987). Following the failed project to host the 1995 world exhibition, new high-rise towers were built, together with new transport access (mainly by road). The development now covers an area of some 17,4 ha with some 500.000 m², mainly available for offices and commercial spaces. As of today, the eastern part of the area is under development. (StadtentwicklungWien, 2017)

- Seestadt Aspern

This is the most recent development undertaken by the City of Vienna. This urban extension is planned on a 24-ha area located 7km east from the city centre on a former airport field. It was designed as a showcase for the "Viennese approach to smart city planning", and relies upon an extensive use of smart technologies, energy efficient buildings and a liveable community with good, reliable public transport access to the city centre via the newly constructed U-Bahn extension. It is planned as a multi-phase development until 2028, and is planned to host 20,000 residents and 20,000 workplaces. Plans for new roadways are also under discussion in order to connect the northern periphery of Seestadt with two existing motorways. The aim is for Seestadt to be as little car dependent as possible and equidistant, by public transport, from both Vienna and Bratislava as part of the Twin City strategy advocated in STEP 2005.

The latest Urban development plan (Stadtentwicklungsplan 2025, STEP 2025) lays down the main principles for urban growth in Vienna. By contrast to STEP 2005, which was generally considered a failure in its inability to effectively structure policy choices, STEP 2025 now includes a series of thematic action plans that provide a set of measures, indicators and schedule for implementation. While not constituting any guarantee of effective implementation, it publicly engages all stakeholders and provides a basis for mainstreaming specific policy goals across sectors.

²⁵ The Smart City Profiles indicator method has been developed and tested in six Austrian cities, including Vienna, since 2013. This method aims at encouraging cities to "self-assess" themselves.

3.2.5 Weakly institutionalized forms of regional governance

In the Austrian spatial planning system, co-operation between the provinces in border regions is voluntary but customary. Apart from some specific areas in which have emerged formalized forms of cooperation, relationships between the City of Vienna and its hinterland are undertaken as part of inter-provincial relations.

The development of the Vienna metropolitan area or Stadtregion + emerged in the context of the Federal State's efforts to promote urban regions in order to constrain urban sprawl and foster greater spatial integration. Stadtregion + covers an area of 797 km²⁶ and encompasses the City of Vienna together with 40 municipalities outside the Vienna province, in Lower Austria. This also includes those in the political district of Mödling. Up until now, the metropolitan region remains weakly institutionalized. The planning organisation East (PGO - Planungsgemeinschaft Ost) serves as a strategic body for joint spatial planning and a forum²⁷ was established in 2006 in order to facilitate informal cooperation on both sides of the border. In transport however, the regional transport authority gained some strength since its creation in 1984. The Regional Transport Association (VOR) coordinates and organizes public transport in the region. Since the 2000s, it has also enclosed the province of Burgenland and offers a joint platform for cooperation in order to address travel demand and commuting traffic in Vienna's urban area (see below).

Furthermore, several initiatives among which CENTROPE and the Twin-city metropolis - aimed at fostering greater integration within the cross-border region. The CENTROPE area is referred to in a number of spatial planning documents and still guides some of Vienna's urban development and transport projects across the Danube. It encloses the functional urban areas of 4 cities – Vienna, Bratislava, Győr and Brno – located in 4 different EU member states. It brings together 16 subnational authorities and a total of more than 7 million inhabitants (see Map 2b) (OECD, 2003; Giffinger, Hamedinger 2009). This cross-border metropolitan region, and more precisely the twin city vision of regional development, was particularly dominant in the 2000's spatial planning document (STEP 2005) and supported in the context of the 2000-2013 EU structural funds programming periods. It results from Vienna's attempts to frame a number of issues in the context of an increased integration of labour markets at a regional level. Cross-border flows of commuters increased on a daily basis, thus contributed to increase pressure on Vienna's transport system. In the past, joint initiatives have focused on education, tourism and transport with the support of EU funding. In the latter case, the focus was on freight and passenger transport, and these projects have fostered the development of cross-border transport services by train and waterway.

Map 2b. The CENTROPE area and the twin-city metropolis



Source : ÖIR, Informationsdienst GmbH,

²⁶ For more details, see D3.2 Vienna report, p.7-8.

²⁷ Metropolitan area management Vienna-Lower Austria SUM (Stadt Umland Management)

This cross-border integration strategy was recently revised in view of the new red-green coalition's priorities in Vienna, that of their counterparts in neighbouring countries and that of the EU as part of its cohesion policy²⁸. Critical views argued that the CENTROPE project primarily sought to expand the Viennese urban growth model and increase economic integration to the city's benefit, thus leading to strong resistance and rejection once these cities, and Bratislava in particular, had been able to strengthen their own policy capabilities.

3.3 Politics in Vienna

In Vienna, politics and forms of urban governance are characterized with strong levels of stability and continuity. It is considered a stronghold of the Social Democratic Party. Within the Austrian federal State, the City of Vienna is considered exemplary of the corporatist form of decision-making that was distinctive of the post-WWII national political and economic system. It contributed to inventing it as part of an interventionist form of municipalism during the 1920s, and until today, despite some adjustments, this form of decision-making remains central to the functioning of local government (Becker, Novy, 1999).

3.3.1 The dominant role of SPÖ in Viennese forms of urban governance

The SPÖ has ruled the city without interruption since 1945, for short periods as a coalition government but always as the main partner²⁹. Dr. Michael Häupl was elected Mayor in 1994 and remained in power ever since (see list below). Until 2010, all transport ministers of the City of Vienna had also been party members of the SPÖ. This changed in 2010, when the SPÖ could not secure a majority.

Table 1b. List of Mayors (and governors) of Vienna since 1945 (all from the SPÖ)

1945-1951	Dr. Theodor Körner
1951-1965	Dr. Franz Jonas
1965-1970	Bruno Marek
1970-1973	Dr. Felix Slavik
1973-1984	Leopold Gratz
1984-1994	Dr. Helmut Zilk
Since 1994	Dr. Michael Häupl

The Red Vienna's historic legacy

The SPÖ's hegemony over forms of urban governance in Vienna is often referred to in the literature as the "Red Vienna". This is mainly due to the persistent legacy of the local welfare state that emerged during the post WWI era (Becker, Novy, 1999; Novy et al., 2001). Historically, the Social Democratic hegemony built on policies with strong labour rights and social housing, and proved hugely innovative in terms of policy initiatives. Following WWII and the end of the Nazi regime, this corporatist form of local clientelism resumed and consolidated the SPÖ's core voter base, namely the working class and labour unions. Yet within-party politics were increasingly set at Federal level, with less political capabilities at the local level to develop alternative policy solutions.

As the SPÖ still referred to Vienna as a showcase of Social Democratic politics, it nevertheless resulted into close interconnections between bureaucrats and politicians across levels of government and as part of individual professional careers. In line with the political arrangements observed at federal level, the ÖVP also benefited from this system of subsidized social services. The largest share of local public services was consolidated as part of the Vienna City Utilities Company³⁰ in 1952, which ranked third among Austrian service enterprises (Kostal et al., 2017). The main goal of local SPÖ elites was to protect the local economy and to attract large foreign investors, including international organizations, to choose Vienna as their headquarters. Since the development of the metro in the 1970s and the strengthening of the Vienna City Utilities-Transport Services³¹,

²⁸ Interview Austrian Institute for Regional Studies and Spatial planning (OIR), November 2013.

²⁹ This hegemonic position goes back to the 1920s and the early days of the Republic.

³⁰ Wiener Stadtwerke

³¹ Wiener Stadtwerke-Verkehrsbetriebe

Vienna's municipally-owned transport company, the location and access to public transport services have been included in this distributional system (Interview transport expert 1, March 2016).

As of the late 1980s, this system was weakened and reorganized following a series of liberalization reforms at federal level in the housing sector. At the local level too, new generations of SPÖ elites achieved greater autonomy from within party politics at federal level and increasingly sought to strengthen the urban dimension of sectoral policies (e.g., transport, energy, etc.). Also, the emergence of social movements and new political parties challenged this corporatist form of local clientelism and consensus-oriented politics. New forms of direct democracy were introduced and consultation mechanisms were systematically introduced in pursuit of a successful co-option strategy (Pelinka, Rosenberger, 2007). Financial support and the sociospatial distribution of public goods were extended to potential opponents as to avoid open controversies.

Insofar as **the SPÖ remains the main partner in successive coalition governments**, it still sets the city's finances and resources, negotiates with municipally-owned companies and plays a critical role in shaping opportunities for new entrants across policy domains. The Red Vienna's legacy is also vivid in the city's employment structure: the public sector remains the largest employer in Vienna (Eichmann, Nocker, 2015, 197). More than 18 per cent of the city's budget is devoted to social welfare and housing.

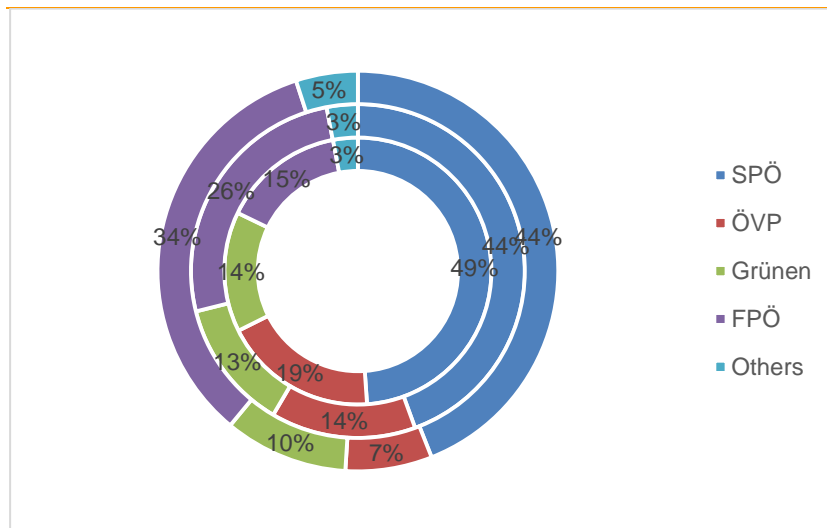
3.3.2 Who challenges the SPÖ's political leadership in Vienna?

Historically the political spectrum at the local level was divided between the social democrats (SPÖ) and the Conservatives (ÖVP), which until 1983 together managed to secure 90 per cent of the electorate. However, by 2010 that share fell to 58 per cent and this trend was confirmed after the 2015 municipal elections (see Graph 2a). Two thirds of the disaffected voters pledged their vote to the FPÖ whereas the Green Party (Die Grünen, die Grüne Alternative) managed to secure the remaining third that felt disillusioned by the mainstream parties.

The SPÖ have previously formed coalitions even though they were the largest party. From 1943-1973 and 1996-2001 the social democrats were in a coalition with the ÖVP, which accounts for the above-mentioned consensus-oriented politics. Since 2001 however, the SPÖ's absolute majority in local elections was challenged by the Green Party. This party was created in 1986 at national level and entered the local parliament in 1991. It has been part of the ruling coalition since 2010. Its traditional strongholds are located in the inner-city districts, in Neubau (7th district), Josefstadt (8th district), Alsergrund (9th district), Mariahilf (6th district) and Wieden (4th district). The leading figure of the Green Party in Vienna is the current vice-governor/vice-mayor of Vienna, Maria Vassilakou. Since 2010, she has also been Deputy Mayor for urban planning, transport, energy and citizen participation.

The Green Party has played a critical role over the past 30 years in **challenging the SPÖs political preferences in transport**. It is committed to ambitious sustainable development goals, including the development of non-motorized transport solutions. Before the Green Party became the SPÖ's coalition partner, Mayor Häupl already agreed to make concessions to his challenger in order to secure their support during his first term. Although both parties suffered a loss in voter shares in the latest elections in 2015 - the social democrats lost 4.75 per cent of their vote dropping to 39.59 per cent and the Green Party lost 0.8 per cent falling to a voter share of 11.84 per cent - they could form a majority coalition under the co-leadership of Mayor Häupl and vice-mayor Vassilakou. Over the past decade, the FPÖ has also weakened the stronghold of historic political forces, particularly that of the Conservatives whose share of the votes was significantly reduced following the last elections. Since the 2010 elections, FPÖ has confirmed its stronghold in outer districts.

Graph 2a. City of Vienna elections, vote share of each party 2005 vs. 2010. vs. 2015



Source: Stadt Wien, 2015. Extracted from WP4 database.

3.3.3 A weakening form of consensus-seeking policymaking

In the context of the Viennese political party system, **within-party politics (SPÖ) and negotiations between political parties play a critical role in policy-making**. While the two main parties dominated the scene and often in a governing coalition, disagreements were usually settled behind closed doors. This was achieved by striving for consensus with the major stakeholders such as unions, business leaders and civic society and involving these stakeholders from the earliest stage. When consensus could not be reached, the policy was pursued with incremental introduction with levers in place to adapt or reverse their implementation. In this way, the risk and potential for failure was reduced. This consensual style of decision-making also accounts for how the SPÖ has managed to hold on to power for the past seven decades. Yet it was also time intensive and led to long lead times for project implementation across policy sectors, as observed in the case of transport with the parking management scheme.

Since 2010, this form of policy-making has been weakened and now accounts for increased political competition during election campaigns as well as between members of the ruling coalition. The Green Party has been in a position to shape the urban political agenda, especially in the field of transport and to push for more radical initiatives (Buehler, Pucher, 2016). Concomitantly, the number of transport-related controversies have increased together with the level of competition among politicians and experts.

3.3.4 Concluding remarks for institutional and political factors

Over the timespan considered in this report, the political and institutional context has considerably evolved across different levels of government. Similarly, the dismantling of the Fordist welfare state, which drew on consensus-seeking policy-making and strong interventionism from the public sector, gave new opportunities for the private sector and new entrants across policy sectors.

Prior to the 1990s, **the federal level did play a pivotal role in shaping the transport policy agenda** through within-SPÖ politics on the one hand, and the setting of priorities and the allocation of resources on the other. In section four about transport policy developments in Vienna, we will examine the interplay between levels of government in shaping the setting of transport policy priorities.

In a context of post-liberalization reforms across a number of public sectors, **subnational political actors have enjoyed some increased autonomy**. In the case of Vienna, we will examine whether or not transport issues have been less dependent from urban and regional planning objectives and have acquired a logic of their own. We also expect the urban dimension of transport to have been strengthened as a result of the Green Party's efforts to increase the pressure on car use. Whilst the pre-existing form of local clientelism weakened, the number of transport controversies and conflicts is expected to have increased and to offer added opportunities for the general public. All in all, when combined with demographic and socioeconomic factors, **we**

assume there has been some growing differences between districts in the framing of transport policy priorities and during policy implementation.

3.4 Transport planning in Vienna

The Federal structure of Austria and its devolved planning powers make for a complex transport planning system, within which Vienna's effective capabilities have strengthened over the time span considered in this report. The City defines its strategic policy goals for urban and regional transport. The current transport strategy was published one year after the STEP 2025, in 2015, under the name "Thematic concept: Urban Mobility Plan Vienna" (see list of plans provided above). It further specifies the role of transport in achieving the city's overarching spatial and urban planning principles. Since the introduction of the 1994 Transport master plan and the creation of the Wiener Linien in 2001, the search for increased integration between public transport modes has been a driving principle of transport policies in Vienna. As of 2011, the "Green alliance" seeks to foster greater integration between non-motorized transport modes.

3.4.1 The City of Vienna as main transport authority

The City of Vienna acts as the main transport authority for the largest share of the transport network. In practice, several departments contribute to the planning and the organization of transport, they are briefly introduced below. It should be noted that Vienna's administration enjoys a large autonomy within this politico-administrative system. All 57 administrative departments have a basic right to self-organisation. Yet they only have limited competencies with regard to the utilisation of funds for the tasks assigned to them.

- Municipal Department 18 (MA18) – Urban Development/City Planning (Magistratsabteilung 18 Stadtplanung).

MA 18 is responsible for setting out the city's overarching transport policy goals as part of the city's Strategic Municipal Development Plan. It is also responsible for public transport, cycling and walking, and as such, it acts as a link with transport companies in order to set long-term transport policy goals and the allocation of funding, as well as for ensuring compliance. As sole owner of the public transport network, the City of Vienna ensures the overall system's long-term stability in planning and execution of projects. Its main objective is to offer comprehensive connectivity at a low fare price. (Wiener Linien). For an overview of this administration's organizational chart, see Graph 2.

- Municipal Department 28 (MA 28) - Road construction and maintenance (Magistratsabteilung 28 Straßenverwaltung und Straßenbau)

MA 28 is responsible for the planning, construction, maintenance, and general administration of the public road network (roads and traffic areas)

- Municipal Department 46 (MA 46) - Traffic organization and technical traffic matters (Magistratsabteilung 46 Verkehrsorganisation und technische Verkehrsangelegenheiten)

MA 46 is responsible for traffic management and since the late 2000s, it includes an office dedicated to cycling. Following the introduction of STEP 2025, its role extends to mobility management and to all forms of mobility.

- Municipal Department 5 – Financial Management (Magistratsabteilung 5 Finanzwesen)

MA 5 plays a pivotal role in transport planning and policy-making, especially for public transport as it oversees the work achieved by the Wiener Linien, and in the financing of the local public transport services supply.

3.4.2 The constant search for increased coordination

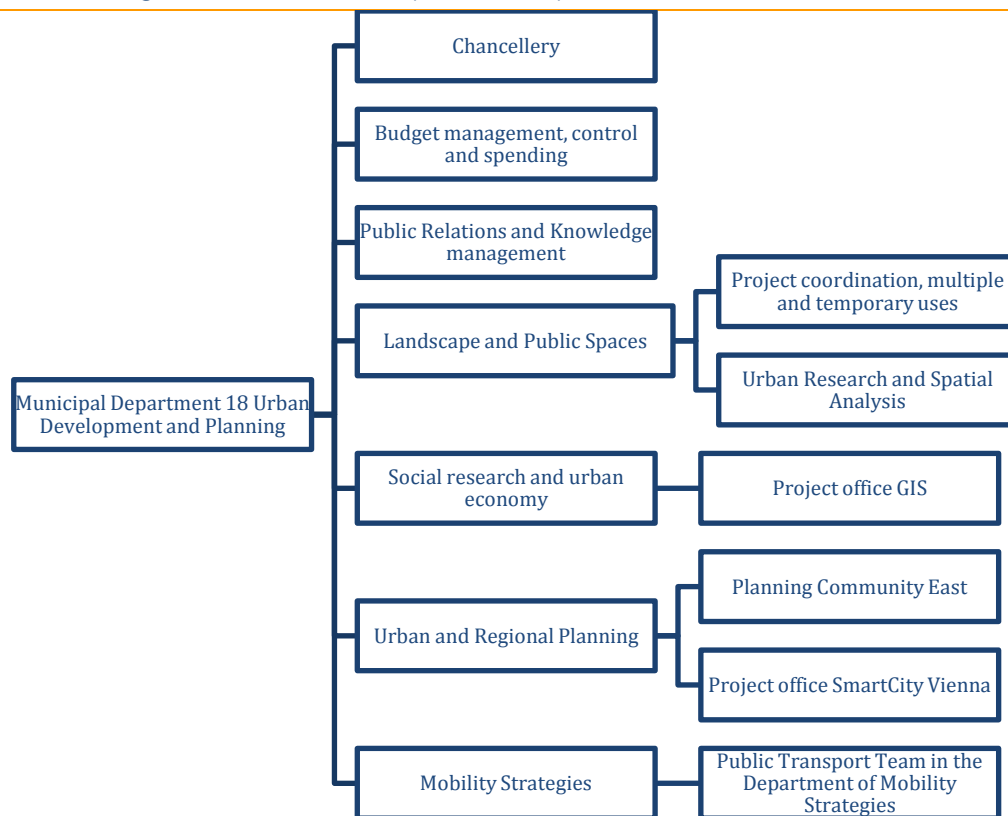
The fact that responsibilities in transport are shared between different departments raises several issues of coordination. In addition to strong administrative autonomy (see above), a second source of fragmentation – horizontal fragmentation - lies in the division of administrative tasks between transport modes at both Federal and subnational levels. A specific person and/or office are responsible for the transport modes that are mentioned in existing master plans. Over the timespan considered in this study, this justified recurring attempts to increase

inter-departmental (and sometimes, within-departmental) coordination. Whilst this task used to be undertaken as part of within-party politics, the growing fragmentation of the political system increased the need to introduce formal coordination mechanisms.

In the case of Vienna, a third source of fragmentation – vertical fragmentation – relates to the organization of funding. Budget is located at district level and subsidized by the city government. There again, weakening forms of political coordination have increased the need to develop new forms of coordination, such as ad hoc commissions for example, or the recourse to citizens through referenda or consultation devices in order to bypass districts' opposition. Moreover, the reform of Vienna's administration (i.e., pensions, number of employees³², etc.) and the reduction of its debt has been a hotly debated topic since the early 1990s.

In this regard, preparatory works for transport plans and concepts have been considered a preferred way to foster coordination within the City administration and with a large variety of stakeholders. *"In Vienna, we have had a number of plans and concepts, and so on. They set goals to be reached 10, 20 years later. It's not so much a matter of being realistic, of course, they often are, but it gives a direction"* (Presentation at CREATE workshop, Paris April 2017).

Graph 2: The Organization of MA 18 (as of 2016)



Source : Stadt Wien (2016d)

In the next paragraphs, Vienna's transport network is briefly introduced together with its overall organization. Each transport mode will then be addressed successively in more detail.

3.5 The Vienna transport network

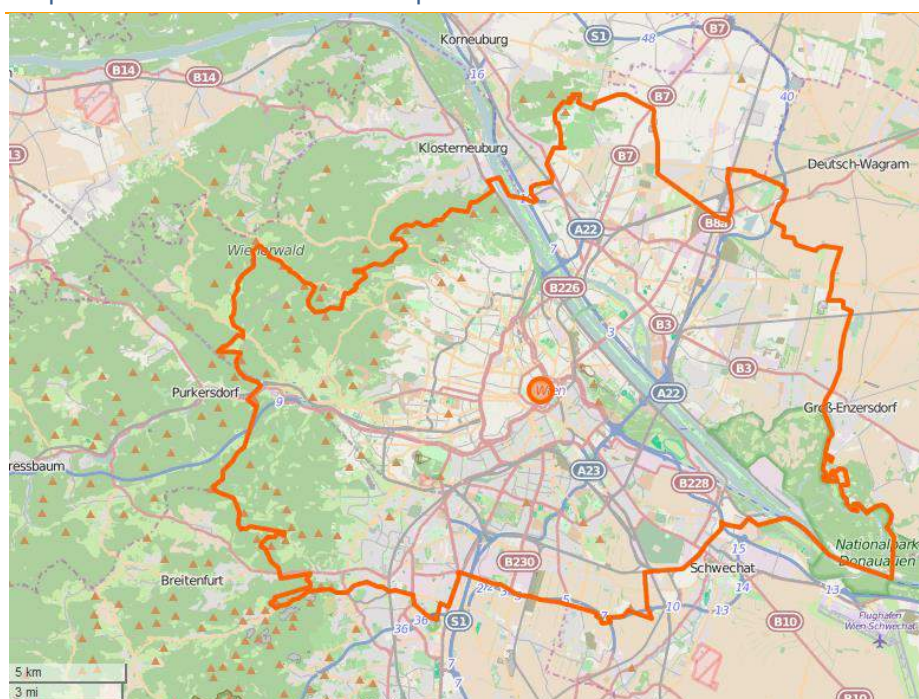
Similar to other large European capital cities, a large share of the Vienna transport network – roads, railways and tram lines in particular – was inherited from the pre WWII period. Both the road and the public transport network have expanded since then. New systems have been developed. Table 1 gives an indication of its current state and forthcoming projects.

³² Estimated at over 65.000 employees

Table 2. The current state of transport networks (as of 2017)

Roads		
	Road network	2,820 km of roads, including: <ul style="list-style-type: none"> - 51 kilometres of motorways (Federal roads) - 222 kilometres of major roads - 2,541 kilometres of minor roads (Municipal)
	Cycle lanes & paths	1298 km
	Motorisation (cars / per 1000 inhabitants)	380
Public transport		
	Railway (regional)	9 suburban lines
	Metro	78,5 km total length, 5 different lines
	Tram	225 km total length, 29 different lines
	Bus	Over 826 km, 115 different routes
Projects (as planned in the 2014 public transport investment plan)		
	Railway (regional)	3 network expansions (east-west axis)
	Metro	Network expansions U1/U2/U5
	Tram	6 line extensions / new projects

Map 4a. Vienna's surface transport network



Source: OpenStreetMap, joint presentation BOKU & City of Vienna, CREATE project September 2016.

3.5.1 The organization of the road network

National Highways plans have been published on a regular basis since 1971, and a clear distinction is made between 3 types of roads, each of them depending on a different planning and management structure:

- National highways (Bundesstrassen)

This includes higher-capacity motorways (Autobahns) and higher-speed highways (Schnellstrassen), which are better fitted with the mountainous topography. The general planning of national highways (Bundesstrassen) in Vienna comes under the responsibility of the federal government, through the Federal Ministry for Transport, Innovation and Technology (BMVIT)³³. Since 1982, they have been built and maintained by

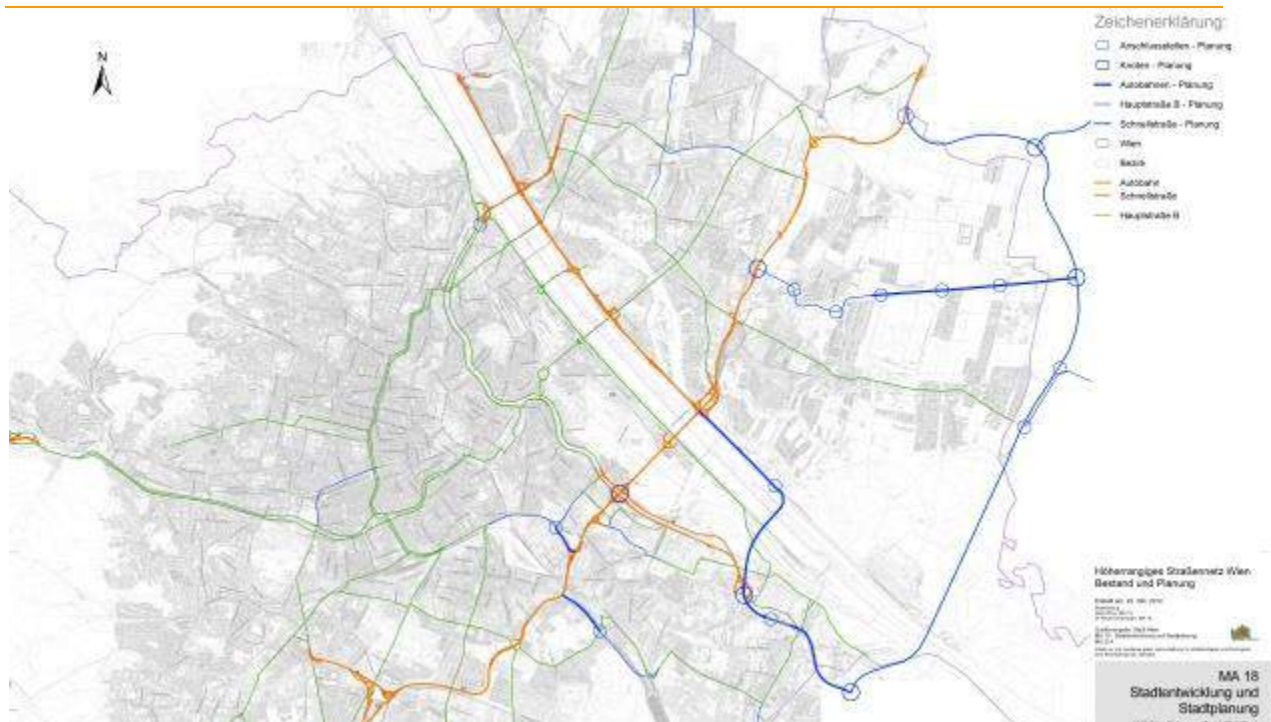
³³ Bundesministerium für Verkehr, Innovation und Technologie

ASFiNAG³⁴, a public-owned corporation in coordination with MA 18 and MA 28, acting on behalf of the Federal Road administration. National highways leave the city in a star-shaped pattern that includes 5 main axes. In addition to the star-shaped highway network, several ring roads were built around the southern and eastern parts of the city. Plans for the national highways network were elaborated in 1971³⁵ and updated on a regular basis since then at the Federal level (National Roads administration in cooperation with City administration). The current plan was adopted in 2002 and regularly updated since³⁶.

- Main roads (Land- or Hauptstrassen)

They fall under the responsibility of provincial authorities, and in Vienna, under MA 18 (planning) and MA 48 (developing). See Map 4b for an overview of current plans for high-level roads (national highways & main) in Vienna.

Map 4b. Main roads network in Vienna, including National highways



Sourc : MA18, Hauptstraßennetz B in Wien inklusive Bundesstraßen A und S – Netzplan. Available at <https://www.wien.gv.at/stadtentwicklung/projekte/verkehrsplanung/strassen/bundesstrassen/> (last consulted January 2018)

- Road network

The largest share of the road network – apart for motorways – is planned and developed under MA 28's responsibility. This includes planning, building, and maintaining road capacity, together with its general administration. It also includes the management of cycling facilities.

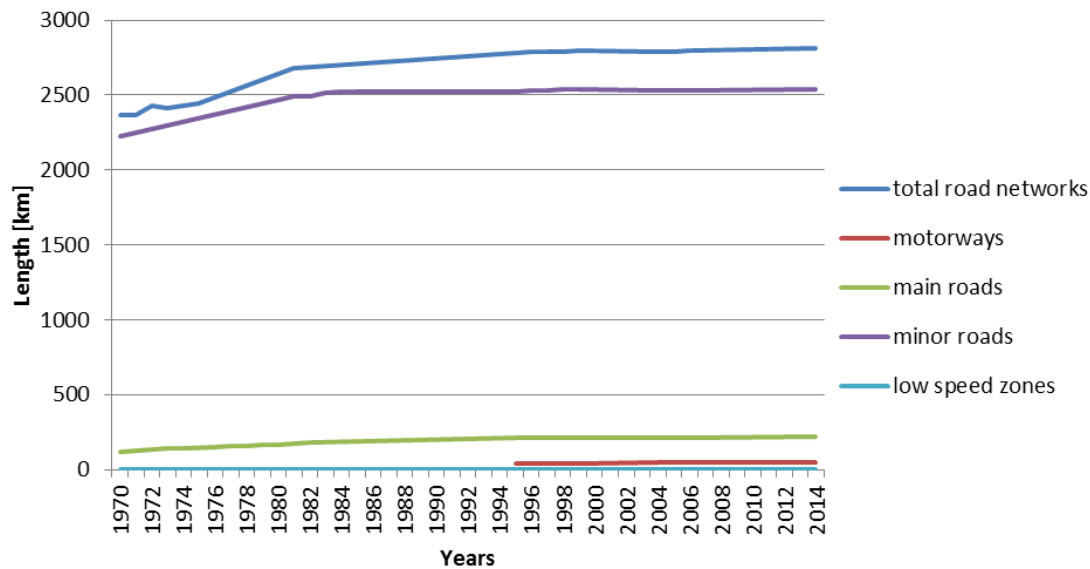
The total length of the road network in Vienna was 2,365 kilometres in the year 1970. Until 1981, the network expanded by 13 per cent, with the total length of major roads being extended by 52 kilometres. Between 1981 and 1995, the total network length grew by 4 per cent and in 2014 the total length of the road network was 2,814 kilometres (see Graph 3).

³⁴ Autobahnen- und Schnellstraßen-Finanzierungs-Aktiengesellschaft

³⁵ Bundesstraßengesetz 1971, formally adopted by the National Council and published in the Bundesgesetzblatt 286/71 on August 5, 1971.

³⁶ Novelle Bundesstraßengesetz 2002, formally adopted by the National Council and published in the Bundesgesetzblatt 50/2002 on March 29, 2002.

Graph 3. City-wide development of length of the road network (not considering the presence of multiple lanes)



Source: Magistrat der Stadt Wien (1970-2014), adapted by and retrieved from Roeder et al, 2016 (D3.2 report).

3.5.2 National and regional Railways

In the case of railways, including the StadtBahn system, the federal government and the transport ministry act as transport authority whereas Austrian federal railways (ÖBB) operate it. Unlike many S-Bahn networks in Germany, the StadtBahn system in Vienna is not a separate rail network. It is integrated with, and part of, the national railway system. It is estimated that ÖBB carries some 25 per cent of Vienna's transport performance through its own railway network within the city's borders. This company's management and service contracts are set at federal level, according to the state's own economic interests. A service contract was signed between the City of Vienna and the ÖBB in order to define their respective obligations.

Additionally, there is a light tram linking the City of Baden with the Viennese city centre (Wiener Lokalbahnen). Both operators are public-owned.

3.5.3 Local public transport

Public transport responsibilities are set at Federal level, as part of a law that regulates local and regional public passenger transport³⁷. Whilst the Federal State is responsible for guaranteeing a basic range of services, the planning of local and regional transport services is under the responsibility of the provinces and local authorities. In the capital-city region, The City of Vienna is responsible for transport planning and the entire urban and regional public transport system, apart from the S-Bahn, has been placed under the responsibility of the Wiener Linien GmbH & Co KG or Wiener Linien since 2001. It is a subsidiary of Wiener Stadtwerke Holding AG, which is owned at 100% by the City of Vienna.

Recent reforms have somewhat contributed to clarify relationships between the city and the Wiener Linien. The organization of public transport is explained in more detail in the following paragraphs.

The city government as main public transport provider until 2001

Following WWII, the city administration and its utilities company, Wiener Stadtwerke, assumed responsibility over the planning and provision of key public services. It was considered a municipal department of the City of Vienna, with each utility organised as owner-operated municipal enterprises. Previously independent public and private transport operators in Vienna were consolidated as one single provider under the banner of the

³⁷ ÖPNRV-Gesetz was regularly updated since its introduction in 1999. The current version was adopted in 2015.

city's utilities, Wiener Stadtwerke-Verkehrsbetriebe. As a subdivision of the Wiener Stadtwerke, it held responsibility for the provision of public transport services.

From the 1960s onwards, public transport professionals and politicians acknowledged the need to invest in the network and associated services in order to maintain and develop a strong non-motorized transport. The first step to move towards a regional approach to transport management in the wider metropolitan area was taken in 1961 with an agreement on fares between the ÖBB and the Viennese transport agency. Subsequent reforms in the tariff structure were introduced at city level, including an integrated tariff structure that included S-Bahn routes. In 1982, time based tickets intended to increase the attractiveness of public transport services were introduced. Their attractiveness resulted from both their price and their width, making it easier to travel across the public transport network. Since then, seasonal and annual tickets were introduced, with approximately every fourth adult in Vienna owning a Wiener Linien annual ticket in 2015 (Stadt Wien, 2016)³⁸.

The reorganization of the city's utilities company in 1999

In 1999, the city's utilities company was reorganized into the Wiener Stadtwerke Holding AG in order to comply with EU regulations on the provision of public services. It became a separate company that was no longer part of the city administration but is wholly owned by the City of Vienna. It operates across public utilities, including public transport. The subdivision for transport, Wiener Stadtwerke-Verkehrsbetriebe, was renamed as Wiener Linien. The City, Wiener Stadtwerke and the Wiener Linien constitute the 3 main stakeholders in planning and developing public transport in Vienna (Kostal et al., 2014, p.20). Relationships between them are bound by a close organisational and economic relationship which is formalised by law.

Wiener Stadtwerke Holding is the parent company and owner of Wiener Linien. As such it can set overarching objectives for its subsidiaries and is responsible for supervising and monitoring their achievements³⁹. Other 100 per cent-owned subsidiaries with a role in public transport also include Wipark, which builds and operates public garages and park-and-ride services, Wiener Lokalbahnen AG, which operates light tram services to the City of Baden (see above) (Wiener Stadtwerke, 2016a).

The **City of Vienna** now acts as contracting authority for transport services in Vienna and exerts, as such, both a direct and indirect oversight over Wiener Linien. It exerts indirect supervision and control over the strategic planning of the enterprise of Wiener Linien through the Wiener Stadtwerke's supervisory board⁴⁰. It appoints Wiener Linien's top managers and provides financing for public transport services. As sole owner of the public transport network, the City of Vienna ensures the overall system's long-term stability in planning and execution of projects. Its main objective is to offer comprehensive connectivity at a low fare price.

Wiener Linien GmbH & Co KG acts as 3rd – and essential – party in this new organizational setting. It is a limited liability corporation, which was formed in 1999 as part of the reorganisation of Wiener Verkehrsbetriebe. It is now a fully owned subsidiary of the Wiener Stadtwerke⁴¹. Following the creation of Wiener Linien, a comprehensive organisational reform was introduced in 2001 in order to ensure output-orientated planning and management, as well as instil a cost-conscious behaviour within the organisation. Since then, Wiener Linien has been tasked by the City with planning and delivering local public transport services. This was formalised in an agreement between the City of Vienna and Wiener Linien, also in 2001 (1st financing agreement, 2001-2016).

Wiener Linien as the city's de facto integrated public transport authority

In practice, the city's tasks are mainly ensured by the Executive City Council and MA 18, headed by Vice-Mayor Vassilikou since 2010. MA18 acts as a link between the policy level and the operator. This

³⁸ See also D3.2 Vienna report and the discussion in Section 4 about the €1-per-day ticket.

³⁹ The managing board of the Wiener Stadtwerke Holding AG has three members in it. One of the members is responsible for the Wiener Linien.

⁴⁰ Of which 4 out of 11 members are nominated by the City Council

⁴¹ All managerial functions are carried out by the three directors and the Supervisory Board consists of six members, 3 of whom are nominated by staff.

administration is responsible for strategic planning functions and determining levels of funding (via the tariff structure).

The current contractual structure means that the strategic policy decisions are made by the City of Vienna⁴². Once the formal decision to develop new routes has been made by MA 18 and the funding is clarified, Wiener Linien takes over the construction and implementation. It deals with the everyday organisation of the transport system, including route planning, service patterns and maintenance (Kostal et al., 2014). Furthermore, it is assumed that the revenue taken in is directly linked to the transport provision offered. In exchange, Wiener Linien provides local public transport and takes on revenue risk. With the exception of some bus services, which are run by the private sector under concessions, the largest share of public transport services in Vienna are provided by Wiener Linien themselves. More precisely, Wiener Linien oversees the following tasks:

- Transport management: timetabling, route planning, coordination and integration across providers, sales and marketing of local public transport across Vienna, operational guidance through control centre and mobile monitoring, development and implementation of quality management
- Operation of the trams, buses and underground railways (metro)

Within this organizational setting, Wiener Linien still enjoys a large degree of autonomy and is very much considered a “state in a state”. For all relevant functions of transport planning and network management, Wiener Linien acts as integrated local public transport authority and operator, under the provisions defined in EU Regulation on public passenger transport services⁴³. It bears the sole responsibility for the quality and quantity of the municipal network. Since the 2001 reform and even more so, since the arrival of the red-green coalition in 2010, relationships between the city and Wiener Linien have been somewhat rationalized and less shaped by the above-mentioned corporatist form of local clientelism.

As of today, it is Austria’s largest local and regional transport operator and the largest employer in the city, with some 8,700 employees. Over the time span considered in this report, a significant reduction of the public transport workforce took place, with some 13,000 employees in the late 1950s down to 8,700 employees since the early 2000s (Kostal et al., 2014, 24). Today, growing differences between employees in terms of labour contracts and social benefits are considered a source of political tension. In 2016, Wiener Linien invested around € 350 million in upgrading public transport infrastructures, of which some € 160 million in metro extensions (Wiener Linien, 2016).

The local public transport network

The current public transport network results from both pre-WWII legacy and developments undertaken since the 1970s. In 1970, the total operating length of the public transport network within the city was 628 kilometres. Wiener Linien now runs the largest transport network in Austria (see Table above), with an aggregated length of almost 900km and a total of nearly 4,500 stops and stations. More than 2,000 vehicles with a total capacity of almost 260,000 passengers run on 126 lines. Each day 2.5 million passengers use the Wiener Linien network of over 1000 kilometres (Wiener Stadtwerke, n.d.)

The public transport network consists of the following systems:

- The City inherited a well-established tram network from the pre-WWII period
- The U-bahn system or metro opened incrementally since 1978
- The Bus network: the largest share of the bus network is operated by Wiener Linien themselves whereas about one third of all seat kilometres and half of all the bus lines are operated by the private sector. These privately-operated services are predominantly on the outskirts of the city.

Vienna also boasts a public transport modal share of 39 per cent, being the most popular travel option over cars (27 per cent), bike (7 per cent) and walking (26 per cent). Substantial line network extensions took place since the 1970s, as well as some investments aimed at separating the tram and the bus networks from road

⁴² See below, about funding arrangements.

⁴³ Regulation (EC) No 1370/2007 of the European Parliament and of the Council of 23 October 2007 on public passenger transport services by rail and by road and repealing Council Regulations (EEC) Nos 1191/69 and 1107/70

traffic: in 1990, this concerned respectively 52 per cent of the tram network and 3 per cent of the bus network, and in 2013, 76 per cent of the tram network and 9 per cent of the bus network.

3.5.4 Cycling and walking

The development of cycling infrastructures took up in the 1980s, starting with a network of 11 kilometres. The network expanded from 1980 onwards, until it amounted to 388 km in 2000, consisting of 22 per cent cycle paths, 51 per cent cycle lanes and 27 per cent cycle routes (Magistratsabteilung 18, 2002). Its development as a transport mode was encouraged since the early 2000s, with the extensive development of the cycling network, which now amounts to a total length of 1,298 kilometres.

The main priority has been the closing of network gaps, still underway as of today. This was achieved by introducing two-way cycling lanes on one-way streets. Furthermore, a CityBike service was introduced in 2003. This public-owned bike rental system aims at increasing the use of cycling among residents, in a context in which only 58 per cent of households owned at least one bicycle in 2003 (or 591 bicycles per 1,000 inhabitants). A total of 1500 bikes are available at 150 terminals located throughout the city. A specific set of traffic rules was introduced for cyclists (Strassenverkehrsordnung, StVO) under the responsibility of the Cycling infrastructures Office (Projektkoordinator für Radfahrinfrastruktur), within MA 46, and since 2011, the Mobility Agency was set up in order to encourage and support the development of cycling and walking.

Nevertheless, the use of cycling in mandatory trips remains low and mainly devoted to leisure trips (Interview Mobility Agency, February 2016). In 2010, 61 per cent of households owned at least one bicycle (or 627 per 1000 inhabitants)⁴⁴. As part of its current transport strategy, the city seeks to increase the attractiveness of cycling by:

- Optimising cycling facilities and infrastructures through new technologies: Establishing cycling corridors and green wave systems; a smartphone application, called "BikeWave", in order to help cyclists adjust their speed to the current light signal cycle to minimize waiting at traffic lights and actively generate an individual green-wave (Schönauer, 2015).
- Enlarge the cycling network
- Increase comfort through investments on road space: cycling lanes on one-way streets, at bus stops, bike parking facilities
- Develop long-distance routes

As of 2012, the City's Mobility agency also seeks to highlight the role of walking and encourage its development⁴⁵. This will be further addressed in Section 4.

3.5.5 Regional cooperation in public transport planning and services

The "Verkehrsverbund Ost Region" (VOR) is responsible for planning public transport services in the Vienna region. As of today, it covers an area of 23.563 km², 3.7 million inhabitants and 745 municipalities. It is jointly owned by three provinces: Vienna, Lower Austria and Burgenland. In its current form (2002, see maps 5a and 5b), the VOR results from a long history of cooperation at regional level and counts as one of the most institutionalized form of regional cooperation that reaches far beyond the metropolitan area.

Drawing on developments underway in German and Swiss cities in the 1970s⁴⁶, a formalized cooperation platform was created in 1974 under the name Verkehrsverbundorganisationsgesellschaft m.b.H (VVO). Yet it took another decade, until 1984, for the regional transport association VOR to start operating with the support of ÖBB who selected the capital-city area as a preferred location for experimenting with a region wide integrated approach to transport services. A first agreement was reached with transport companies in the

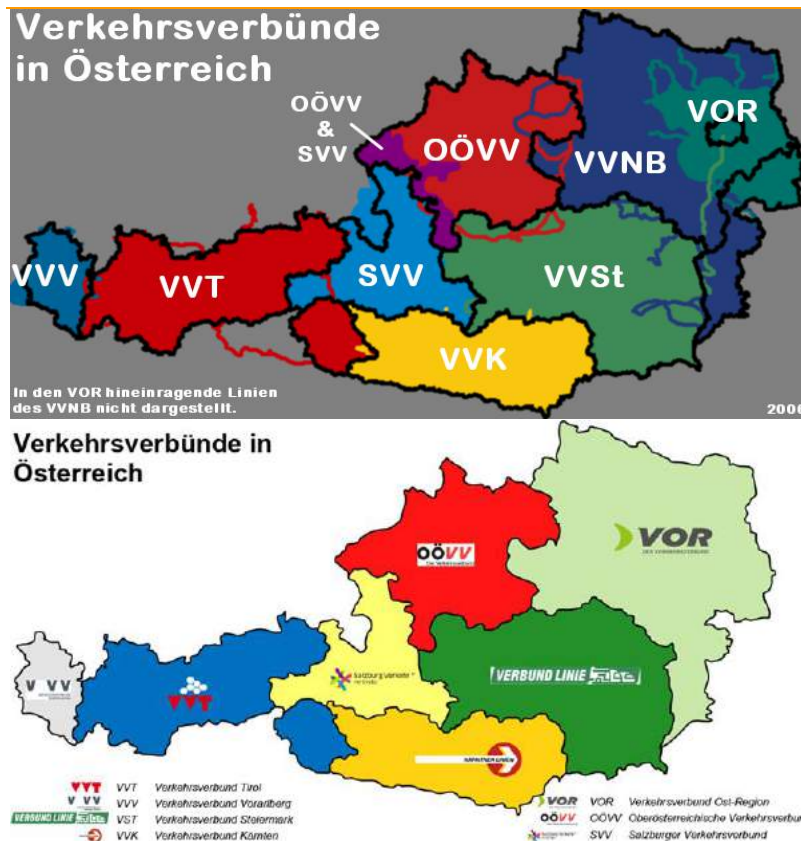
⁴⁴ See the latest annual report of the Mobility Agency (2017), also available here : https://www.mobilitaetsagentur.at/wp-content/uploads/2017/04/MOBAG_Jahresbericht_2016_RZscreen.pdf (last consulted April 2018).

⁴⁵ See the latest walking report by the Mobility Agency (2015), https://www.wienzukunft.at/wp-content/uploads/sites/3/2016/09/2015_Wien-zu-Fu%C3%9F-Report_Vienna-Walking_WEB.pdf (last consulted April 2018).

⁴⁶ See D4.2 Berlin report. See also Buehler et al., 2017 for a comparative overview with Berlin, Hamburg, Munich and Zurich.

province of Lower Austria and sought to integrate rail and U-Bahn services at first, whereas bus routes were included in the integrated fare structure in 1987.

Maps 5a & 5b. Integrated transport authorities in Austria before and after the transport associations' reform in 2002



Source : BMVIT, ©Wikimedia

In 2002, it was agreed as part of the federal led reform of regional transport associations that VOR would merge with the adjacent Verkehrsverbund Niederösterreich Burgenland (VVNB) in order to include a larger share of Vienna's functional urban region (Bundesministerium für Verkehr, Innovation und Technologie, 2016). Both transport associations jointly committed to coordinate fares, ticketing systems, routes, timetables and interchanges with the intent of providing the user with a seamless a journey. This regional organization coordinates the work achieved by 40 transport companies across some 900 public transport routes, including railways and bus lines and now logs over 1 billion passenger journeys a year. The Wiener Linien's network constitutes the backbone of the VOR's transport system and carries 90 per cent of the trips made on the VOR network. Its main goals are defined as follows: "VOR's objectives are to offer comprehensive, integrated, multimodal mobility by working with the various transport operators and political actors involved in delivering that. Beyond this, the VOR sees itself as playing a key role in shifting towards more and efficient, environmentally sustainable travel." (VOR, 2016).

Over time, it contributed to simplifying and integrating the fare structure across the network. A reform in the tariff structure was introduced in 2016 for the first time since 1984. More precisely, passengers now pay for a multimodal fare from their start point to their destination, which is calculated based on a combination of the route, distance and jurisdictional boundary (Ibid.)

3.6 Transport funding

The federal government and the City of Vienna jointly contribute to transport funding, both in terms of capacity investments and services. The City of Vienna ensures the largest part of transport funding in Vienna.

The Federal government contributes to the funding of the national transport system through its car and fuel tax systems. It oversees the funding of all transport networks, which are under its responsibility, either through its own budget or through its agencies and public-owned companies (ÖBB, ASFINAG, etc.). It also

contributes to the funding of transport capacity investment in Vienna within the framework of the Austrian Fiscal Equalisation Law⁴⁷ and to small-scale transport investments, programmes and projects in Vienna as in other Austrian cities. It should be noted, however, that the funding structure at Federal level tends to underestimate the specificity of transport congestion and pollution in urban areas (OECD, 2003).

A more detailed overview is given here for public transport. The role of the private sector is marginal.

Public transport financing

Until 2001, cross-utility financing allowed for electricity and gas rates to cover for the local public transportation system. Wiener Linien, and its predecessor Wiener Stadtwerke – Verkehrsbetriebe, ran an operating deficit. Despite being cross subsidised from the Wiener Stadtwerke family, external financial resources had to cover investment. As a result, debt levels for the Wiener Linien had been rising (OECD, 2003). It did not achieve full cost recovery from fare revenues. In the late 1990s, the cost recovery ratio was around 50 per cent (Kostal et al., 2012).

Following EU regulation on public services, cross subsidies have been strictly limited and the funding of urban transport is now organized as part of a financing contract between the City and Wiener Linien (*Finanzierungsvertrag*). Financial compensation is granted to Wiener Linien for public service obligation fulfilments as defined by the City of Vienna, such as running the service at a given quality level, service frequency or route plan. Unlike other cities in WP4, where local public transport contracts are defined on a short-term period – 4 to 5 years – in order to allow for regular negotiations to take place and adjustments to be introduced, the choice was made to prefer 15 years long contracts.

The first financing contract between Wiener Linien and the City of Vienna was signed in 2001 for the 2001-2016 period. It stipulated that the provision of local public transport services had been delegated to Wiener Linien, together with relevant financing arrangement with respect to capacity development and operation. More precisely, the 3 following strategic goals were set for the 2001-2016 contracting period:

- Increasing the modal share for public transport
- Increasing cost-effectiveness
- Guaranteeing the provision of high-quality services

The “funding formula” stipulates that some 60 per cent of Wiener Linien's costs are generated by the company itself, with further financing provided by the City of Vienna. The public transport system remains heavily subsidized in order to ensure the lowest possible prices. The supply and service quality are on a very high level, which reflects on ridership and public transport modal share. Subsidies for operation or reduced tariffs (e.g. students) are financed either by the responsible Federal ministry or the City of Vienna.

More precisely, Wiener Linien has two income streams:

- Transport revenues, which include compensation from the City of Vienna and the Federal state⁴⁸ motivated by distributional goals and social policies. This includes support to school and further education students.
- Subsidies from the City of Vienna

Over this time period, the City of Vienna grants Wiener Linien a negotiated lump sum (e.g., €256m in 2012), to cover the shortfall between operating costs and revenue intake (Kostal et al., 2012). Operational subsidies from the city have remained constant – some 29 per cent -, but fare revenues have been rising since 2001 and added up to about 60 per cent of the total revenue in 2016. Furthermore, even though the operating budget has stayed constant, investment subsidies for capital projects like the underground expansion have been rising. Half of the costs of all new underground railway developments are covered with Federal subsidies, and in 2016, the total amount spent for investments amounted to some €320 million.

⁴⁷ The latest reform was adopted in 2008. For an overview, see OECD (2012)

⁴⁸ This is mainly achieved through the two following conduits: Family Burdens Equalisation Fund and Fiscal Equalisation Law.

The changes brought onto the public transport network during the first contractual period (2001-2016) (see below) have been assessed as follow (Wiener Linien, 2016):

- The Metro network grew by 18 kilometers (expansion U1 and U2)
 - Night services were introduced on the metro and the service was reorganized on the bus network
 - 2 additional tram routes, rehabilitated stations and routes
- The number of annual season tickets sold more than doubled to more than 650,000, with passenger numbers up more than 25 percent to €931 million. The share of public transport in the modal split has increased since 1993 from 29 percent to 39 percent

Details about the next contracting period (2017-2030) were made public in 2015. It follows the same “funding formula” than during the previous contracting period. Main differences are linked with increased quality criteria, regarding punctuality, cleanliness, customer satisfaction, safety and accessibility.

3.7 Concluding remarks, main drivers for policy change in Vienna

When considering the potential drivers of transport policy change over the time span considered in this report, macro factors such as demographic and socio-economic changes have influenced transport priority settings as well as the selection of policy solutions. Yet the Vienna case is also characterized by high levels of institutional, political and organizational stability. Nevertheless, some turning points – or so-called “focusing events”⁴⁹ - have been highlighted in this section:

- Organizational changes, related to the public transport reform in 2001
- Political changes, related to the need for the social-democratic party to enter coalition governments, especially with the Green Party since 2010
- The EU enlargement, in 1995 and in 2004, might have opened additional sources of constraints, related to the *acquis communautaire* on the one hand, and on the other hand, new opportunities for developing and funding transport infrastructures and policies for goods and passengers in order to address increased cross-border relationships with neighboring member states.

Furthermore, some potential sources of political, organizational and institutional competition have been highlighted in relationship with:

- A potential overlap between administrative departments during transport policy-making and implementation, and the need for coordination mechanisms within the city administration and between politicians and bureaucrats in order to streamline strategic transport policy goals across modes.
- An inter-institutional coordination between levels of government – Federal, City, Districts – in order to ensure the provision of policy resources, including funding, regulations (safety, etc.), and some level of vertical coordination in transport policy priorities at implementation stage.
- The evolving relationships between the City of Vienna and Wiener Linien. We can assume that workers’ unions and within-SPÖ politics played a critical role in ensuring coordination between the setting of transport policy priorities and their operationalization until 2001. We expect this influence to have weakened as a result of the reorganization of the public sector, the liberalization agenda at Federal level, and the changed political context in Vienna.

⁴⁹ Following the work done in policy studies, focusing events can be understood as sudden, rare, and harmful events, which can influence the policy process (Birkland, 1998).

4 Historical transport policy developments: policy objectives, resources and measures

This section examines the concrete way through which specific combinations of drivers of change have shaped transport policy developments in Vienna. This is done by analysing the historical development of policy objectives, resources and measures since 1968. The main argument relates to the critical role played by evolving relationships between pro-public transport and pro-car coalitions in shaping transport policy developments in Vienna. This relationship is shaped by a combination of macro-dynamics (Oil crisis, demographics), external pressures (Federal and EU legislations, environmental mobilizations) and evolving forms of urban governance in Vienna (political competition, influence-seeking strategies).

Four sequences are introduced successively: First, the emergence of the car-oriented city model and its rapid diffusion in the context of the post-WWII reconstruction (stage 1); Second, the development of a traffic mitigation policy agenda at both the federal and the local levels, which resulted in a renewed interest for public transport (metro project) and urban design initiatives in the historic centre (stage 2); Third, a new consensus is reached between pro-car and pro-public transport advocates in 1991 aimed at restricting car use through parking management while at the same time supporting the development of added capacity in public transport. In the fourth section, recent attempts at developing a “green alliance” and reducing car use are discussed in more detail, together with future challenges in a changed political and regional context.

Overall, the analysis of transport policy developments in Vienna demonstrates, on the one hand, the shift towards the “Planning for people” types of policies (stage 2) and as of recent, the “Planning for city life” (stage 3) policies, and confirms on the other hand, that this process is neither categorical nor is it evenly spread.

4.1 The car-oriented city model: slow emergence (pre-WWII) and rapid development (1945-1968)

Most of Vienna's current characteristics in urban planning and transport result from the choices that were made during the second half of the 19th Century. It was, at that time, the affluent capital of the Austro-Hungarian Empire and experiencing significant demographic and economic growth. During those years, the city extended its administrative borders through the incorporation of outer districts, and successive urban development goals recognized the need to protect the city's green belt. How the city developed then is important because the legacy transport infrastructure that forms the backbone of today's transport system shaped the city's development during subsequent decades together with the aesthetics and the built environment (Interview transport expert 1, March 2016). Furthermore, whilst car-oriented planning became dominant, politicians and planners maintained a strict differentiation between developments in the urban core, meant to preserve this heritage of national significance, and developments in the rest of the city, where the dream of a modern city justified the rapid development of car use.

4.1.1 The triumph of municipal socialism (pre-1938 period)

Vienna reached its height between 1880 and 1890. By then, the number of inhabitants increased from 726,000 to 1,365,000. In 1910, it reached 2,031,000 inhabitants in 1910. Following the 1848 revolution and the transfer of landlords' administrative and judicial rights to government institutions, namely the City Council, large-scale urban developments were introduced in order to transform Vienna into a large, modern metropolis. This includes the first city's expansion by incorporation of the suburban zone: the Ringstrasse was built alongside the former the fortifications, marking a clear distinction (also known as the “Gürtel”) between the inner city and the outer suburbs, and the city districts were created. Rapid urban and economic growth justified the incorporation of new areas located south and north from the Danube, including those districts such as Floridsdorf where machine-manufacturing industries were located. Major social differences within the city were particularly exacerbated during this period, with higher income families concentrating in parts of the inner-city districts (e.g., Wieden, Josefstadt) and some of the outer suburbs. Recurring attempts to destroy the “Wienerwald”, a large area of wooded hills in the north-eastern part of the city and a favourite recreation area among the Viennese population, were abandoned due to the population's protest.

Developing urban infrastructures and networks

The preparation of large international events, such as the 1873 world exhibition, accelerated the development of utilities networks and services through private funding until the late 1890s. **The municipalisation of urban infrastructures and networks, in the 1890s, offered an opportunity for extending them citywide.** Revenues from energy and transport services allowed development of a large number of public policies and infrastructure projects, including roads, streets and public transport. Following Otto Wagner's 1890 urban development plan, the urban and regional transport system was particularly influential in structuring urbanization dynamics through its three main components. Moreover, the city's stronghold over the development of public transport networks and services considerably increased after 1902, when the transport network and entire rolling stock was bought from privately-owned transport companies prior to establishing the City of Vienna-City Tramways⁵⁰. Bus services were incorporated after 1922.

First, an extensive and comprehensive tram network - operated at first by horse carriages and then electrified - was built alongside the former fortifications, in order to address local transport demand. This high quality public transport encouraged the development of a compact city around it, especially in the urban core. Furthermore, the origins of the idea to physically separate the tram network from the street network at busy intersections can be traced back to 1885. One of our interviewee mentioned the following driver for change: *"In part this was a competitive streak to keep up with other European capital cities who were building underground rail and elevated rail"* (Interview transport expert 1, April 2016, TbNB⁵¹). Second, a rail-based metropolitan system (Stadtbahn) that ensured the connexion to the suburbs. It followed a star-shaped system with 5 main branches, connecting each line to one of the city's five termini. Around the turn of the century, a connecting railway that, like the case in London, sought to connect the different rail termini was planned and the tram network was electrified. Even though its main purpose was military, it was also considered a first attempt to create a higher-level public transport network for the city. According to original plans, the Stadtbahn system should have been much larger, including cross-city connexions, but these plans were abandoned due to financial constraints. Nevertheless, it influenced the urban structure in terms of the overall distribution of workplaces and industries that heavily depended upon this transport system. Third, the city was connected to long-distance transport through five large railway stations.

This extended public transport network together with rapid population and urban growth encouraged patronage growth as well as mobility demand. Until WWI, the tram network set the border of Vienna, which developed as a compact city with extensions around major transport axes.

Red Vienna and the emergence of a strong urban governance model

The fall of the empire and the creation of the Republic of Austria had a considerable impact on the city's status, and from then on, it was considered too large a metropolis for a much smaller country. Furthermore, the interwar period was marked by economic stagnation and population decrease. Several factors contributed to strengthening Vienna's specific status within the Austrian political, institutional and transport system. First, Vienna and Lower Austria became two separate provinces and due to the federal system local transport planning was split between the provinces, except for national roads and the main railways. In this context, the city benefited from increased autonomy in urban planning and policy-making. Second, the separation between both provinces also accelerated the election of a social-democratic majority – by contrast to majority in place in Lower Austria – and the strengthening of a municipal-led welfare state model that became known as "Red Vienna", that is a corporatist form of clientelism in which the provision of municipally-owned social housing and public services was traded for political support (Novy, 2002, 136). In this context, the city was strategically used by the ruling party as a showcase for the social-democratic project worldwide, including a strong welfare state and a large number of policies and services (e.g., housing, social policies, etc.).

During this period, **what remained of private initiative and funding in the provision of services, utilities and policies was municipalised.** Large-scale urban regeneration programmes were developed in the old, historic districts and low-density urbanization was encouraged in outer suburbs in order to increase the quality of housing and ensure greater access to recreation areas. The Stadtbahn network was transferred to the

⁵⁰ Stadt Wien-Städtische Straßenbahnen

⁵¹ TbNB stands for Translated by Nicole Badstuber.

city's jurisdiction (1924) and transformed into a public transport network. Its electrification (1925) and inclusion in the urban tramway fare structure were instrumental in making the service more attractive. In this context, city planning in Vienna very much remained orientated around public transport and private car ownership did not grow as rapidly as it did in other Western European cities.

4.1.2 Emergence and diffusion of the car-oriented city model (post 1938)

The car-oriented city model only became dominant after 1945, but its premises can be traced back to the pre-war period. Motorized transportation became more popular and visible in the city during the pre-WWII period, as more and more roads were properly paved. The car-oriented city model received additional support from the mid-1930s onwards, from those opposing the social-democratic party and investments in road infrastructures were encouraged as part of the national government's strategy to reduce unemployment and poverty. This pro-road policy was continued during the Nazi occupation for strategic reasons, and motorized mobility was also encouraged through the obligation to provide parking lots, if new buildings were constructed. Furthermore, during Nazi occupation, Vienna was amalgamated with surrounding districts, covering an area nearly five times greater than before 1938 – from 27,805 to 121,541 hectares – and including almost all of Lower Austria. Bus services were extended and car ownership was encouraged.

Reinventing the “modern city” in the post WWII era

During the immediate post WWII era, the primary goal of the city government was to rebuild the city, repair utilities and transport networks, and use vacant plots to rebuild the city. A large proportion of the city's housing stock and infrastructure had been destroyed. Reconstruction was delayed due to a number of constraining factors, also accounting for a slower uptake in car use than in other Western European and Northern American cities. First re-urbanization was quite slow and from the 1960s onward, suburbanization took up while population declined within the city's borders⁵². Furthermore, the economic development of the city was inhibited until 1955 because of the Soviet occupation and the uncertainty of Austria's status. Second, in the absence of an agreement on the city's precise border, the development of a coherent land use plan at city-level was stalled. Following the City's restoration into its pre-1938 borders, a decade-long process of negotiations with Lower Austria and those towns and areas located close to the capital started until the matter was effectively settled, and no progress could be made on implementing any of the dispositions enclosed in the Land use plan (Pirhofer & Stimmer, 2007).

The social-democratic party retook political leadership over the city in 1945 and kept it from then on. Drawing on pre-Nazi occupation priorities, urban planning was considered a symbol of regained independence and democracy as well as pressing necessity. Debates about urban planning highlighted the emergence of a new understanding of what was considered a “modern city”. The combination of war destruction was not to the extent it had been in German cities, and the concerted effort made in the post war year to recreate the historic city meant that Vienna still relied on a pre-war compact urban foot print and legacy transport infrastructure routes. Yet the goal of a modern city increasingly clashed with the urban structure created in the 19th century and with efforts to preserve the historical city scape and architecture. In this context, reconstructing the city offered an opportunity to make the vision of a modern – meaning functional, less dense – European capital come true, including developing an up-to-date housing stock and making increased space available for car traffic flows. The repair and reconstruction of damaged structures took place alongside the demolition and construction of new ones. These contradictions are visible in post-war urban and transport planning documents.

Making the “modern city” come true: housing and transport

In those years, housing was considered the top priority and very much at the centre of the first post WWII land use and urban development plan⁵³. Drawing on existing legislation, this document, entitled “8-point programme for social city building”, sought to ensure strong public leadership over land use and housing development. It was formally adopted in 1952 as the city's urban development plan and highlighted the two

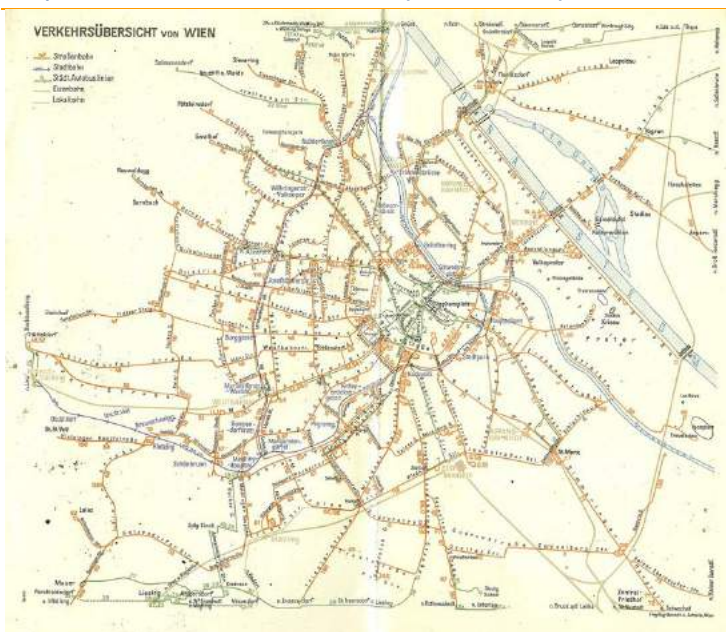
⁵² See Section 3

⁵³ Developed between 1948 and 1951 in relationship with the city planning department.

following priorities: all flats had to be equipped with a bathroom and the minimum size requirement⁵⁴. In order to do so, the plan suggested reducing residential density in the inner-city and developing new urban areas between 30 to 60.000 inhabitants in outer districts. Drawing on the pre-WWII urban growth model, the largest share of housing developments was undertaken by the city itself or through housing corporations in order to encourage private ownership. New urban residential settlements offered a vision of modern, lower density living (Pirhofer and Stimmer, 2007)⁵⁵.

The setting of new urban development priorities also had some implications for transport. At first, with the largest share of resources being allocated to reconstructing pre-war networks, little room for manoeuvre was left for implementing new ideas. Railway networks were reconstructed with the support of the federal government. Furthermore, local authorities encouraged the selective reconstruction of the pre-war transport network. By 1949, the war damage to the transport infrastructure bar one route had been repaired. Many segments and stations of the Stadtbahn network were not reconstructed due to financial constraints and to the city government's lack of autonomy⁵⁶. Utility companies (Gas, electricity, and transport) were consolidated as part of one single utility company, the Wiener Stadtwerke. **Nevertheless, the development of car-based city planning very much dominated urban discourses.** Local politicians, particularly within the SPÖ, associated the use of cycling, and to a lesser extent, that of public transport, as a transport mode with poverty and pre-modern city life⁵⁷. The expansion of the road network became the pillars of the city's master plan. A considerable share of public space was to be allocated to motorized transport, including the development of elevated highways without junctions (Hachleitner et al., 2013, 131). Yet, the plan's formal adoption was adjourned until the country recovered its autonomy in 1955 and was granted some financing support for reconstruction under the Marshall Plan. Furthermore, city-led population resettlement outside the inner-city area and the priority given to motorized transport met with some socio-political resistance at first.

Map 6a. Overview of Vienna's public transport network in 1953



Source : <http://www.deacedemic.de>

⁵⁴ In 1952, 15.5 per cent of the budget was spent on building new homes, and in the next two decades, thousands of flats were built every year according to these principles (see section 3).

⁵⁵ Opportunity areas were designated north of the Danube as well as in South Vienna along the Lager Berg in District 10. New buildings of significance were planned outside the inner-ring road, such as a conference centre for sports and culture in the 15th district.

⁵⁶ By 1951 the new Westbahnhof opened with the Südbahnhof following in 1953.

⁵⁷ Alongside public transport, cycling was commonly used as a transport mean in Vienna, mainly for short distance trips.

As Vienna entered a period of economic growth and prosperity, post-war thinking gained additional support and pro-car policies were introduced at full speed as part of the city's efforts to rebalance urbanization trends and transform the urban layout inherited from the 19th century. Together, these developments accelerated the shift away from the 19th century compact city model towards a more dispersed urban form with lower density levels and which development was facilitated by private motorization.

4.1.3 Car-based mobility: overview of major transport policies (1954-1979)

The principles laid out for city planning in 1952 and the search for lower densities shaped transport policy developments until the late 1970s. Successive generations of social-democrat leaders, technicians and policy-makers, pursued a strategy aimed at reducing pressure on the inner-city while at the same time containing low density urban development in the outer districts. Successive policy documents, including the 1961 zoning plan, confirmed the distinction made between the need to preserve the historic city centre and that of building the modern city. This was achieved by favouring polycentrism and strengthening new urban centres.

Rising travel demand and urban expansion

Transport policy solutions were discussed in a context of rising travel demand and urban expansion. At the time, Vienna was struggling to cope with the 140,000 cars already on the street and road network. By then, the effects of growing car traffic were noticeable, especially in terms of safety issues, and encouraged the development of added capacity and investment in order to accommodate car use. Within the city administration, the expectation was that car ownership and usage levels were set to increase, and the authorities thus planned for a vision of full motorisation with an anticipated 300,000 to 400,000 cars on Vienna's streets by 1975. A different approach was applied for road building. In a context of low demographic and economic growth, no inner-city demolitions were needed for road building and already existing large boulevards were rapidly transformed in order to accommodate traffic flows. The transport network in the densely populated inner core did not change much in comparison with the network inherited from the second half of the 19th century. Yet accommodating larger flows of car traffic also led to segregating road space uses from other transport modes. Moreover, the largest share of road building took place at the city fringes and in the wider metropolitan region. Car registration numbers exploded from 22.000 to just fewer than 400.000. **The automobile was now considered a dominant mode of transport and a symbol for overcoming the disaster of war times.** Pre-war policies were re-enacted in order to support the development of car use, including the priority given to the construction of roads and the development of parking places. An arterial road system including inner-city motorways was developed, with the first section of the inner-city motorway opened in 1970 (*Südosttangente*). This approach was consistent with transport policy priorities and existing plans at Federal level, as laid out in the proposed plan for Federal motorways published in 1971⁵⁸.

By contrast, the dominant role of the automobile proved detrimental to cycling, which was not of great importance to the city government and successive city planning documents until the 1980s⁵⁹. Cycle ownership and use was only encouraged as part of leisure activities and sports. This also applies to a lesser extent to public transport. As per an interviewee: *"The opinion was that public transport was a thing of the past and would be retired in due course"* (Interview transport expert 2, February 2016). As the urban public transport system was not able to meet this demand due to ageing rolling stock and infrastructure, many passengers chose to use the private car to meet their transport needs. Patronage numbers dropped in particular for commuting in Vienna's rapidly urbanizing suburbs on both sides of the city's borders.

Continued competition from alternative transport modes

In the absence of a coherent transport policy approach, the 1952 Urban Development plan gave sufficient room for manoeuvre to both pro-car and pro-public advocates to shape future policy initiatives. In practice, the largest share of resources and finances were devoted to road investments. Nevertheless, **the prevalence given to car-oriented policies (stage 1) did not lead to the complete dismantling of other**

⁵⁸ Formally adopted in Bundesgesetzblatt 286/71

⁵⁹ See also D3.2 Vienna report, p.24.

transport policy types. This first applied to the inner city, where some restrictions to car use were introduced in order to preserve its historic legacy: short-term parking zones were introduced in the 1st district in 1959, and progressively extended to other districts in stages. At that time, parking zones were limited to individual street segments and smaller areas (Magistrat der Stadt Wien, 2016b), according to levels of residents' complaints (Interviews transport experts 1 and 2, March 2016). Furthermore, following a trend observable at Federal level, traffic mitigation policies were increasingly framed in relationship to safety issues. Pedestrian crossings were installed but other ideas under discussion at this time, such as traffic speed reduction and giving priority to public transport that is, buses over cars in the inner centre, were not implemented. Similarly, as part of its strategy to strengthen public transport and ease access between public transport networks, the national rail company ÖBB actively reached an agreement on fares with the Viennese transport agency in 1961.

In other words, alternative transport modes were accommodated insofar as they were compatible with the rapid development of mass-transit. Little attempt was made to strengthen the urban dimension of public transport. Insufficient financing measures and subsidies led to the steady reduction in service provision, network coverage and service frequency, which triggered a vicious cycle of reduced public transport provision and increased popularity of the private car (Interview Transport expert 2, February 2016). Large segments of the tramway system were dismantled in order to allow sufficient road space for car traffic. Some tram routes were replaced with bus services, and in the case of other tram routes, it was suggested to transfer tram routes below the ground in order to allow car traffic to flow. Throughout this sequence, the idea of developing a metro system was regularly pushed on the urban political agenda by the Conservative Party, but systematically dismissed by the ruling majority as utopian⁶⁰.

Map 7. Overview of proposed Federal motorway network for Vienna in 1971



Source: MA 18, MA 48, Freytag & Berndt, available at: <https://www.wien.gv.at/stadtentwicklung/projekte/verkehrsplanung/strassen/bundesstrassen/bundesstrassen-1971.html> (last consulted, January 2018)

At the same time, the tram network was never completely dismantled. The resistance of residents and politicians prevented such a radical change taking place. Within the SPÖ itself, transport remained a hotly debated topic between pro-car and pro-public transport advocates. As explained during an interview with an expert: *“Given the SPÖ’s undisputed hegemony, one would expect a continuity in the political direction but that was not the case. The quarrel was played out within the party – which put on its own show in which the opposing*

⁶⁰ Proposals for a metro in Vienna can be traced back to the late 19th century. Concrete plans for a metro were articulated in 1910 but as WWI broke out, the project could not be financed.

transport ideologies played out. The push for creating a car-centric city was mellowed by the fact that much was still done for the public transport network” (Interview transport planning expert 1, March 2016, TbNB).

4.1.4 Concluding remarks, Stage 1

The diffusion of the car-oriented city model and that of the automobile emerged during the 1920s. In the post WWII context, it expanded as a result of both national and local policies. Some of the choices that were made during this first sequence have, since then, become a characteristic of Viennese transport policies. First, differentiated approaches were used in the urban core, where the historic legacy was meant to be preserved for patrimonial reasons, and in the rest of the city, where post-war reconstructions and urban growth agenda encouraged new residential and housing developments. Second, even though car-oriented policies emerged as the backbone of the city's post-war transport network, this didn't prevent the reconstruction of public transport networks with the support of the Federal state and in the context of cross-utility financing.

4.2 The art of non-decision: overground versus underground transport (1968-1991)

Under the joint pressure of macro-economic dynamics and federal legislation, transport policy priorities shifted away from a car-dominant approach towards a more integrated approach that offered some room for manoeuvre for developing public transport initiatives. This process was incremental and not without contradictions. It was mainly driven by shifting federal transport policy priorities and some concerns at city level due to increasing daily commuting traffic from adjacent municipalities. Throughout this transition period, car traffic growth in the city remained limited due to the city's isolated location a few kilometres away from the Iron curtain. Even though Vienna continued shrinking down to 1.5 million residents, public transport advocates at city level found new opportunities for pushing forward non-motorized transport solutions and renegotiating a status quo with pro-car advocates that was to last until the early 1990s.

4.2.1 The shift towards traffic mitigation at Federal level

Transport policy developments in Vienna did not take place in vacuum. During this second sequence, two major sources of external pressure account for increased concerns, at the local level, for car traffic mitigation (Stage 2 policies) and heated debates among politicians and practitioners.

In the context of the post oil crisis period, transport issues were increasingly addressed in relationship with the limited nature of fossil fuels, and towards the end of the period, with environmental issues such as noise and air pollution. Moreover, and even though the general consensus across political elites favoured car-based solutions, transport was instrumental in the political competition between the SPÖ and the ÖPV across levels of government. During this second sequence, the SPÖ gained a majority at the national level in 1970, and from 1983 onwards, it took the lead of a ruling coalition, first with the Freedom party (FPÖ) (1983-1986) and second, with the ÖPV (1986-2000). While not leading to a shift away from the car in major policy documents and the allocation of resources, traffic mitigation and “planning for people” policies (stage 2) were increasingly advocated in political discourses, and to a lesser extent, in policy documents and concrete measures, in order to increase accessibility and reduce congestion. A few symbolic, short-term restrictions for private car use were introduced country-wide in 1974, including the City of Vienna: every car owner had to declare a day of the week – with a sticker on the windscreen – during which car use would be banned. In this respect, **there was a growing disconnect between political discourses, that clearly marked a shift away from the car, and transport policy developments, that mainly favoured car-based solutions** (Emberger, 2017). A number of organizational solutions aimed at promoting a more integrated approach to transport were discussed: all transport modes were included in the first national transport strategy, and a reshuffling of ministerial portfolios was suggested – but only implemented three decades later – in order to better integrate road and rail policies.

Yet pro-car interest groups and a vast majority of subnational authorities resisted the attempts to effectively contain car growth and road construction. Throughout this sequence, motorized transport benefited from the largest share of resources and during this time period, the high-speed road network expanded considerably (see section 3).

Growing environmental concerns

Following the 1973 oil crisis, environmental awareness grew stronger at Federal level and contributed to the emergence of the Austrian environmental movement (Williams, 2000). Similarly to the situation observed in Western Germany, this new type of social demand emerged in the context of the dying forest phenomenon (*Waldsterben*), which was attributed to air pollution and acid rain. As environmental concern grew stronger, it sparked civil society initiatives and led to the Green Party being represented in the Austrian national parliament from 1986 onward⁶¹. In this rapidly evolving socio-political context, the car-oriented city model was challenged and its development was increasingly combined with traffic mitigation policies. A new set of emissions regulations were introduced across policy sectors (e.g., energy, housing, etc.) in order to reduce sulphur emissions (Emberger 2017). In transport, this resulted into supporting the use of sulphur-free fuels, renewing car fleet and later on, electric mobility⁶². Another set of traffic mitigation policies introduced at Federal level aimed at increasing road safety and a reform of the road traffic regulation (StVO) allows comprehensive short-term parking management schemes to be introduced from 1986 onward⁶³. Some programmes targeting daily commuting between low density/rural areas and urban agglomeration offered some limited funding and support to subnational levels of government to develop non-motorized transport alternatives, mainly per rail. This policy strengthened towards the end of the 1980s, as part of the federal government's efforts to reduce costs and levels of indebtedness. A number of motorway projects were abandoned, and subsidies available for road projects at subnational levels were reduced. These evolutions made new resources available for a larger range of transport policy developments across cities.

The Vienna region as a showcase for evolving Federal transport policies

The shift underway at Federal level was visible in Vienna as part of implementing national transport policies and regulations. The capital-city benefited from capacity investments in national transport infrastructures, which sought to increase its attractiveness vis-à-vis other major European cities (Buehler & Pucher, 2016). In this respect, pro-railways interests within the SPÖ and federal agencies, the ÖBB in particular, played a pivotal role in securing continued investment in rail-based networks, including those with a decisive urban dimension such as the metro. Their active role in shaping public transport networks and services at subnational level is to be understood in the context of the national federal system⁶⁴. Insofar as strategic decisions were now made at federal level and implemented in a hierarchical, top-down way, both the ÖBB and the SPÖ played a critical role in channelling the interests of, respectively, economic and political interests across levels of government. As part of its efforts to increase rail transport at provincial level, the ÖBB also selected the capital-city as a preferred location for experimenting with new forms of regional cooperation. It had made an agreement in 1961 with the Viennese transport agency in order to initiate a regional approach to transport management in the wider metropolitan area. Drawing on similar developments underway in Hamburg, a regional transport association was founded in 1974 – the VVO (see above) – and extended to local authorities in the adjacent province of Lower Austria. Yet it took another decade for the regional transport agency to start operating under the name of Verkehrsbund Ostregion (VOR), together with a single tariff zone and an integrated ticketing system. In cooperation with Wiener Linien at first, regional trains to the surrounding province were included in this joint platform with VOR's responsibilities extending within a perimeter of 50 kilometres beyond the city's border. Other public transport systems were incrementally included into the regional fare structure, including bus services in 1987.

Notwithstanding their critical role in fostering alternatives to car use, federal transport policies underestimated the specificity of transport congestion and pollution in urban areas (OECD, 2003). Moreover, they

⁶¹ Since then they enjoyed uninterrupted parliamentary record until 2013, see following section.

⁶² This resulted into a reduction in sulphur emissions from 350,000 tonnes a year in 1980 to 25,600 tonnes in 2007 (Umweltbundesamt, 2016). This shift also contributed to strengthening alternative transport solutions at Federal level, especially for the transport of goods, through rail- and waterways infrastructures.

⁶³ 13th StVO – Novelle. This opened new opportunities for cities to develop their own parking management schemes. In Vienna, it was developed as of 1993. For an overview of other cities in Austria, see Riedel (2013) and for a European overview, see (Technical committee on transport, 2005).

⁶⁴ See section 3 about the respective powers of Federal State and subnational authorities in the planning and provision of public transport services.

resulted into adding new policy layers rather than replacing pre-existing urban transport policies, thus leading to some contradictions and added room for manoeuvre at city level.

4.2.2 Transport and city planning as the two faces of the same medal

National debates shaped to limited extent only, the setting of transport policy priorities in Vienna. These were also reshuffled according to the urban dimension of transport issues that is, congestion, and in relationship with debates among practitioners and politicians about the selection of concrete transport solutions. Unlike discussions taking place at national level, it was mainly framed in relationship with city planning and congestion, due to the historical prominence of urban planners and architects over all city-related issues.

Congestion as a major policy priority

Traffic jams became a regular feature of city life in the inner centre of Vienna from the late 1960s onward, thus justifying the need to expand road space for car traffic and when possible, to relocate public transport below ground. Even though Vienna's population was further diminishing, increasing motorisation rates and daily incoming commuting traffic raised new concerns within the city's urban planning department about the transport network's capacity to accommodate travel demand. Indeed, and this constitutes a specificity of the Vienna case, debates about transport were continuously framed within a larger discussion on city planning, historical legacy and the need to preserve the appearance of the historic city. The urban planning administration and, more generally, the planning community, acknowledged the importance of transport for urban planning, and shared the idea that the existing transport system was ill suited to address travel demand. However, interventions to create a more car-centric road network were considered to impact the appearance of the historic city and risk harming the organic workings of the city.

First, this gave strength to the idea, still in force today, that the urban core of Vienna should benefit from tailor-made initiatives with the support of federal resources. A dedicated fund was created in order to cover the costs associated with the preservation of the inner-city area⁶⁵. Second, this contributed to highlighting some profound contradictions in the role attributed to transport as part of city planning objectives. The following quote from Otto Engelberger, city planner from 1972 onward, helps to understand how transport debates were framed during this period: *"The essence of a city is to offer residents and workers a healthy and liveable environment to live in. Transport plays a key role in it. Although its role should not be overstated, it is hard to imagine modern life without motorised traffic. Alone from these assertions it is apparent that the interests of different road users collide and restrict each other. To determine which road user interests are to be given priority, a measure of the optimal socio-political uses to society is to be used."* (Aufbau, 1969, TbNB). More fundamentally, this quote reflects the contradictions inherent to traffic mitigation policies (stage 2 policies): the aspiration of creating a modern city catering for the private car, whilst acknowledging the limited capacity of the road network and its inability to accommodate full motorisation rates.

The sentiment within the city planning department, the city administration as a whole and within the SPÖ, was that transport pressures could not be solely addressed by increasing public transport supply. This quote also captures the engineering approach to making this difficult political decision material. Within the city planning department, the conclusion was to assign demand for transport to the different modes that could meet that demand within the restrictions of a historic city. Where possible, such as for recent urban expansions, new transport connections were to be built. The 1969 and 1980 Transport Plans for Vienna (*Verkehrskonzept Wien*) very much reflect this consensus and it wasn't until the end of the second sequence, that some attempts were made to effectively strengthen the urban dimension of public transport and contain car use. Indeed, a number of transport initiatives introduced during this time period laid the ground for strengthening the urban dimension of public transport in later sequences.

⁶⁵ The decision was made in 1971 to preserve Vienna's urban core as part of the Preservation of Monuments Act and a Vienna-specific Protection Zones Act. This prefigured the decision to support this 371-ha area's inscription on the UNESCO World Heritage list, which was effective from 2001 onward.

Urban and transport planning as intrinsically linked policy issues

Insofar as transport planning and city planning were considered intrinsically linked, interrelated relationships between professionals, bureaucrats and politicians within the urban planning sphere were redefined accordingly. First, a series of organizational reforms introduced between 1969 and 1978, considerably enhanced expert knowledge within the city administration, that is MA18, as opposed to experts appointed in the academic sphere. By contrast to the previous sequence, during which expertise and knowledge about urban planning was mainly concentrated outside the city administration and embodied by the figure of the city planner, professionals within the city planning department gained increased control over the framing of city-related issues and the selection of preferred policy solutions⁶⁶. The main rationale was to increase in-house resources (e.g., human resources and finances) and allow for long-term planning. More precisely, city and land use planning, which had previously fallen under the jurisdiction of the appointed city planner, were transferred to MA18, the department for city planning within the municipal administration. Second, leadership over city planning was transferred to a politician, as opposed to a professional – architect, engineer or planner – and the MA18, the city planning department was taken out of the directorate for city building (*Stadtbauamtdirektion*) and made its own entity. This second organizational reform resulted into all city-related issues' increased visibility among elected representatives and the general public. By contrast to their predecessors who favoured housing and social welfare politics, new generations of SPÖ and ÖVP politicians considered transport and urban planning as major political priorities. In this context, within-SPÖ politics increasingly shaped the setting of urban and transport policy priorities in Vienna.

The controversies over two major large-scale projects that is, the development of the metro and flood protection, both resulted from and fostered this changed political and organizational context⁶⁷. More generally, these new political and administrative arrangements were – and still are – considered major enabling factors for long-term planning and carrying out large-scale urban development projects, including the development of a new public transport network.

4.2.3 A pragmatic division of tasks between over- and underground transport

Contradictions inherent to traffic mitigation policies were also reflected in the selection of concrete transport initiatives. In practice, a decision was made to distinguish between transport developments in the 1st district and in the rest of the city, and between the over-ground transport network in which the automobile was dominant, and the development of underground networks and infrastructures.

Reducing car use in relationship with heritage preservation

Tailor-made transport initiatives were introduced in the inner-city as part of the heritage preservation strategy. Due to the specificity of the urban fabric in this area of the city centre, place-making initiatives, drawing on urban design and traffic calming, were introduced in order to encourage alternative street uses, walking and tourism-related activities in these historic surroundings. They mainly concentrated in the 1st district with a focus on the surroundings of emblematic monuments and places, and to a lesser extent in the adjacent buffer zone. Specific attention was given to containing traffic congestion and reducing the impacts of car traffic, including its visual impact. Charges for short-term parking was introduced in designated zones, mainly close to shopping areas and as way to support tourist-related activities and small businesses. Pedestrianizing initiatives were also introduced from 1977 onwards, as well as reduced traffic speed limits. These measures offered an unprecedented opportunity to develop the urban dimension of transport policies in relationship with heritage preservation.

Priority given to car use on the over-ground network

Outside the inner-city, road investments still concentrated the largest share of transport investments over-ground. The cycling network was further reduced from 24 to 11 kilometres to accommodate motorised traffic

⁶⁶ See also section 3, about the local planning culture

⁶⁷ This refers to the development of the Danube Island project.

(Stadt Wien, 2013a). Remaining segments of the tramway system⁶⁸ were converted into underground tramlines, allowing the upgrade of road space in order to speed up traffic flows. Indeed, most transport investment during this sequence were meant to create more space for traffic flows. As explained during interviews: *“back then the tram network was still considered as obsolete – a relic of the past - that was to be phased out. It was envisioned that as the metro was extended the tram routes would be retired. This was discussed in length and a decision on the matter was perpetually postponed”* (Interview transport expert, March 2016). 3 new urban motorways were built outside the well-established urban core, in the outer urban areas between 1978 and 1989. Furthermore, increased grade separation was promoted between car traffic and all other road users. The most prominent success of this paradigm of thinking was the tunnelling of the Ringstrasse. Urban design and investments favoured underground or, alternatively, elevated, pedestrian crossings alongside major arterial roads in order to ensure both safety and speed. Meanwhile, implementing federal legislation on road safety led to the introduction of a 30 km/h speed limit on small segments of the road network, mainly in the urban core and as part of attempts to preserving the city's architectural heritage.

Re-examining underground public transport solutions

The conversion of the tramway system into underground tramlines also led to re-examining other public transport solutions. Meant for the benefit of car drivers, the development of underground tramlines took place without any significant investment in new interchanges and lighting. It altogether reduced the attractiveness of public transport and raised some discontent among users. The suggestion to build a metro resurfaced in the late 1960s in a context of increased political competition. At federal level, it contributed to the SPÖ's strategy to differentiate itself from its former coalition partner and get a majority in Parliament. The two main arguments were put forward in support of this initiative within SPÖ and pro- railways advocates, with ÖBB in particular favouring the greater centralization of all rail networks around a main station. First, Vienna needed such an infrastructure in order to compete with other world cities. Systematic references were made to the decision by the City of Munich to build a metro in the early 1960s, and repeatedly appealed to the SPÖ's historic role in prioritizing the aspiration to be a “modern city”.

Second, due to the growing realisation that the private car alone could not transport enough people and that the city needed high-capacity public transport. This approach gained growing support within MA18 and was mainly framed in a planning perspective. Within the local SPÖ however, there was no general agreement on the concrete solutions that were to be selected in order to improve the public transport supply. Historically, it had favoured alternative solutions to the metro against both the Conservative and the Communist Party. This preference was motivated due to the duration and costs of such a large infrastructure project, and the fear that it would weaken this party's leadership over local politics. As the political controversy about the Danube Island project led to increased ÖVP-SPÖ competition, the SPÖ revised its strategy in accordance with the solutions under discussions at a national level within the soon-to-be elected majority. Together with SPÖ figures and ÖBB, MA18 demonstrated its ability to champion this flagship project against, on the one hand, those favouring the development of new urban motorways and on the other hand, those advocating a strict economic appraisal of all proposed policy solutions⁶⁹. The decision to build the metro system was made in 1968 and both organizations successfully lobbied national government for half of the construction costs (some ÖS 2.4 billion).

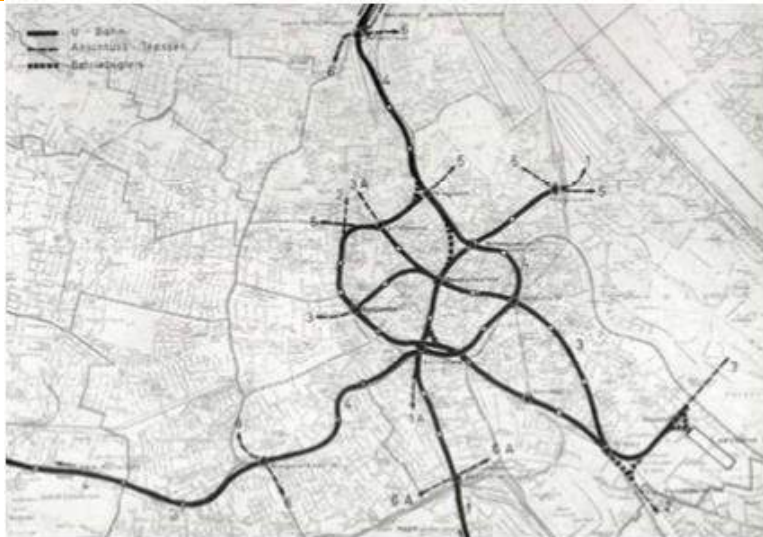
The decision reached in 1968 reflects the overlap, during this transition period, between two different approaches to transport planning: one that is car-dominated for surface transport, and one that favours high capacity rail-based systems for underground transport. Alongside the decision to plan new urban motorways, the political agreement gave the go ahead to planning underground transport infrastructures, with 3 lines at first, U1, U2 and U4, and a central station (Karlplatz). It drew on both transforming existing networks and building new infrastructures, as a way to address the issue of both duration and costs. Such an incremental process allowed the progressive opening of the system and building increased socio-political support for justifying the planning of new extensions. The first U-Bahn line, opened in 1976, resulted from both the transformation of existing inner-city railway lines, a section of an underground tram and one line totally new constructed. The former Stadtbahn system was dismantled in 1970 and from 1976 onwards, parts of it was integrated into the newly established U-Bahn system. Overall, the construction and continued extension of the U-Bahn system after 1978

⁶⁸ Two tram routes and ten stations in the urban core.

⁶⁹ This managerial approach was championed at the time by Felix Slavik, a major political figure within the national SPÖ and mayor of Vienna between 1970 and 1973.

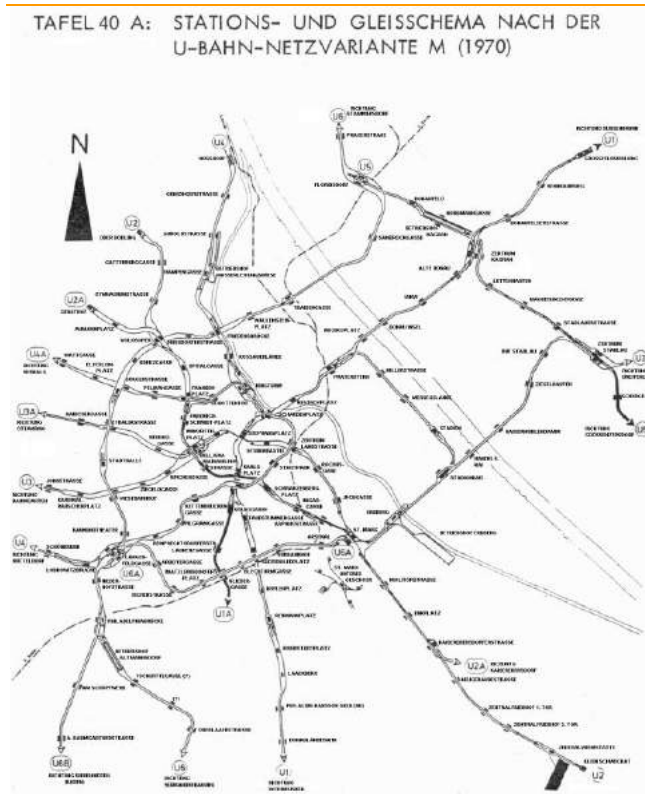
(U3 and U6 notably) contributed to rationalising remaining segments from pre-existing transport systems. It also opened some opportunities for measures aimed at strengthening the urban dimension of public transport, such as developing pedestrian zones in the vicinity of large U-Bahn stations in the inner-city area.

Map 6b. Plan for the U-bahn network, as of 1966



Source : 3. Jahrzehnte U-Bahn Bau, S. 20.

Map 6c. Overview of proposed U-Bahn network in Vienna in 1970



Source : <http://www.tramway.at/> (consulted January 2018)

The U-Bahn system as an alternative to the automobile

The metro system soon emerged as the backbone of the city's transport network, carrying the majority of passengers and shaping new urban developments in terms of both workplaces and housing. In addition to this large capacity investment, new transport innovations were experimented in the 1st district, including above-

mentioned pedestrianizing and reduced speed limits. Furthermore, the opening of this new public transport system fostered new interest among the public for public transport and enhanced those organizations – transport companies, city administration – in charge of its planning and daily operation. Holding responsibility for the provision of public transport services as part of the City's utilities company, Wiener Stadtwerke-Verkehrsbetriebe grew stronger as it benefited from regular resources for daily operation of the network. In those years, cross-utility financing allowed for electricity and gas rates to cover for the local transportation system. This did not, however, put an end to criticisms questioning the added value of this new infrastructure from a cost-benefit perspective and as part of continued debates about the profitability of public services. In line with a managerial approach to the selection of transport solutions, the burden public transport represented for the city's budget was regularly questioned from both the political opposition and from within SPÖ. Several options were explored in order to cover the operating deficit. Yet MA 18 and Wiener Linien were able to successfully resist expenditure reductions and budget cuts. This in turn confirmed the changed nature of public transport supply and its growing integration into Vienna's corporatist form of political clientelism, as demonstrated with decisions regarding the location of future metro extensions.

Since then, the metro system has benefited from uninterrupted support from the Federal state, which in turn justified its expansion at the local level. More generally, it was understood among local elites that efforts to reduce operating deficits were not to be achieved through the increase of fares or the reduction of services.

4.2.4 The emergence of an alternative urban planning model

All the changes resulting from these large scale urban developments were not welcomed and opponents criticized both the form of decision-making and the urban vision they represented. The city's wish to avoid land speculation and maintain a strong hold on urban planning and real estate development meant that projects were only made public at the latest possible stage. As new extensions were planned in close connection with urban regeneration and housing projects, this hierarchical form of decision-making was increasingly criticized.

The Conservative opposition denounced the instrumental use made by the ruling majority of public transport services and investments in order to maintain a high level of support from its traditional clienteles, mainly social groups and districts. Other criticisms stemming from civil society organizations advocated the need for another approach to urban planning.

Grassroots mobilizations and the idea of "gentle city regeneration"

Beyond criticism against the metro project, forms of urban governance and specific policies were increasingly opposed by grassroots mobilizations. Signs of greater civic engagement were visible among homeowners' and residents' associations. Together, they increasingly challenged specific urban development projects and more generally, forms of urban governance and policy-making⁷⁰. By strategically using their right – since 1973 – to call for a referendum, civil society organizations gained additional opportunities to intervene in urban politics⁷¹, as demonstrated with Mayor Slavik's proposed extension of the university campus (1973) or the SPÖ-led suggestion that Vienna should host the 1995 world's exhibition (Pelinka, Rosenberger 2007: 87). In addition to neighbourhood and homeowners' associations, **environmental concern grew stronger within the local population, with an increased focus on air quality and nature preservation**. In Vienna, social demands and environmental mobilizations rapidly expanded beyond concerns for the dying forest, with a number of issues linked to city life, including the negative externalities associated with car use, the quality of housing (*Vollwertwohnen*) and the overall rational of urban development principles. Following mobilizations against the university campus extension, students and green movements advocated the use of cycling for everyday travel as part of dedicated organizations, and a working group for environmental-friendly, i.e. ARGUS⁷², urban transport was created in 1979 (Hachleitner et al., 2013, 140-141). The idea of "gentle city regeneration" was opposed to

⁷⁰ One of the most emblematic campaigns opposed the extension of the Zoological Institute of the University of Vienna, which would have led to privatising a parcell of the *Sternwartepark*. The campaign benefited from substantial press coverage from the local newspaper Kronenzeitung, and a referendum was held in 1973. Following the failed referendum in 1973, Mayor Slavik resigned.

⁷¹ Even if the result of a referendum is not legally binding, so far hardly a representative body has ignored the result of a referendum.

⁷² Arbeitsgemeinschaft umweltfreundlicher Stadtverkehr (ARGUS)

large-scale urban developments and a number of demonstrations and public events were organized about developments underway as part of the DonauCity project.

These demands for alternative urban planning solutions met with a growing concern for the city's level of indebtedness. Revenues from local taxes were stagnating. As federal housing regulations and organizations were being reorganized in line with a liberalization reform agenda, the local SPÖ sought to alleviate restructuring costs in the local welfare state regime through a series of adjustments. Social mobilizations eventually led into new Guidelines for city development⁷³, which reflected the diffusion of a new thinking within the city administration. Whilst the main focus was on social and housing regeneration in historical working-class areas, **environmental planning was introduced progressively and mainstreamed across policy sectors in order to ensure the creation of liveable and sustainable communities**. City planning was increasingly considered integral to environmental planning in order to ensure both quality of life and resilience to natural catastrophes⁷⁴. On the one hand, new planning bodies were created for specific projects and policies, such as the DonauCity project, in order to reach out to private investors⁷⁵, while on the other hand, the city – and the SPÖ – remained owner of municipal companies and maintained a stronghold on the provision of public and social services, including housing and transport. To some extent, these adjustments led to redefining relationships with civil society organizations in combination with the traditional clientelist model (Becker and Novy, 2001). Increased attention was given, as part of this changed urban planning model within MA18, to consulting the general public. City planning was not restricted anymore to political and practitioners' forums. Yet these organizational reforms did not put an end to the old bureaucratic model and strengthened the role of informal networks linking central bureaucracy, autonomous bodies and (semi-public) businesses in a number of sectors.

Changed local political context, shifting transport priorities at federal level: a turning point in urban transport policy priorities

In this changed political context, more radical transport solutions were being considered, mainly as part of increased political competition with the ÖVP and within SPÖ itself⁷⁶. Unlike the large majority of politicians who pursued a long-term political career, Mayor Zilk (elected in 1984) came from the media industry. He relied upon alternative policy solutions in order to differentiate himself from traditional SPÖ politics and seek extended support among both the student and the green movements. Some of the new urban motorways planned in parallel to the metro system were suspended temporarily in the city's inner core. Furthermore, Vienna's share in transfers from the federal government was declining and pressure to reduce costs, especially in public services, increased. This reform agenda met with changes underway in the federal road policy, with new projects being abandoned and subsidies available for urban motorways being suspended or reallocated to other transport projects (e.g., non-motorized transport, traffic mitigation, etc.) under the growing pressure of the Green Party. This led to a second revision at city level, resulting in several road projects being abandoned for good in the inner-city districts, where they faced strongest citizen's resistance. In addition, the new city administration suggested converting arterial road network's nodes into multilevel junctions in order to make some space available for other transport modes. Non-motorized transport initiatives were also encouraged. A bus nightline network was introduced in 1986. Cycling was granted unprecedented levels of attention from the ruling majority, as part of its attempts to address – and co-opt – new social and environmental demands.

Until then, transport planning documents mainly framed cycling in relationship with leisure activities. The 1980 Transport master plan stipulates that "*Cycling lanes should be developed especially in recreation areas and on the city's outskirts. In a later phase, a bike lane could also be created alongside the Ringstrasse*" (Wiener Verkehrskonzept, 1980, p.9, TbCH)⁷⁷ (see Map 6d). A shift was observed from 1986 onward, as noticed by an interviewee: "*He decided from one day to next to push cycling. Probably because he unusually joined politics from the media industry. He was looking for new ideas, new allies*" (Interview transport expert 3, March 2016). Pro-

⁷³ Leitlinien für die Stadtentwicklung

⁷⁴ See also meetings at MA 22 about environmental protection in Vienna, Sciences Po, STU study trip to Vienna-Bratislava (November 2013).

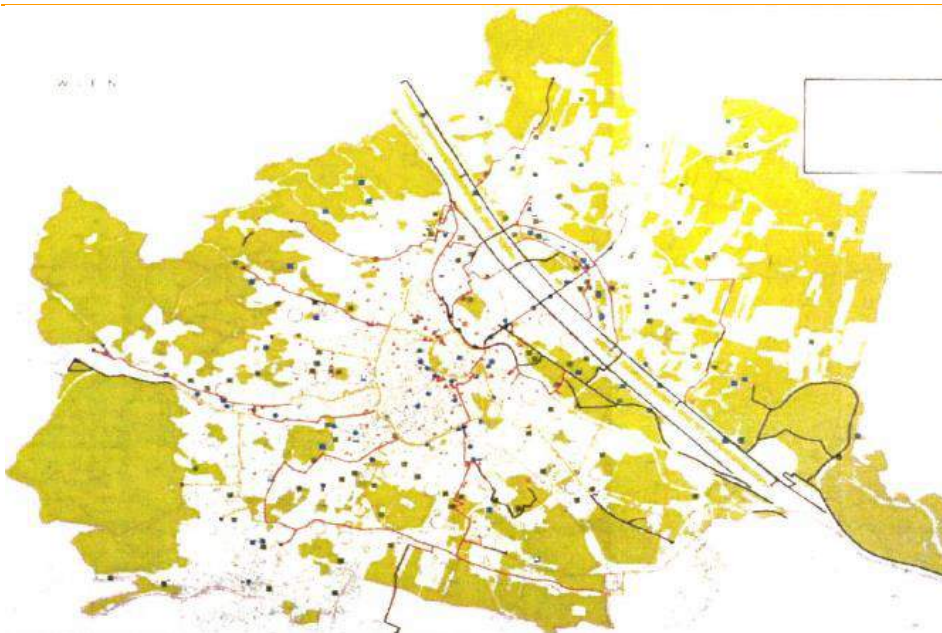
⁷⁵ See the role of the WED (section 3).

⁷⁶ See also Kurz (1981).

⁷⁷ TbCH stands for Translated by Charlotte Halpern

cycling organizations were formally recognized as stakeholders in discussions about transport planning. Cycling was increasingly framed into transport policies, resulting in a series of measures, such as traffic exemptions for cyclists, the building of cycling paths and laying the foundations for a cycling ring road project in 1985. Bicycles were allowed on the metro and the regional train networks, and ARGUS benefited from the Mayor's office support for opening cycling offices and establishing a first map for cycling routes. These initiatives were mainly developed in those areas where grassroots organizations were best represented (4th and 7th districts) or where environmental protests challenged new urban projects (Donau Island). Yet in 1991, its mode shift added to 1.5 per cent of trips (Stadt Wien, 2002).

Map 7. Cycle path network as of 1982



Source : retrieved from Magistrat der Stadt Wien (2002), p.5

Together, these changes outlined a new vision for urban and transport planning, **but its implementation was postponed for another decade** due to a change in demographic context and to major socio-political controversies. To be sure, it resulted in stopping remaining road construction projects. Yet beyond small-scale, symbolic initiatives, the effective development of on-street cycling measures (Stage 3 policies) met with resistances from the public transport company and the pro-car lobby. The proposed cycling ring project was only built in parts and introducing shared traffic on bus lanes led to lengthy negotiations with the transport company. The urban dimension of public transport remained limited and restricted to ensuring greater accessibility to, from and within the city centre (stage 2 policies).

4.2.5 Concluding remarks, Stage 2

As rail-based networks expanded and captured a growing share of resources, policy attention also shifted from accommodating private car growth and trying to meet demand by expanding the road network, to an attempt to meet the demand by building rail-based public transport solutions. Pro-public transport interests grew stronger and accumulated new policy resources. Yet apart from some symbolic decisions, such as the weekly ban on car use, the political consensus within the social-democratic party favoured the status quo that had contributed to a division of tasks between over- and underground transport.

Overall, such transport developments reflect the contradictions inherent to the shift from 'car-oriented city planning' and the 'planning for people' approach. In Vienna, the choices made in the late 1960s to distinguish between over and underground transport led to a continued encroachment between Stage 1 and Stage 2 policies. In this context, the urban dimension of public transport remained limited and restricted to ensuring greater accessibility to, from and within the city centre (stage 2 policies). Under the pressure of the students and the green movement, small-scale cycling initiatives were introduced (stage 3 policies) in those areas where protests were most developed.

4.3 Limiting car traffic through the integrated transport approach (1991-2011)

Following the fall of the Iron curtain in 1989, and in the context of pre-accession negotiations to the EU in 1995 and preparatory works for the 2004 enlargement, transport policies evolved rapidly in Vienna. An integrated transport approach to transport was developed at both federal and city levels, which sought to make public transport attractive and to reduce car traffic externalities. In Vienna, city planning priorities were defined in a new generation of spatial planning documents – STEP 1994 and STEP 2005 – and regularly updated in order to accommodate demographic and urban growth. The mainstreaming of these spatial planning goals across policy domains was incremental, reflecting a number of barriers such as social resistance and organizational reforms

Focusing on transport policy developments, this section examines the disconnect between, on the one hand, the shift observed in policy objectives from traffic restrictions for accessibility (stage 2) towards traffic restrictions for the liveable city (stage 3), and on the other hand, the stability of urban and regional transport policy instruments (stage 2), which combine improvements brought to public transport both in terms of capacity and in terms of quality, together with measures to reduce car use through parking management. Such ambivalence is explained by transport politics and the need for Dr. M. Häuptl, who was elected mayor in 1994 and has remained in post ever since, and the SPÖ to accommodate his traditional supporters.

4.3.1 The emergence of an integrated transport approach at the Federal level

Evolving constraints and opportunities in federal transport politics and policies shaped transport policy developments at city level. In the context of the 1995 accession to the EU and the 2004 enlargement, the political reorganization that had been launched in the late 1980s was consolidated in connection with liberalization reforms. In spite of the increased political competition from the Green Party and the FPÖ, the role of neo-corporatist institutions was redefined in order to enhance international competitiveness and reach out to the private sector. In this context, most efforts were devoted to strengthening Vienna's central location as a major European hub and that of Austria within an enlarged Europe.

Priority given to accessibility, traffic mitigation *versus* the Green Party's "gentle mobility approach"

As part of the consensus-seeking approach to decision-making⁷⁸, the general orientation reflected in the Federal transport master plans and infrastructure plans until 2013 was to improve economic growth through construction works and the modernization of transport infrastructures (Emberger, 2017, 13). This overarching goal did not, however, reverse the slowdown in road and motorway investment that had been observed since the mid-1980s. In the context of pre-accession negotiations, road traffic mitigation objectives were introduced in order to reduce road-traffic-related emissions, improve air quality and increase safety. During subsequent negotiations at EU level about road safety, air pollution and emissions, Austria sought to achieve a "frontrunner" position in its attempts to promote its integrated approach to traffic mitigation (Knill, Liefferink 2001). The Green Party was instrumental in pushing for a more sustainable transport policy agenda at national level. In the context of the Austrian model of consensual democracy, they never participated in Federal governments but enjoyed an uninterrupted parliamentary record until 2013 and gained a strong governing experience at subnational level (regions and cities) (Buzogany, Scherhauer, 2018). Within parliamentary opposition, they actively sought to regulate the negative externalities associated with car use and **to support the development of an alternative approach to transport and mobility**. This agenda now extended to cycling and is linked up with a large range of cycling organizations. ARGUS had transformed into a large, federal organization with a number of local offices across the country, and together with other cycling organizations in Austria, they regrouped as part of a joint lobbying platform (*Radlobby Österreich*). Together with a new generation of urban planners and transport experts, they promoted a "gentle mobility approach" (*sanfte Mobilität*) that relied upon greater segregation between transport modes as a way to enhance the role of cycling as a transport mode. To this end, they pushed for new

⁷⁸ A government coalition between ÖVP and FPÖ took over between 2000 and 2007, followed, between 2007 and 2017, by a return to a SPÖ – ÖVP ruling coalition.

road traffic regulations⁷⁹. Towards the end of the sequence, they also advocated the rapid transposition of EU cycling initiatives, such as encounter zones⁸⁰.

Strategically using the EU as a constraint to change, successive ruling coalitions supported the emergence of an integrated approach to transport planning and policy-making, as well as the implementation of solutions that had been under discussion for some three decades. Intermodal transport masterplans were introduced from 1991 onwards and following the election of the ÖVP-FPÖ coalition in 2000, to the creation of a joint ministry for roads and rail was introduced in order to foster greater integration between transport modes⁸¹. Both railways and roads sectors were profoundly reorganized. A series of reforms in the management and funding of motorways was introduced in line with the concept of true costs in the transport sector, including public-private partnerships, road pricing for private cars on motorways (1997) and a distance based heavy goods vehicle road pricing system (2004). Alongside efforts to regulate freight traffic, “making public transport attractive” was considered another major Federal transport policy priority. The railway sector – and ÖBB in particular – was also reorganized in order to separate infrastructure planning from operation on the one hand, and to transform it into a competitive alternative for both passengers and the transport of goods.

Some attention was also given to local public transport as part of the 1999 Federal law⁸², which confirmed the division of tasks between levels of government and the role of subnational levels of government in transposing national principles and goals into concrete policy measures⁸³. Two major goals were set at a federal level as part of the integrated transport approach: first, to reduce the need for travel through land use measures and second, to optimize existing infrastructure and develop new ones. The development of park-and-ride facilities was actively supported throughout the country in order to encourage the shift from private car use to public transport. Yet in this case, the Federal state mainly depended on subnational authorities at implementation stage.

Strengthening Vienna's strategic position in an enlarged EU

Together, the changes taking place at the federal and the EU levels had some direct and indirect impacts on urban and regional transport in Vienna. The strengthening of the capital-city as a major European hub led to a investment in strategic transport infrastructure and networks, including the extension of the airport, the development of a new main train station (*Bahnhof Wien Europa Mitte*). Major railways and highways were planned in order to reconnect the city with regions across the border, while at the same time, offering new opportunities to plan added capacity and modernize existing networks. EU policies and funding were also instrumental in developing cross-border relations and networks as part of the Danube Region strategy and the CENTROPE project⁸⁴. Towards the end of the period, the Federal state's smart city agenda incentivized local authorities to promote increased integration across sectors and to reshuffle urban policy priorities. Furthermore, shifting priorities at federal level also meant that funding was available for subnational governments in order to fund public transport initiatives, including capacity investments in regional railways and metros. In the case of Vienna, the Federal State continues to fund 50 per cent of underground metro extensions. The ÖBB's rail network in Vienna also benefited from continued support and capacity investment, resulting in this network accounting for some 25 per cent of the overall performance of the city's public transport system.

All in all, and similarly to the dynamics observed during the previous period, federal politics and transport policies exerted a pivotal role as a driver for transport policy change and **shaped the access to funding opportunities and the general framework within which Vienna's transport policy developed**. Yet in a number of issues, Vienna also went beyond the choices made at Federal level in order to further constrain car traffic.

⁷⁹ Strassenverkehrsverordnung, StVO

⁸⁰ This agenda was also supported by pedestrian organizations at Federal level (Interview Mobility Agency, February 2016).

⁸¹ See above, section 3. Bundesministerium für Verkehr, Innovation und Technologie (BMVIT).

⁸² This piece of legislation also takes into account changes underway at EU level in the regulation of public services.

⁸³ See Section 3

⁸⁴ See section 3

4.3.2 Reframing urban transport policy objectives and resources in a context of regional growth

In a changed socio-economic and political context, car traffic reduction emerged as a major priority in transport planning policies. The STEP 1994 reflects these new concerns and highlights the necessity for Vienna's repositioning in a new Europe. By contrast to pre-1989 spatial planning objectives, according to which the city – and the country – sought to develop relationships across its Western and Southern borders, it now sought to become an anchor point in a new Central Europe. STEP 1994 also emphasised the need to plan for a city that now for the first time in decades was one with a growing population again, and in this changed context, to maintain high levels of quality of life through the reorganization of public spaces, high environmental protection standards and traffic safety measures. A decade later, STEP 2005 confirmed the priority given to public transport, and reframed transport policy objectives in a regional context.

Prioritizing public transport as part of STEP 1994

In transport, and similarly to the situation observed during previous decades, the aim was to ensure accessibility to workplaces and leisure activities while at the same time limit congestion and road-traffic related emissions. Its operationalization was, however, differentiated according to three types of urban areas. In line with the city's commitment to ensure the inner-city's inscription on the UNESCO World heritage list, a large-scale regeneration programme was designed for the city centre (Wien-Mitte project) (De Frantz, 2001), in which specific attention was devoted to car traffic restrictions⁸⁵. Mainly aimed at dismantling off-street parking and at reducing the impact of traffic pollution on historical facades, the local authorities searched for a compromise between the need to preserve the inner city's distinctive heritage while at the same time coping with the opposition from residents and shop-owners to reduce accessibility. As part of its attempts to strengthening activities linked to tourism and culture, the urban dimension of transport, which had been developed from the late 1950s onwards and in relationship with the introduction of the metro system, was further strengthened in order to enhance the quality of public spaces. Discussions about STEP 1994 also highlighted the need to examine developments taking place in outer districts and across the city's borders. In this context, they focussed more particularly on congestion reduction. Following four decades of urban growth outside the city's borders in combination with city-led efforts to relocate workplaces and housing in outer districts, travel demand was increasingly defined in a metropolitan context and highlighted the need to revise the city's transport strategy accordingly. The metropolitan wide transport alliance VOR proved instrumental for developing joint public transport initiatives with adjacent local authorities in Lower Austria and across public transport companies.

Transport policy objectives were redefined according to these new city planning objectives. Preparatory to the 1994 Transport strategy (*Wiener Verkehrskonzept*), different pathways were examined. During the election campaign resulting into Dr. Häupl being elected as mayor in 1994⁸⁶, transport was singled out as a hotly debated topic within SPÖ and between political parties, and more generally, between pro-car and pro-public transport advocates (Interview Transport expert 2, March 2016). On the one hand, the ruling majority needed to ensure support from voters in outer districts, which were considered more car dependent due to their own individual preferences – in the case of wealthier social groups in low density areas – as well as to the unequal distribution of public transport supply which proved detrimental to lower-income social groups. On the other hand, negotiations were also underway in a changed regulatory context in order to reduce operating costs in public transport while at the same time ensuring the SPÖ's commitment not to increase fares or reduce the quantity and the quality of services. Political discussions within SPÖ resulted in enhancing the attractiveness and the performance of public transport. The city proposed achieving these goals by combining increased public transport supply – network expansions and higher frequency of service – with price-based parking management. The goal was to reach 45 per cent public transport trips by 2010. One of our interviewees summarized the compromise reached in 1994 between different transport modes and in view of the differences between areas in the city as follow: “*It is a recognition of the traffic issues and there is an agreement to expand the metro network and a few tram routes.*”

⁸⁵ The preservation of this area's “architectural and urban qualities and layout” now draws on a combination of protection requirements and management resources. Furthermore, a 462-ha buffer zone protects the immediate setting of the inscribed property. See description on the UNESCO World heritage website: <https://whc.unesco.org/en/list/1033> (last consulted, January 2018).

⁸⁶ Preliminary works drew on diversified sources of expertise and gave increased attention to values and attitudes linked to transport behaviors. We are grateful to the grey literature and archives provided by SozialData GmBH.

Measures to reduce the attractiveness of private travel are introduced. The centre of the city is at capacity and the traffic is always a background issue” (Interview transport expert 1, March 2016, TbNB).

Framing city planning goals in a regional context: STEP 2005

These traffic mitigation objectives were confirmed a decade later as part of STEP 2005 and the strategic role of public transport as the city's transport network was further strengthened. This spatial planning document reiterated the aim to develop and strengthen Vienna as a leading metropolis in Central Europe (Stadtentwicklung Wien, MA18, 2005). It highlighted the growing insertion of Vienna within European and global dynamics, the prospect of new opportunities attached with the 2004 enlargement, as well as increased competition with neighbouring cities to attract foreign investment, commuting patterns, shopping and tourism flows. Mirroring some of the concerns expressed in Federal policy documents regarding the national economy's attractiveness, a number of present and future threats to Vienna's economic growth were identified in relationship with developments underway in new member States and in Munich, the Austrian capital-city's historic rival. To some extent, STEP 2005 confirmed and strengthened the choices made a decade earlier. But inasmuch as it framed urban and regional planning in a metropolitan context, it also opened some opportunities for regional cooperation across a number of policy areas, including transport, and beyond the VOR context. The following quote from STEP 2005 reflects the shift away, in city planning, from inward-driven planning objectives: *“The City of Vienna, which in its spatial form was so influenced by the city's development in the 19th century, now needs to look beyond the city's jurisdictional boundary and work with the region”* (Ibid., TbNB). Drawing on EU policies and funding for cross-borders' initiatives, Vienna and the adjacent province of Lower Austria linked up with Bratislava to create a joint economic and development strategy for what was now labelled as the two-headed metropolis. According to a prominent figure in this process, the shift towards a cooperative regional alliance from the earliest stage on was also meant among political and administrative elites in Vienna as a way to prevent alternative strategies that would have been detrimental to the capital-city and to draw on its extensive technical and financial resources in order to maintain a strong hold on both the spatial planning process and the implementation of joint initiatives⁸⁷.

City planning goals were also reframed in a regional context. The aim was to strengthen economic growth within the city's boundaries while at the same time, safeguard existing green space and develop new ones. Drawing on the city's historic approach to urban planning, it suggested reverting to a strategic use of land-use regulations in order to separate areas opened for new developments – both residential and commercial – from those within which leisure activities, agricultural land and production, and green spaces would be protected. Explicitly referring to the 19th city planning principles, STEP 2005 highlighted the need to safeguard the city's green belt (Wienerwald) and calls for densifying areas located alongside existing and planned public transport infrastructures and services. **The main difference lies in the city planning model to which these principles refer, sustainable urban development having replaced the ideal of the modern city.** Similarly to the objectives introduced in the post WWII era, these newly defined spatial planning goals confirm the preference given to developing outer districts alongside future rapid transit road and rail infrastructure. Yet a significant shift took place regarding the role attributed to public transport as opposed to private motorization: expanded and upgraded public transport networks are to unlock new areas for development in the region and within the city's borders. New urban development areas are identified on the Danube Island (DonauCity) and towards the East (Seestadt Aspern) as part of this continuum between city and regional planning.

Overall, the emergence and development of an integrated approach to transport increasingly shaped policy developments in Vienna. A set of measures was introduced during this sequence, in order to meet with above-mentioned city-planning and transport policy goals. In addition to the profound reorganization of the public transport sector (see below), they proposed combining two flagship policy measures in order to ensure accessibility and reduce congestion: parking management and prioritizing public transport (stage 2). Other approaches, such as those discussed as part of the “Gentle mobility approach”, suggested combining awareness raising with the reduction of road space available to cars, the development of active transport modes and the strengthening of land use regulation. Those were either marginalized or paid lip service in policy discourses and documents without being allocated sufficient resources (Interview Transport expert 3, March 2016).

⁸⁷ See meetings during the Sciences Po STU Master programme's Study trip to Vienna and Bratislava in November 2013.

4.3.3 Mitigating the impact of car traffic through parking management and public transport

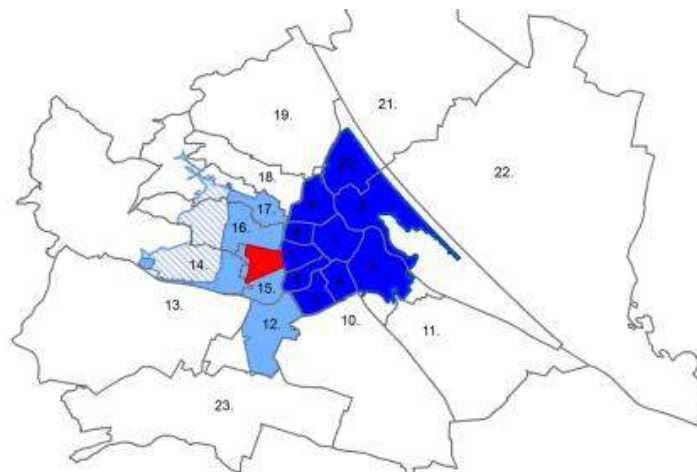
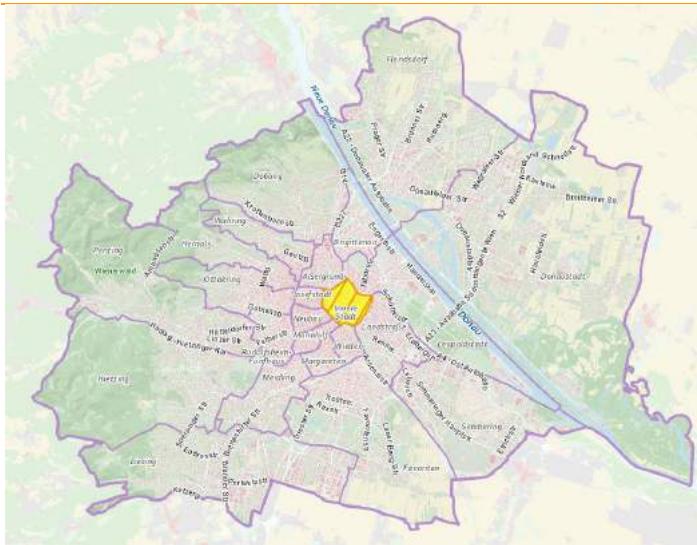
This section examines the introduction of parking management initiatives and the strengthening of public transport from 1991 onward. It argues that both policy tools were singled out at city level as flagship transport policy measures. Unlike traffic mitigation measures advocated at Federal level, they allowed local politicians to make the specificity of the Viennese approach visible. Indeed, the “Viennese model of public transport” (*Modellstadt für öffentlichen Verkehr*) and the parking management system became the trademark for the city’s efforts to market itself as the EU capital-city with the highest quality of life. Yet as implementation unfolded, some concerns were raised regarding their contribution to strengthening the urban dimension of transport as well as their weak environmental dimension. This is discussed in more details in the following paragraphs.

Parking management as a trademark for the Viennese approach to traffic reduction

As of 1993, a more systematic approach to parking management was introduced. This initiative built on past initiatives: parking restrictions already existed since 1959 (see above), parking charges had been introduced in 1975, with an initial cost of ÖS 4 an hour in 1975 up to ÖS 12 an hour in 1986, and at federal level, the changed road traffic regulation offered new opportunities to develop a comprehensive parking management scheme at the local level (Rieder, 2013). Instead of covering specified street segments and smaller areas, the parking management initiative planned to introduce short-term parking charges for the whole city. The entire first district was turned into a short-term parking zone in 1993. Initially meant as a pilot project aimed at reducing car traffic, this first experiment and its impacts – on travel behaviour, but also economic and political – were carefully examined prior to any decision for further expansions. A commission responsible for parking regulation was installed in order to draw lessons from this experiment and to work on specific rules and exemptions prior to its full implementation. In the inner-city centre, the introduction of parking charges since 1975 had generated some discontent among residents, shop-keepers and other daily users. District representatives and municipalities outside Vienna were concerned with this measure’s impact on accessibility to the inner-centre for daily commuters. The commission on parking regulation engaged with a large range of stakeholders, including interest group representatives, technical experts, local government representatives, and voices from industry. Residents were also consulted and several opinion polls were commissioned in order to assess the population’s feelings towards proposed changes. **As a result of this consultation process, greater differentiation was accommodated according to target groups’ demands and as part of district-based extensions.** Furthermore, additional objectives were assigned to the parking management initiative, alongside car traffic reduction, namely improving parking conditions for residents, small shops costumers and owners. This evolution was meant as an encouragement for other districts to join the scheme and to reduce criticism amongst residents and shop owners.

The policy was first introduced in the inner-city area and progressively extended towards the outer districts. Whilst the final decision regarding parking management is made at district level, it needed to fit within the framework set at city-level notwithstanding some exemptions. Between 1993 and the early 2000s, additional districts joined the parking management schemes. As summarized during interviews: *“Within 5-10 years the initial scheme introduced in one borough is expanded to more boroughs in inner Vienna. This makes the use of public transport more attractive and also quality of life as it reduced the number of cars searching for parking in the urban core, as few can now park”* (Interview transport expert 1, March 2016, TbNB). Another incentive for joining the scheme was related to increased parking demand in adjacent districts (Institut für Verkehrswissenschaften, 2013). In those districts that joined the scheme, residents were allowed to buy a permit for long-term parking whereas non-residents were only allowed short-term parking. The introduction of parking management was done in combination with the development of car parking facilities for residents and visitors. A large share of parking facilities, including park-and-ride, was developed by Wipark, a 100 per cent-owned subsidiary company from Wiener Holding that was created in 1960, together with the first parking fees in the inner-city. Revenues generated from parking fees were meant to cover for these investments and introduce sustainable transport measures in the city (Dorner et al., 1997). Until 2002, parking charges remained below the € 0.80 per hour threshold.

Map 8a & 8b. The expansion of parking management in Vienna, 1993 vs. 2013 compared.



NB: The map outlines the dates when district-wide short-term parking regulations were introduced.

Where	When	What
District 1	July 1993	Parking duration: 2 hours – Mo-Fr 9 AM to 10 PM
Districts 6-9	September 1995	Parking duration: 3 hours – Mo-Fr 9 AM to 7 PM
Districts 4 & 5	June 1997	Parking duration: 2 hours – Mo-Fr 9 AM to 22 PM, Sa, Su & holidays 6-10 PM.
Districts 2 & 20	March 1999	Parking duration: Mo-Fr 9 AM to 22 PM, 9 AM-7 PM.
District 3	November 1999	
District 15, Stadthalle neighborhood	September 2005	
Parts of Districts 12, 14, 15, 16 and 17	October 2012	

Source : Magistrat der Stadt Wien, 2016a. Table elaborated from various sources.

Conflicting views about the parking management's impact on car use reduction

A number of transport experts highlighted the impact of parking management on individual preferences through a price signal on the one hand, and awareness raising on the other hand. In the words of an interviewee: *"The incentive to shift from car use to public transport or active modes comes from parking charges creating a greater awareness of the costs of private motorised transport. As a tool, parking management tends to monetise some of the private car use's externalities and to imposes a greater share of this financial burden to car users as opposed to taxpayers"* (Interview transport expert 3, March 2016). Yet parking management was also considered among transport experts as a source of ambiguity in terms of the signal sent to car users both within and outside parking management ones: the price incentive was not considered high enough to deter car users and insufficient to cover the cost of negative externalities. More precisely, residents were given a greater number of options, but not encouraged to sell their cars, while at the same time, car drivers outside parking management zones who

could afford parking prices or enjoyed free parking spaces in their workplaces were not sufficiently incentivized to use alternative transport modes (Interview transport expert 2, March 2016). Between 1997 and 2005, the number of public parking lots in garages accessible to the public increased by 73 per cent (Stadt Wien, 2013b). The significant reduction of off-street parking was particularly marked in the inner-city centre and supported the city's application to the UNESCO World Heritage list, which became effective in 2001: "*Parking cars have been completely eliminated from a number of historic squares (Franziskanerplatz, Josefsplatz, etc.) within the historic city center*"⁸⁸. Insofar as a large share of parking facilities were developed by a city-owned company, including some 45 per cent of park-and-ride facilities, parking management was also used in order to make on-street space available for other activities, including "green spaces, playgrounds, pedestrian areas and revitalized historic places"⁸⁹. Furthermore, the amount of parking fees was not considered high enough to support sustainable transport measures beyond necessary accompanying measures. This altogether justified the scheme's strengthening after 2006.

Greening the parking management initiative

The greening of the parking management initiative was achieved by adjusting the scheme itself and by enhancing it through traffic mitigation measures. In a context of increased pressure from the Green Party (see Section 3)⁹⁰, the overall system was strengthened as of 2006. By 2012 some small-scale adjustments were made to the price structure and accompanying measures. By then, parking management was explicitly charged with two additional overall objectives, alongside improving the parking situation for residents and commercial uses (e.g., deliveries, shop-owners) and the reduction of motorized traffic: generating more income for sustainable transport measures and a positive environmental impact. As a result, parking management now pursues two sets of objectives (Institut für Verkehrswissenschaften, 2013):

- Transport planning objectives, including 1) Incentivising short stays, 2) Increasing the turnover of parking spaces, 3) Reducing parking space occupation rates, 4) Reducing traffic searching for parking spaces, 5) Reducing double parking and parking in undesignated spaces
- Wider environmental objectives, including: 1) Reducing pollution (including noise pollution, emissions and particulate pollution), 2) Improving public realm and experience of public realm, 3) Improving life quality for residents, 4) Incentivising the modal shift from private motorised car to public transport

Adjustments were also brought to the initial scheme in order to strengthen its impact. First, the cost for a one-hour parking ticket rose from € 0.80 per hour – already considered among the highest in European cities with on-street parking charges (Transport committee on transport, 2005, 44) – to € 1.20/hour in 2006 and up to 2 € in 2012. Since then, residents of the districts with parking management can purchase an annual long-term parking ticket. Between 2006 and 2012, regular assessments have confirmed that the measure's main impact was the reduction of demand for parking spaces by 1/3rd, of parking space load and of traffic searching for parking space (Sammler et al., 2012). Second, modal shift between 2006 and 2012 justified the city's continued efforts to support public transport. Among non-residents trips towards areas where parking management was introduced, 49 per cent shifted to public transport or active modes, 22 per cent looked for their parking space in a district/area not charging for parking, 15 per cent parked in a garage and 11 per cent started carpooling (Ibid.)⁹¹. In the meantime, 56 per cent of non-residents trips towards these areas are now made by public transport (Ibid.). These results justified introducing accompanying measures, such as the dismantling of on-street parking and urban design initiatives, as part of the city's continued efforts to support public transport. More precisely, these measures aimed at prioritizing public transport, reducing traffic speed and enlarging sidewalks. This was particularly the case at intersections.

Furthermore, the city drew on federal legislation aimed at mitigating the impact of car traffic. This intensified after 2006: traffic speed limits were lowered on arterial roads from 60 or 70km/h down to 50km/h, and

⁸⁸ See description on the UNESCO World heritage website (op.cit.).

⁸⁹ Wipark website: <https://www.wipark.at/eportal3/> (last consulted January 2018)

⁹⁰ For the Green Party's traditional strongholds, see above (section 3, politics in Vienna).

⁹¹ See below about the regulation of carsharing services.

in 2006, a city-wide traffic limit of 50km/h was imposed (D3.2 Vienna report). Whilst a 30 km/h speed limit had been introduced on some 33km of the total road network by 1987 and remained primarily concentrated in the urban core, low speed restriction zones were systematically introduced following the adoption of STEP 1994. In 2013, this amounted to 1,502 kilometres that is, 58 per cent of the road network. Alongside speed limits, traffic calming measures were achieved through a series of urban design initiatives, including widening sidewalks reassigning road space for pedestrian use and establishing bus lanes. As summarized by an interviewee: *“Traffic calming measures were introduced. Road space was narrowed and safer intersections were built by taking away off-street parking spaces at intersections. A speed limit of 30km/h was introduced across the board barring the arterial roads”* (Interview Transport expert 1, March 2016, TbNB). The urban dimension of transport was continuously strengthened by the use of the parking management scheme as a backbone for a large set of initiatives to contain car traffic over ground. As confirmed during discussions in the CREATE project: *“During those years in Vienna, public transport was not a stand-alone measure. But high levels of public subsidies became an argument for other policies to be introduced, from the parking management to pedestrian areas”* (Presentation at CREATE workshop, Paris, April 2017).

Strengthening public transport through successive organizational reforms

Alongside the city's efforts to reduce congestion through parking management, public transport emerged as Vienna's major transport priority. This shift was first achieved through significant organizational reforms and the search for additional funding sources. This approach was briefly introduced as follows by Rudi Schicker, a prominent SPÖ figure, also one of the architects and promoters of the “Viennese public transport model”, during a talk⁹²: *“Ensuring the availability of public transport is one of the most important tasks for cities in the field of infrastructures. Therefore, Vienna is committed to have the Wiener Linien remain public and not privatized. This ensures mobility for all people in Vienna”* (translated from SPÖ Klub, 2011, TbCH).

The ruling majority found it increasingly difficult to justify high levels of debts in the context of shrinking fiscal room for manoeuvre. The Wiener Stadtwerke was split off from the city administration and transferred to a newly-established, joint-stock company in 1999. New subsidiary companies were created, including Wiener Linien, who took responsibility for public transport in 2001, and the respective roles of the city, acting as public transport authority, and the Wiener Linien, was incrementally redefined: whilst the former played a key role in setting long-term transport policy objectives, the latter gained increased autonomy over its effective implementation that is, route planning and speed, timetables, intervals, etc. From the city's perspective, the decision was also made to increase the use of public transport through higher levels of public subsidies. Rather than reducing the existing costs and services, the ruling majority sought to increase the city's general revenues and secure alternative funding. In exchange for continued support to public transport (and Wiener Linien), the 2001-2016 contracting period also introduced a series of measures aimed at ensuring greater accountability as well as to increase user friendliness. From the newly enterprise's perspective, this changed status fostered its reinvention as an integrated transport operator. An organizational public transport model seeking to bring benefits for travelers as well as economic benefits for the company was introduced. There again, the change was incremental and considerably increased after STEP 2005. From then on, efforts to increase mode shift also relied upon a marketing strategy that combined the development of information tools, with public engagement, advertising and enhanced customer service.

In parallel to these organizational changes, transport planning and capacity investment initiatives were combined to strengthen public transport supply. The aim was for the public transport network to cover the whole built-up area and to ensure that the entire Viennese population should be residing or working at a walking distance (less than 500 meters) of the nearest public transport stop. Rail-based networks were considered the backbone of the city's transport networks, and both regional railways and the metro benefited from continued investment and extensions (see Table 3). In the case of the metro, two main funding sources contributed to the funding of increased capacity investment: local payroll taxes were introduced in order to levy additional revenues at city level, and the Federal government also contributed to 50 per cent of the costs through its car tax system and fuel taxes. Existing metro lines were extended between 1993 and 2008 to offer city-wide direct access to all districts, and all underground lines started operating on weekends in 2010. As of 2005, planned developments

⁹² Rudi Schicker was City councillor for urban planning and transport between 2001 and 2010, and chairman of the SPÖ group in the Vienna Parliament.

across the Danube justified additional extensions to the public transport system, including towards the outer districts.

Table 3. Metro extensions between 1993 and 2008

1969	Start of underground construction work
1978	Completion of the core network for the metro line U1
1980	Completion of the first branch of metro line U2 to Schottenring
1981	Completion of the first branch of metro line U4
1993	Extension of the metro line U3 from Volkstheater to Westbahnhof
1994	Extension of the metro line U3 from Westbahnhof to Johnstraße
1995	Completion of the first branch of metro line U6 to Siebenhirten
1996	Extension of the metro line U6 to Floridsdorf interchange Handelkai with the commuter rail S45
1998	Completion of the first branch of metro line U3 to Ottakring
2000	Electrification of the route Sopron to Deutschkreutz
2000	Extension of the metro line U3 to Simmering
2006	Extension of the metro line U1 to Leopoldau
2008	Extension of the metro line U2 to Ernst Happel Stadion
2010	Extension of the metro line U2 to Aspernstrasse
2013	Extension of the metro line U2 to Seestadt

Source : Compiled from Verkehrsverbund Ost-Region, 2016.

Yet the division of tasks between over and underground transport was also redefined as a result of Wiener Linien's own evolution. Since its creation in 2001, this transport company self-defined its role as an integrated transport provider. A comprehensive set of measures aimed at making buses and trams attractive again. Capacity investment varied according to levels of density and estimated growth by 2010. In those areas where no metro extensions were planned, bus services were reorganised and increased by 31 per cent. Tram lines extension remained limited. Traffic speed and public transport reliability was mainly increased by prioritizing public transport over motorized traffic. This was particularly the case at intersections and investment was made in order to segregate road space from public transport routes where possible. A dynamic automated traffic signalling system was introduced as a test bed in 1995 and by 2010, the system was extended to the entire surface transport network. Higher frequencies were introduced, including during off-peak hours and the night bus lines network was reorganized. The development of surface public transport networks was particularly pronounced outside the city centre, in order to increase accessibility in outer districts. Following the introduction of STEP 2005, attention shifted away from quantity towards greater comfort and environmental impact. A large share of the bus fleet was switched to natural gas in 2003 and also increasingly addressed accessibility issues. In addition to these adjustments, increased efforts were made to strengthen the regional dimension of public transport. There again, the role of federal organizations and legislation was instrumental in providing increased resources and opportunities. Following the creation of an integrated Federal ministry in 2001, local authorities were incentivized to enlarge and strengthen the regional transport association in support of public transport initiatives. There again, the capital-city region acted as a frontrunner with the VOR's reach being extended to the adjacent province of Burgenland. It took over the management responsibilities of the Verkehrsverbund Niederösterreich Burgenland (VNVB) and aimed at *"providing a more integrated transport offer and fare structure for the 3.7 million residents in the region"* (BMVIT, 2016).

Assessing the city's strategy from a governance perspective

Together, these initiatives fostered the emergence of the "Viennese approach to public transport" (Kostal et al., 2012). They considerably enhanced the attractiveness of public transport in Vienna. Between 1993 and 2010, the public transport supply increased from 11,8 to 12,4 million seat-kilometres. Towards the end of the period, the modal split for trips by public transport had risen by 20 per cent between 1991 and 2010. In 1991, on an average weekday the share of trips taken by public transport was 29 per cent this rose to 35 per cent by 2010. Within this metropolitan-wide system, the Wiener Linien network rapidly emerged as the backbone of the regional transport association and now transports up to 90 per cent of annual passengers' journeys. The number of passengers using the VOR regional public transport system rose by 22 per cent between 1990 and 2012 (Bühler et al., 2017). From a governance perspective, both policy tools – parking management and public transport reform – were instrumental as part of the SPÖ's strategy to redefine its political leadership in a rapidly evolving socioeconomic environment. In view of the Green Party's continued push for a sustainable approach to urban transport, the combination of both tools offered some opportunities to incrementally integrate their demands. Furthermore, the parking management initiative primarily drew on the city's political resources and ability to impose this transformative measure across districts and social groups, the strengthening of public transport mainly drew on financial resources and the ability to maintain political leadership over the pro-public transport

community. As summarized from a critical point of view in the following quote: *“The good old public transport approach triumphed. There is nothing really innovative about it, nothing about awareness raising for example. And at the same time, the parking management system allowed traffic to flow”* (Interview Transport expert 3, March 2016).

4.3.4 Recurring transport controversies as a challenge to the post-1991 consensus

Regardless of the results achieved in promoting mode shift and taking cars off the streets, the ruling majority's transport strategy met with a growing variety of criticisms. This is partly resulted from transport issues being instrumental in a context of unprecedented levels of political competition. Yet these claims also highlighted the contradictions inherent to the city's strategy, which are very much captured in the following quote: *“the idea was – and still is – that congestion at peak hour is acceptable, otherwise, that road would not have been built. The policy follows a simple idea: if you want to take a car, you have to be able to travel quickly. But then the city also needs to offer strong alternatives”* (Presentation at CREATE workshop, op.cit.). Representing the interests of a large variety of stakeholders, they confirmed the growing salience of transport politics and highlighted the ruling majority's growing difficulties to integrate this large variety of claims through existing forms of governance.

Is it worth the cost, is it worth the effort? A large number of disconnected demands

Criticisms against the post-1991 consensus led, towards the end of the period, to a growing number of claims related to the city's strategy or its impacts. These demands, originating from a variety of stakeholders, culminated during the 2010 municipal election campaign.

First, commuting traffic from across the city's border was now considered to be a major source of political and social concern. As the region benefited from an increased influx of population from the rest of Austria and neighbouring countries, the existing public transport and road network in Vienna under growing pressure. The City of Vienna – and more particularly, the inner-city districts – were criticized for shifting congestion and other negative externalities of car use towards the outer districts and the neighbouring province of Lower Austria. In the absence of effective land-use regulation on both sides of the city's fringes, additional feed-in routes or park-and-ride facilities were needed. Local authorities adjacent to Vienna regularly highlighted the city's insufficient efforts to develop park-and-ride facilities – 14 were developed between 1994 and 2014, with some 9.035 parking lots⁹³ – which in turn resulted to shifting the burden outside the city's borders. By contrast, a number of stakeholders in Vienna raised their concerns about the long-term impact of the city's strategy on congestion and constraining car use in the absence of a city- and metropolitan-wide strategy.

This discussion also linked with on-going discussions about the efficiency of parking management as a tool. It was often depicted in public debates and expert inputs as a catch-all policy instrument, whose own effects disconnected from all other transport measures adopted in public transport since 1993, were almost impossible to assess (Interviews City administration, February 2016 and Transport expert 2, April 2016). It was widely acknowledged as a tool aimed at addressing road congestion, but its effect on car use reduction and mode shift towards non-motorized transport was questioned. This was further confirmed during discussions within the CREATE project: *“It is primarily meant as a tool to reduce congestion. And in effect, traffic flows freely in Vienna, with no excessive delays”* (Paris, March 2017). The amount and uses of parking revenues only contributed to a limited extent to financing public transport and sustainable modes. More fundamentally, the scheme did not lead to significant reallocation of road space to other users, with the exception of the 1st district. Furthermore, the design of the parking management scheme and its implementation in a consensus-seeking political environment, increased opportunities for stakeholders at district level to resist its further expansion or to successfully negotiate exemptions. The evolution of the overall car parking demand and supply was regularly highlighted in order to exemplify the tool's limitations: car parking demand continued rising within the city as a whole, as did investment in public- and private-owned garages and park-and-rides: the number of off-street public parking lots in garages accessible to the public grew from 39,625 in 1997 to over 90.000 parking lots divided between 272 garages in 2014 (D3.2 Vienna report).

⁹³ See D3.2 Vienna report, Graph p.19.

A third series of criticisms relates to the effective capability of the city administration to monitor the work achieved by Wiener Linien was also regularly questioned. Organizational reforms did not lead to increased transparency in the daily operation of the public transport system and the selection of preferred options (e.g., route planning, frequencies, etc.). More than ever, Wiener Linien – and more generally, the Wiener Stadtwerke – was compared to a “state in a state”, which increasingly sought to pursue its own interests. In effect, differentiated forms of decision-making derived from these organizational reforms: on the one hand, increased efforts to engage a wider range of stakeholders and the public in the setting of policy goals, and on the other hand, a perpetuation of the former corporatist form of policy-making at implementation stage, with the city administration linking through its utilities companies, with economic interest groups (Chamber of Trade and Industry), workers’ representatives (Federal Chamber of Labour, Wiener Linien’s works council) and users groups. Resistances from the public transport sector were regularly mentioned in order to account for the limited development of cycling facilities and for the difficulties encountered in implementing shared space principles. Pro-cycling organizations were particularly critical of the post-1991 consensus, which offered very limited scope for developing cycling. In spite of Mayor Häupl’s efforts to accommodate their demands through small-scale adjustments to forms of transport decision-making and the range of cycling initiatives, their effective ability to strengthen the role of cycling in the city’s transport system remained limited. By contrast, a series of flagship measures were introduced, such as a bike sharing system in 2003 and a citywide car sharing system⁹⁴. In this context cycling organizations still relied on attention-seeking forms of mobilizations in order to channel their demands.

Transport controversies: ÖVP and the Green Party as policy entrepreneurs

Drawing on these criticisms, political parties in the opposition took the opportunity of the 2010 municipal election campaign to promote alternative transport policy solutions. Two major transport policy controversies shaped the 2010 municipal electoral campaign and contributed to the politicization of transport issues: about the night traffic on the U-Bahn and about the city-wide congestion charge.

First, an ÖVP-led proposal, championed by the Young Conservatives’ leader, aimed at introducing night traffic on the U-Bahn in order to lower emissions. Night traffic had already been introduced in 1986 through bus services, and thoroughly reorganized and extended in 1995. The Conservatives received the support from the Green Party on this issue, who argued the cost of running the service represented a good investment. By contrast, the City, together with Wiener Linien and police forces, argued that night bus services sufficed and highlighted that the costs of night traffic on the U-Bahn would be significantly higher. Last but not least, the FPÖ suggested finding a middle way in order to extend the operational hours of the U-Bahn to 2am while using the budget to densify the public transport supply on the edges of the city (Wiener Zeitung, 2009; Heute news 2010). Discussions were framed around the issues of costs, security and performance of the public transport network. In the end, the ruling majority resorted to using a referendum in order to seek citizen’s opinion, and the night traffic on the U-Bahn was accepted with a majority of 54 per cent (Heute News, 2010). Its implementation was delayed due to staff’s resistances within Wiener Linien and police forces, as this initiative implied a profound reorganization of the extensive night bus network. As of now, it offers extensive mobility options at night-time on weekends for a total cost of some €10.7 million per year from the city’s budget (Die Presse, 2010)⁹⁵.

A second proposal stemmed from the Green Party. Although they did not aggregate all demands about transport, the Greens joined together with ecologist and pro-cycling organizations in order to promote an alternative to the post-1991 consensus. Together, they pushed for a comprehensive, citywide sustainable urban transport agenda. This included both strengthening restrictions on car traffic and increased support to public transport. Cycling organizations advocated the city’s cycling policy objectives or “Cycling 2000” to be effectively implemented through added investment and repeatedly highlighted the number of opportunities offered in the context of the post 1991 consensus. Highlighting the benefits of the parking management system for increased fluidity in traffic flows, they recommended targeting cyclists through dedicated investments on road space aimed at enhancing traffic fluidity for cyclists, through traffic signalling, new road traffic regulations and a seamless cycling network. They also shared their concern for the limited benefits gained from urban design initiatives on major streets in the inner-city. Drawing on initiatives underway in Paris and Copenhagen, they promoted the idea of “car-free neighbourhoods” in order to ensure maximum levels of safety and foster alternative street-uses. This

⁹⁴ Today the four most important car-sharing operators are DriveNow, Car2go, Zipcar and Flinkster.

⁹⁵ As opposed to €7 million for running night bus services prior to the referendum.

approach drew, to some extent, on the work achieved at Federal level within the cycling lobby in order to promote a “gentle mobility” approach that included reframing cycling – and to a lesser extent, walking – as transport modes, reducing road space devoted to car uses, and strengthening the urban dimension of transport through urban design initiatives.

With respect to restrictions on car use, ecologist groups and the Green party drew on policies implemented elsewhere in Europe, such as low emission zoning in Berlin, in order to highlight an alternative strategy to the one pursued in Vienna. One of our interviewees summarized this view as follows: *“There was also an awareness early on that whilst this policy did reduce the attractiveness of the private car, it did not address the environmental friendliness of the car, meaning that it did not encourage the uptake of more environmentally friendly transport modes or technologies”* (Interview Transport expert 3, March 2016). In the context of the 2010 municipal election campaign, they suggested introducing a congestion charge (*CityMaut project*) in order to further reduce car traffic and ensure greater revenues in support of sustainable urban transport measures (Furst, Dieplinger, 2014). In this case, it received no support from other political parties and was discarded as a “false good idea” in a number of expert interviews⁹⁶. There again, a referendum was organized, leading to the initiative being rejected by over 75 per cent of the electorate (out of a voter turnout of 36 per cent) (Die Presse, 18/01/2010). During the rest of the campaign, the Green Party continued singling out transport in their manifesto. They advocated an expansion of the parking management scheme towards outer districts, the development of fast trams into the surrounding areas and a public transport reform with cheaper ticket prices. These transport controversies highlighted the growing difficulty of SPÖ, the City administration and the pro-public transport coalition to contain demands stemming from those advocating a more sustainable approach to urban transport.

4.3.5 Concluding remarks, integrated approach

Transport policies underwent profound changes between 1991 and 2010 and somewhat contributed to strengthening the urban and regional dimension of transport. Mainly framed into debates about congestion and accessibility, these initiatives combined car use initiatives together with massive efforts in support of public transport. Another distinctive characteristic of transport policy developments in Vienna lies with the need to preserve the urban core’s historic heritage while at the same time, strengthening the city’s central location as a European hub. Debates about the parking management initiative and successive adjustments brought to the initial scheme capture the contradictions inherent to these city planning goals and the ways through which local elites are pushed to develop innovative strategies in order to overcome political and social resistance. When considered in the framework of the CREATE transport policy cycle evolution, these developments confirm the dominant role of stage 2 thinking throughout this third sequence and the role of multiple barriers against the emergence of a sustainable urban transport agenda (stage 3). Yet at the same time, and when focusing on travel behaviours in Vienna only, there was a continued mode shift away from car use.

Throughout this sequence, the overall urban governance system was increasingly challenged, and in transport, this led to continued issue salience. There was raising concern regarding this urban growth model’s unsustainability. More specifically, the idea that combining added public transport capacity and parking management would not be sufficient in order to maintain high quality services and urban life found a growing echo among the local population and political party system.

4.4 Current challenges and future perspectives: towards a sustainable transport agenda

Unlike previous sequences, recent transport policy developments in Vienna have been primarily shaped by debates and controversies taking place at city level and less so by Federal transport politics. At Federal level, transport priorities still focus on a pro-growth agenda and the strengthening of traffic mitigation measures, whereas at city level, the urban dimension of transport was incrementally strengthened in the context of increased political competition. Following the 2010 elections, the Green Party became a coalition partner in the ruling majority and Maria Vassilikou, head of the local Greens, was nominated vice-mayor and deputy mayor for urban development, transport, energy and citizen participation. Since then the Green Party has been pushing for

⁹⁶ See for example an interview of H. Knoflacher, one of Vienna’s leading transport expert at the Technical University: *“In reality, we already have a form of city toll, just not in the way that electronics companies would like it be. Of course, they have the greatest interest in promoting their things”* (Die Presse, 11/01/2010, TbCH).

greening existing policies and introducing a comprehensive sustainable transport agenda (stage 3). This will be successively addressed in the following section.

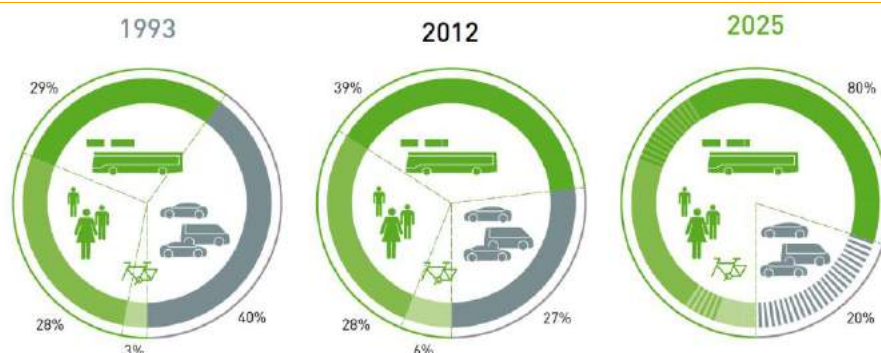
4.4.1 The implications of the Smart City agenda for transport planning

The latest urban development plan, the Stadtentwicklungsplan 2025 (STEP 2015), was adopted in 2014. Drawing on the expertise gathered during preparatory works, it identifies the key drivers shaping urban growth in Vienna as well as the region's resources to address new challenges. Two major sources of constraints are considered in this policy document in order to justify a changed approach to city planning and those policy areas pertaining to the federal state's smart city agenda. First, it confirms population growth estimates – a total of 1,8 million in 2012, 2 million expected sometime between 2024 and 2029 – and highlights the need to adapt city planning principles in order to maintain high levels for quality of life. More precisely, the city plans with a yearly increase of 25.000 people and 10.000 housing units. This justifies the introduction of the liveable city agenda and as part of it, specific targets related to the protection of green spaces, attracting businesses, housing developments and last but not least, mobility management. Whilst the need to protect the Wienerwald and ensure sufficient access to green spaces, a few urban development areas are singled out in this policy document, among which the main station (Hauptbahnhof), Aspern Seestadt and the Danube City. In terms of the concrete tools brought forward in order to achieve these ambitious goals, the policy document suggests combining new technologies – or smart city solutions – together with land-use regulation – or densification strategy. Furthermore, it also indicates a shift in policy processes, with the city now going beyond its role as rule-maker in order to actively oversee implementation: “set a framework mainly through rules, principles and processes” (Stratil-Sauer, 2015, 6).

The Urban Mobility Plan Vienna (or Vienna's SUMP)

This spatial planning document also sets out an action plan for mobility, adopted a year later in 2015, which specifies the role transport plays in achieving these objectives. In regards with transport issues, this policy document results from a new compromise between, on the one hand, the Green Party and the SPÖ, and on the other hand, between representatives of three transport policy coalitions – pro-car, pro-public transport and pro-cycling. First, the document suggests replacing the integrated transport approach with an integrated mobility management approach. New transport policy objectives are introduced, aimed at further reducing the role of the car and strengthening the “Green alliance” (Umweltverbund). For the first time, the city's transport strategy clearly states that building new roads is not a priority anymore. Furthermore, the focus is not solely on public transport as the main alternative to car use, but on strengthening cooperation between all three sustainable transport modes: together, public transport, walking and cycling amounted to some 72 per cent of the modal shift in 2014 and this policy document sets an objective to reach a mode shift of 80/20 by 2025 (see Figure 2a). In order to do so, the Urban Mobility Plan highlights the need for new ways to negotiate effective implementation by district administrations and the Wiener Linien. This is justified as follow in the case of the public transport company: “like any other stage 3 city in CREATE, we are struggling a lot as a city, we see that. They don't like cycling, walking and all these soft measures. But they make their own goals now, they don't take our goals as such. ... We need to do it with them, together, and sell mobility choices in one hand. We cannot do it without public transport” (CREATE workshop, Paris, April 2017). The notion of “partnership control” (*partnerschaftliche Steuerung*) captures this evolution and echoes the above-mentioned concern for the city's changed role at implementation level (Stratil-Sauer, 2015, 18-22).

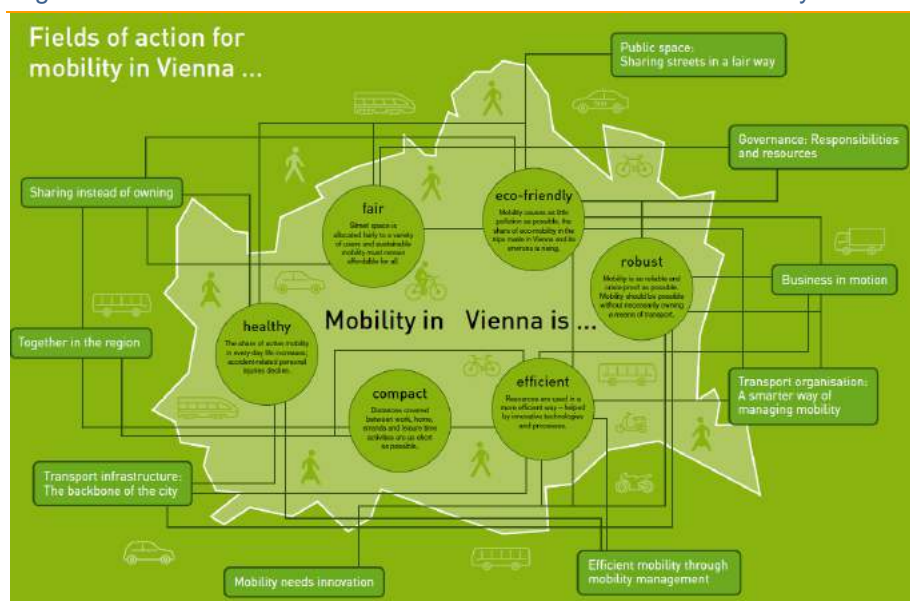
Figure 2a. Modal shift goals by 2025: The Green alliance



Source: retrieved from Urban Mobility Plan Vienna, 2015, p.6.

In order to achieve this goal, Vienna's Urban Mobility Plan relies upon different strategies or "fields of action" (see Figure 2b): first to contain car use and congestion through parking management and reduce its negative externalities; introduce technology-led optimising solutions on the existing network as part of Vienna's smart city's agenda; strengthen the urban dimension of transport policies citywide, and not only in the urban core, through the development of urban design initiatives. More precisely, it includes some 50 measures and seeks to strengthen sustainable mobility policies across transport modes and users' groups. From a political perspective, this document highlights the need for a new compromise between private motorization and sustainable modes, thus suggesting using the city as a laboratory in order to experiment between 2010 and 2014 – a period corresponding to the Green-SPÖ's first term as a coalition government – before expanding and systematising those that have proved effective. In other words, tools aimed at reallocating road space to other users and dismantling parking spaces are yet to be invented, financed and enforced.

Figures 2b. Fields of action as identified in the Urban Mobility Plan Vienna published in 2015



Source : retrieved from Urban Mobility Plan Vienna, 2015, p.6.

Regional travel demand as the new frontier

STEP 2025 also confirms the regional dimension of spatial planning objectives. Developments underway in the outer districts and outside the city's borders are considered a source of concern. Similarly to other cities under study in WP4, the modal shift for Vienna and for commuting traffic from surrounding areas are the opposite of one another: 28 per cent for motorized individual transport versus 72 per cent for sustainable modes (walking, cycling and public transport), whereas, 79, per cent of daily commuters travel per car as opposed to 21 per cent for public transport. Furthermore, this commuting traffic is rapidly growing, with an increase of 14 per cent since STEP 2003. Taking a long-term view, STEP 2025 frames transport issues in a regional perspective. Some urbanization trends result from new economic and employment centres, which were built within Vienna's borders. As part of post-2008 pro-business and -growth agendas, land use regulations have been weakly effective. This, in turn, encourages low density, car friendly developments at the city's fringes. As specified by our interviewees: *"The economic interests are discouraging the politicians from intervening. There are strong links between politicians at the city and state level, and industry... These out of town employment centres are not that well connected by public transport, more easily reached by private car and often have parking on offer for free"*. (Interview public transport expert 1, March 2016, TbNB). Indeed, increased incoming commuting traffic is also explained in relationship with low-density urban developments and demographic change in surrounding localities⁹⁷.

⁹⁷ For an overview of developments taking place in the metropolitan region across a number of issues (demographics, transport, economic development etc.), see the online information tool provided by the city-regions' website: <https://www.stadtregionen.at/wien> (last consulted February 2018)

Even though some efforts were made outside Vienna to designate urban development areas and densify existing settlements, suburban settlements are increasingly car dependent and existing public transport supply often fails to provide a strong alternative in low-density settlement areas. Several factors account for this: higher levels of car ownership, the large spread of company cars and scarcer public transport access. This is further illustrated in the following quote: *“For example in Mödling, located South of Vienna in the surrounding province of Lower Austria, car ownership levels are twice as high as in Vienna. This causes serious problems for commuting traffic. Work and educational commuting car travel takes on twice the mode share that public transport does and when considering remaining travel, such as leisure, shopping, etc., there is gap of 10 to 1. ... On the city’s borders, the overall distribution is of 4 to 1”, (Ibid.).* Although most areas within 30km around Vienna have good public transport access from their respective urban core, this does not incentivize them enough to shift to public transport. Our interviewee continues: *“The problem lies in the details: even when residents can access the public transport network, this may not be that direct a connection with their final destination in urban Vienna. The financial backdrop also factors into suburban travel patterns. Nearly half of the car fleet are company cars, so that commuters travel cheaply by private motorised transport. It doesn’t cost them anything. When commuters need to cover for their travel choices, they tend to favour public transport options in high numbers”* (Ibid.). In regards with commuting traffic, STEP 2025 recommends increased public transport offer and reducing travel demand within the metropolitan area through land-use regulations. A transport strategy was developed in 2015 at the metropolitan scale (Stadtregion +) together with the federal state, the 3 provinces, VOR, ÖBB and ASFINAG (primary road network operator). Several options are currently under study in order to strengthen public transport networks, including regional railways, developing light rail lines or tramway lines and in low density/rural areas, increase “last mile” connections through bus lines, cycling and car-sharing.

The implementation of STEP 2025 and the 2015 Action mobility plan is underway, but analysing the selection of concrete tools through which the red-green majority proposes achieving these goals helps understand the shift towards City for life type of policies (stage 3). A key policy has been the reduction in the annual public transport ticket price alongside the continued expansion of parking charging and a target effort to improve the city for cycling and walking through the establishment of the Mobility Agency. By contrast to the previous sequence, transport controversies were more pronounced and highlighted the new ruling coalition’s attempts to openly challenge the role of the car through flagship measures rather than seeking for a compromise.

4.4.2 Greening existing transport policies: old wine in new bottles?

In the context of the liveable city agenda, pre-existing transport policy tools were continued but in combination with a bundle of sustainable and technical-led initiatives aimed at strengthening the urban and environmental dimensions of transport. Public transport and parking management are successively addressed in the following paragraphs.

Strengthening public transport: combining supply and demand factors

In line with policies pursued since the early 1990s, the priority given to public transport was confirmed even though it was combined with new efforts to combine its developments with active modes. The political target set for the mode shift was to reach a 40 per cent mode split for public transport by the end of the electoral period, which was in 2015. The base line in 2012 was 36 per cent. Increased support to public transport was critical to both coalition partners, and instrumental in order to ensure Wiener Linien’s support in order to develop active modes. To this end, Wiener Linien further expanded and strengthened a number of initiatives, among which was prioritizing public transport at intersections. This policy principle was made operational by strategically tapping into the resources made available for the smart city agenda and with the support of MA53, who now played a significant role within the city administration for all transport related issues. Prioritizing public transport at crossroads was achieved through citywide extension of traffic lighting technologies, which now concerned both tram and bus networks (Magistratsabteilung 53, 2015). Other initiatives included expanding existing public transport systems through new infrastructures and systematically draw on new technologies in order to optimise existing systems and develop new services citywide. Further investments were made in order to increase the number of segregated public transport lines. Together, these initiatives resulted in higher travel speeds and the network’s overall reliability.

Strengthening public transport supply was not, however, considered sufficient to achieve mode shift away from car use and **the red-green majority embarked on a strategy aimed at incentivizing demand through the fare policy.** The most visible – and hotly debated – change in public transport since 2011 concerns the fares structure and the city’s increased financial commitment to support public transport. The Green Party had

been supporting the reduction of the season ticket price for some time, as a preferred way to incentivise a mode shift towards public transport (Der Standard 2011). A “€ 1 per day” annual ticket was introduced in 2012 that is, at an overall cost of €365 per year for unlimited access to public transport. This represented a significant reduction from the previous price⁹⁸. A number of observers highlighted this decision’s political nature. As commented during discussions about the Vienna case in the CREATE project: *“They made a promise. If we are elected, we will reduce the price of the Public Transport annual ticket price. They did it, and just like that, they increased the shift towards public transport. They did a huge promotion campaign around it. This also was unprecedented. And then, they did it. Wiener Linien just had to cope with this: the financial impact and unexpected increase of passengers”* (CREATE workshop, Paris, April 2017). This price is indeed disconnected from operating costs. It is also significantly lower than the price for season tickets in Swiss or German cities (Buehler et al., 2017)⁹⁹. In regards to this initiative’s financial dimension, this policy’s cost was estimated at €25m to €30m. It was not funded by higher parking charges but instead by higher subsidies from the City of Vienna, which now subsidizes public transport operation by 40 per cent, that is some € 500 million per year. By contrast, only 55 per cent of the operating costs of the city’s public transport operator Wiener Linien are covered by passenger fares (Kostal et al., 2014). From a political point of view, a high subsidy cost of providing public transport to the city and the individual via the low-price tag of the annual ticket to the user was to be taken as a clear indication of the value the City of Vienna ascribes to a high public transport mode share and providing frequent, comprehensive public transport. Albeit being advocated as part of the Green Party’s agenda, this measure was also consistent with the traditional SPÖ-ÖVP approach for enhancing public services, including public transport, through the local welfare state. Yet, some concerns were voiced by advocates of a more managerial approach to the management of public services, highlighting the city’s entire transport strategy being dependent on its future ability to maintain such levels of subsidies¹⁰⁰.

Furthermore, maintaining lowest possible fares was considered counter-productive in terms of reducing the overall travel demand on the one hand, and on the other hand, ensuring compliance from transport companies to commit with the city’s demands. Apart from being a hotly debated political issue among political parties, this initiative was not welcomed by Wiener Linien. It was often used as an argument in negotiations with the city for justifying its inability to meet with requirements in terms of transport supply and quality standards (Interview City administration, February 2016). As part of preliminary negotiations on the 2017-2030 service contract, Wiener Linien had been advocating for increases in all fare categories. Discussions with Wiener Linien prior to the €1 per day ticket led to a number of adjustments that confirm the pivotal role of public transport in securing support from various social groups and political clienteles in the context of rapidly evolving urban politics. The fare structure strictly differentiates between residents and short-term visitors (e.g., tourists, business trips, commuters etc.), with increased fares for shorter-term tickets such as the daily pass or weekly pass. (Der Standard, 2011). By contrast, specific age groups, such as senior citizens, among which the mode shift is particularly encouraged now benefit from additional discounts with the support from both local and federal subsidies. Furthermore, higher penalties of €100 (previously €70) for using the public transport network without a valid ticket were also introduced alongside the reduced annual and monthly passes.

During the 2015 municipal elections campaign, a number of transport debates focused on assessing this measure’s impact, thus **highlighting again the instrumental use of transport policy measures in political and experts’ debates**. The Green Party positively assessed it as a consequence of the public transport’s attractiveness: *“Measured by the uptake in annual pass holders the fare reduction has been as success. The number of annual pass holders has risen from 350,000 to 650,000 today”*. (Vassilakou, 2015). Policy evaluations showed that only four years after this policy was introduced, 368 out of 1000 Vienna residents had purchased an annual pass, a rapid increase that contrasted with the steady yet low increase in annual pass uptake between 1995 and 2010. This was confirmed as part of the work done in WP3 in the CREATE project. In 1995, only 15.5 per cent of Vienna’s residents had an annual season ticket for the public transport service. Until 2010, the annual pass ownership base grew steadily by 2.4 per cent. In 2011, 21.9 per cent owned a yearly ticket and since then,

⁹⁸ €449 per year or €458 if paid in monthly instalments.

⁹⁹ These authors further highlighted the disconnect, from GDP per capita: 0.8 per cent of GDP per capita in Vienna versus 1.1 per cent in Munich or 2.5 per cent in Berlin (Ibid.)

¹⁰⁰ Without such high levels of subsidies, the price of the annual public transport ticket would probably double (Interview, City administration, op.cit.)

its share has increased regularly¹⁰¹. Yet within the red-green majority, there also was some criticism regarding the limited impact of the €1 per day ticket on the overall travel demand and the promotion of active modes. A number of experts highlighted the fact that most assessments were produced in-house and that more diversified expertise was needed (Interview City administration, February 2016).

Discussions within Vienna about this demand-oriented strategy have recently gained a regional dimension. As of July 2016, a new, in places significantly more expensive, fare structure was introduced in replacement of the zonal fare structure that had been in place since 1984 within the VOR jurisdiction¹⁰². By contrast, the Green Party suggested extending the reach of the €1 per day ticket to the wider metropolitan region in order to develop strong sustainable transport alternatives for those commuting to Vienna¹⁰³. In this respect, it actively seeks to lobby stakeholders in the VOR and Federal administrations and agencies, among which is ÖBB, in order for the annual ticket to be valid for the rail network beyond Vienna. This proposed scheme met with recurring opposition from the Conservative Party (ÖVP) as part of their strategy to position themselves at the pro-automobile lobby's champion. Following a slightly different argument, the FPÖ, who gained significant vote shares in the region since 2015, focuses on the interests of those living at the fringes of the city, on both sides of the border. During the federal legislative and presidential campaign, the City's insular strategy was further criticized in political discourses and the media. This quote from the national daily Newspaper *Der Standard* exemplifies this trend¹⁰⁴: *"The ÖVP claim the Green Party are attacking the motorists and their necessary trips and dreaming about the possibility to meet transport demand and needs with public transport"*. (Der Standard, 2016) Furthermore, their national representatives increasingly questioned the viability of the € 1 per day ticket from an economic perspective, highlighting the capital-city's expensive policies in contrast with what neighbouring provinces could afford to cover for. Whilst repeatedly highlighting the regional transport alliance's benefits for Vienna in terms of congestion reduction, political discourses outside Vienna questioned the rationale for adjacent provinces to subsidize the reduced annual ticket.

Mixed results in attempts to strengthen and expand the parking management scheme

Strengthening the parking management scheme and efforts to expand its reach proved altogether more controversial for the red-green majority and met with a number of setbacks. On the one hand, the new majority drew on past debates about parking revenues in order to further link the parking management scheme with the urban sustainable transport agenda. The existing scheme was strengthened, with the one-hour parking ticket price increasing from € 2 in 2012 up to €2,10 in 2017. These adjustments have led, over time, to a significant increase from parking revenues, from € 66 million in 2010 to €110 million in 2015. When adding, respectively, €34 million and €62 million for penalties, this resulted into increased revenues for sustainable transport measures that are divided between public transport – some €117 million for Wiener Linien in 2015, and the rest between projects aimed at promoting safety, cycling or building new garages and parking (Der Kurier, 01/02/2016). On the other hand, adjustments brought to the parking management scheme also aimed at addressing residents' demands. Exclusive residential parking lots were introduced from 2014 onwards in order to ensure a vacant parking lot for residents in those areas, where the demand for short-term parking is too high and in view of increased car ownership. This in turn confirms the parking management tool's dependency to political forms of micro-management at district level as well as its limited impact on car use and ownership restrictions.

Meanwhile, the possible extension of the parking management scheme towards outer districts has been under discussion. Due to strong political and social resistances against the introduction of the "Parkpickerl"¹⁰⁵, its extension took place incrementally and gave way to further forms of micro-management at district, and sometimes neighbourhood, levels. In 2012, parts of Districts 12, 14, 15, 16 and 17 joined the scheme (see map 7b above). In order to overcome local resistance, an idea was to propose implementing only a parking charge for short-term parking that is, for 1.5 hours, in specific segments. The process was carefully monitored from within

¹⁰¹ See also D3.2 Vienna report, p.31.

¹⁰² See section 3. More precisely, passengers now pay for a multimodal fare from their start point to their destination, which is calculated based on a combination of the route, distance and jurisdictional boundary.

¹⁰³ The price tag that the Green Party estimates for this new fare structure is €9-15m per year. (Vassilakou, 2015).

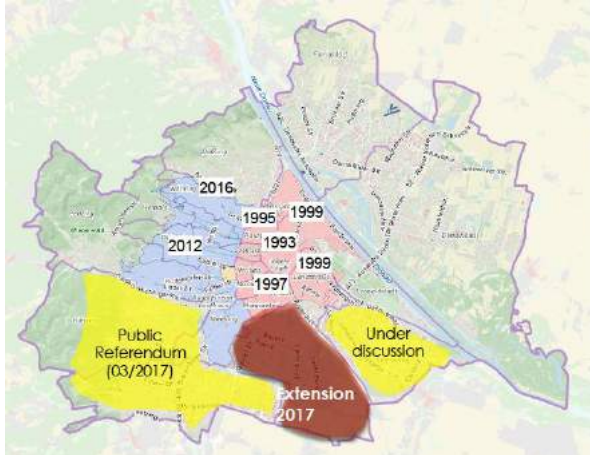
¹⁰⁴ It is usually considered to reflect social-liberal views.

¹⁰⁵ This is the colloquial name for *Parkraumbewirtschaftung*.

the city administration in order to assess the impact of parking regulation and identify possible extensions to the rest of the districts or to other outer districts. A basis was provided by a study produced in 2013, which showed that the parking provision and general traffic situation had significantly improved in those areas. (Magistrat der Stadt Wien, 2016a). Similar to the changes observed in other districts, this study recorded a reduction in the demand for parking spaces, a modal shift from car to bus and rail, and a reduction in car numbers by approximately 8,000 on weekdays. This was particularly the case among non-residents: before the introduction of the charge, a fifth of parking spaces were occupied by cars without Viennese registration plates. Since the parking is charged this figure has dropped to 3 per cent. (Magistrat der Stadt Wien, 2016d). Drawing on these findings, a commission of experts developed a new parking management scheme better suited for travel demand in outer districts.

Yet further expansions have raised some resistance in the ÖPV's traditional strongholds (e.g., districts of Hietzing, Währing und Döbling) and among the Austrian Automobile club (ÖAMTC) on both sides of the city's borders (see also Bühler et al., 2017). Whilst the former's views diverged regarding which accompanying measures should be introduced – parking lots for residents, park-and-ride facilities etc. – the latter recommended introducing a “green zone” in areas located outside the Wienerwald, in which parking costs would be introduced but not on a short-term basis. In the inner city and the Josefstadt, also in the hands of ÖPV, a demand for a 50-per cent quota for parking spaces for residents was successfully submitted to the commission on parking regulation. Public referenda held in 2017 led to mixed results (Map 7c), and as of now, the city administration proposes extending the scheme city-wide as an experiment and seeking for ex-post approval in those districts (per public referendum or decision within the district council), provided specific demands are taken into account through small-scale management. Following the district council's decision, respectively in May and December 2017, future extensions will take place in June 2018 in Hetzendorf, which is part of the 12th district (Meidling), and Döbling (19th district). By contrast in Simmering (11th district), also an area where housing prices are lowest, the decision was made by referendum (held in early 2018) and led to adopting the parking management scheme in the district's urban core, while rejecting it in new urban developments. More generally, these examples highlight the difficulties attached to extending this policy tool. As of today, it has been introduced in 17 districts out of 23 districts. **Among practitioners, subsequent adjustments and the growing number of exemptions raise some concerns regarding this policy's overall coherence at city-level.**

Map 8c. Current debates about parking management extensions (as of April 2017)



Source: Roeder & Klemensitz, presentation prepared for CREATE worksop, Paris, April 2017.

Regulating mobility services as part of Vienna's strategy for the sharing economy¹⁰⁶

As part of the changes brought on by the Urban Mobility Plan, the City also strengthened its regulatory role in the context of rapidly developing new mobility services, including initiatives stemming from the private sector. Additional costs of owning and using a private car did not necessarily imply a reduction in car use as such. Studies assessing the impact of parking management on car use showed that some 11% of car users started

¹⁰⁶ These paragraphs draw on research input provided by Gabriela Neves da Lima, during her internship at Sciences Po, CEE, during the Spring semester 2016.

carpooling (Sammler et al., op.cit.). As of 2018, a number of car-sharing companies operate in Vienna, mainly stemming from the German car industry¹⁰⁷, and have been promoting hassle-free parking and fuel efficient vehicles in order to attract new customers. Yet the arrival of Uber led the City to strengthen its regulatory role. In view of rising protest from the taxi industry, which maintains close tie with the SPÖ's, the Department for Transport in the Vienna Chamber of Commerce and the chairman of the taxi and car rental section in the Social Democratic Trade Union Association of Vienna led negotiations on Vienna's future Strategy for the Sharing Economy. Positioning itself halfway between the Berlin approach (ban) and the Amsterdam approach (cooperation), the City developed the concept of "private accommodation provision" in order to ensure some level of cooperation between the taxi industry and new platform providers such as Uber¹⁰⁸. A set of Operating Regulations for Taxis, Chauffeur Services and Guest Transfers was eventually introduced in order to regulate access through the setting of quality, safety and traffic requirements¹⁰⁹. In spite of developing a highly institutionalized framework, protest and legal actions against Uber services have continued.¹¹⁰

By incrementally adjusting pre-existing policy tools to new issues and new entrants, the Viennese approach to the reduction of car use confirmed its robustness. Governance arrangements confirm the role of transport in reinventing corporatist form of local clientelism and consensus-oriented politics in a new political context¹¹¹. Yet following the election of the red-green majority, increased efforts were also made to improve the city for cycling and walking.

4.4.3 The city as a laboratory: experimenting with sustainable transport initiatives (Stage 3)

Drawing on the ecologist movement's traditional action repertoire¹¹², the Green Party has also considerably enhanced the role of "City for life" types of policies in Vienna (stage 3 policies), which, until then, remained marginal. In order to do so, they relied upon an altogether more radical approach, which sought to increase the policy resources available for sustainable transport policy initiatives on the one hand, and to make these initiatives more visible on the other hand.

Enhancing public spaces through flagship urban design initiatives

Preparatory works for the new spatial planning document (STEP 2025, adopted in 2014) offered a first opportunity to mobilize resources within the city administration while at the same time, introducing extended consultation procedures among a large variety of stakeholders. First, public transport extensions were increasingly coupled with urban design initiatives. This started prior to the arrival of the red-green coalition, but it was considerably enhanced after 2010 and made more visible through flagship initiatives.

¹⁰⁷ This is the case of DriveNow and Car2Go. The former is a subsidiary of BMW, which operates in Vienna since 2014 and relies on a fleet for 700 cars. The latter is a subsidiary of Daimler AG, that provides car-sharing services across European cities, as well as cities in China and Northern-America. It started operating in Vienna in 2011 and in 2018, it claims to have 138.000 costumers registered (Car2Go Press release, February 5, 2018): <https://www.car2go.com/media/data/na/press/releases/3memberrelease.pdf> (last consulted on March 18, 2018).

¹⁰⁸ As of now, Uber operates in a highly institutionalized framework and offers three services, uberX, uberBLACK and uberVAN with comparatively high minimum fares (€3, €9, €9 respectively) and cancellation fees (€8, €10, €10).

¹⁰⁹ After considering quality, safety and traffic requirements, the City of Vienna does not have any objections in principle that taxi or chauffeur service companies accept assignments via internet platforms.

¹¹⁰ See recent court ruling, April 25, 2018.

¹¹¹ This is also the case in housing, with measures aimed at regulating tourist accommodation in conjunction with the arrival of Airbnb in Vienna.

¹¹² This notion refers, in the social movement theory (Tilly, 1986, 2), to the whole set of means [a group, a movement] has for making claims.

Until then, the opening of pedestrian zones was mainly combined with major underground investments and restricted to the historic city centre. A new bundle of policy resources and measures aimed at strengthening the urban dimension of transport was introduced as part of the city's "fair streetshare" policy (2011)¹¹³. In this respect, the Green Party sought to highlight the close interdependence between transport modes and the need to extend the integrated approach to active modes. As mentioned during interviews: *"Active travel and public transport are dependent on each other: high quality, extensive and affordable public transport offers the means by which those walking and cycling can travel longer journeys without being dependent on the car; equally, public transport depends on walking as this is how most public transport passengers access the station or stop"* (Interview Mobility Agency 2, March 2016, TbNB). In line with this new thinking, infrastructure investments were planned in favour of pedestrians and cyclists. There again, changes in the federal legislation offered a timely opportunity to experiment with new urban design initiatives in the vicinity to public transport nodes. As of 2013, the Austrian traffic code made the development of "encounter zones" (*Begegnungszonen*) or shared-uses possible that is, *"roads, which are intended to be shared by vehicles and pedestrians"* (StVO, § 2, TbCH). More specifically, this implies the reorganization of designated areas through urban design initiatives, 20km/h speed limit, prioritizing pedestrians, protecting vulnerable road users (pedestrians and cyclists), and limited parking spaces.

In Vienna, the decision was made to pedestrianize and open the Mariahilferstrasse to cyclists, a large, emblematic shopping street behind the newly redeveloped museum quarter. The decision itself followed a 3-year-long consultation period and was reached by referendum in 2014, among residents from both districts and thanks to a small majority of 53,2 per cent of votes. Led between 2013 and 2015, this project launched a major political controversy and strong opposition from the local and the national press. The shared space concept was also extended to adjacent streets, in order to reduce car use. Traffic calming measures, including a maximum 20 km/h speed limit in directly adjacent streets and 30 km/h speed limit in other through traffic and access routes, were applied in these areas to both car drivers and public transport. Lower speed limits were not, however, restricted to the inner city and adjacent districts, but following the election of the Green-SPÖ majority in 2010, another push was given to the city-wide expansion of speed restrictions under the policy objective of road safety with a particular focus around major transport nodes and in the vicinity of public spaces (Die Presse 2014).

There again, the selection of an emblematic road – the Herrengasse, located in the 1st district – gave visibility to this measure and offered an opportunity to draw on new financing sources. The Herrengasse was reorganized into an encounter zone in which walking was prioritized and all other transport modes, including cycling, being limited to a 20 kilometres per hour speed limit. Property owners alongside the street collectively committed to cover for the costs, estimated at € 6 million, while the City of Vienna undertook the refurbishment of underground networks (ORF, 01/12/2016). To this date, 6 encounter zones have been developed in Vienna, among which 5 are in inner-city districts (1st, 4th and 5th) and 1 in the 12th district¹¹⁴. Albeit the attention associated with such flagship project, it also highlighted the limits of small-scale initiatives in the absence of a more comprehensive, city-wide walking strategy as well as the lack, at Federal level, of policy resources and regulatory tools aimed at effectively prioritizing pedestrians. In this case, the Viennese approach was systematically compared, to its detriment, to experiences in French, Belgian, Swiss and Dutch cities (Interview Mobility Agency 1, February 2016)¹¹⁵.

Last but not least, specific emphasis was put on the development of cycling as transport mode, which remained low in terms of modal share, even though many inhabitants own a bike and use it for recreational purposes. To this end, the new red-green administration acknowledged the need for added policy capacity before engaging in city-wide policy initiatives.

¹¹³ *Strasse fair teilen*, Magistrat der Stadt Wien, 2011.

¹¹⁴ For an overview, see the dedicated website for Austria: www.begegnungszonen.or.at/bezo.php?sort=Gemeinde_ASC (last consulted February 2018)

¹¹⁵ See also the website of the Austrian Association for Pedestrians (Walk Space) : <http://www.walk-space.at/index.php> (last consulted January 2018) and Andreas Lidinger's analysis on the Viennecouver Blog : <https://www.viennecouver.com> (last consulted December 2017)

Organizational reforms and increased policy resources

As part of their agenda for sustainable transport, the Green Party and the ecologist movement also prioritized the need to foster increased policy resources – knowledge, expertise, funding, awareness-raising among practitioners and politicians, etc. – as a necessary step before reframing transport policy objectives. In this respect, they focused on the city administration, the weak development of alternative policy measures also being attributed to the city planning and transport planning culture within MA 18, MA 28, MA 46.

The creation of the Mobility agency in 2011 offered new opportunities for added capacity building in support of cycling and walking. It was initially established as the cycling agency, and extensively drew on resources accumulated over time as part of ARGUS in order to promote cycling. In the following year, walking was added to the agency's remit and it was renamed *Mobilitätsagentur Wien*. The agency was established as part of M128, which is responsible for the planning, construction, maintenance and general administration of the public road network, and it enjoys a semi-autonomous status. The decision that led to establish it as part of MA28 – as opposed to MA18 – confirms the agency's operational dimension and a clear political mandate to foster practical, concrete initiatives aimed at increasing the role of and space dedicated to active modes on the road network. It benefits from relatively small scale funding and administrative resources. Yet its semi-autonomous status also offers enlarged room for manoeuvre to promote active modes outside the range of classic policy tools. It is intended to act at the intersection between government institutions and the general public and incrementally self-defined its role as a think tank in the business of developing innovative ideas and as a provider of sustainable mobility solutions. This was further specified during interviews: *"The agency, which is not part of the city administrative and governance structure, acts as a go between, transmitter and negotiator between the general public, civil service and politicians with the specific remit for walking and cycling"* (Interview Mobility Agency 1, February 2016, TbNB). In its former capacity, it works with the technical staff in the city government – MA 28, MA 46 and MA 18 – in order to develop new idea on shifting mobility to the use of sustainable modes. More precisely, as explained in the following quote: *"the overall objective is to work on making cycling and walking in Vienna easier, more comfortable and safer"* (Ibid.). In view of the modal shift structure – 40 per cent public transport, 27 per cent car use and 29 per cent walking – cycling (6 per cent) was increasingly considered a strategic transport alternative.

In its latter capacity, the agency draws on the ecologist movement's action repertoire in order to give increased visibility to active modes through the organization and facilitation of advocacy campaigns, flagship initiatives and awareness raising (Blum, 2015). It also seeks to reach out to a distinct set of mobility experts in the academic sphere and to foster the emergence of broad issue network whose support could be mobilized during discussions with the city administration and traditional transport expertise. Through increased communication tools, the agency also highlighted the specific urban dimension of walking and cycling through events such as the Streetlife festival or "festival for urbanites" (since 2014) or framing these transport modes into the smart city agenda as part of the cycling year (2013)¹¹⁶ and the walking year (2015). In reference to the work done in Amsterdam, Copenhagen and other cities worldwide, the agency also drew on international networks and organizations, such as hosting the Walk 21 conference (2015), in order to use walking and cycling as an opportunity to strengthen Vienna's international profile and in doing so, reaching out to business actors by contributing to the city's place-making strategy. This also helped reaching out towards a large variety of stakeholders, with a specific focus on the general public, which constitutes one of its main targets.

Regular interactions with the public were also instrumental in identifying users' needs and prioritizing those policy initiatives and investments that would help increase the mode share of walking and cycling. As explained in the following interview: *"we went to the public and encouraged them to voice their concerns and ideas... We concluded that two things were needed: good and safe infrastructure as well as awareness of walking and cycling as a viable transport mode. And then of course, there were things we could do on our own, very simple things, but others we couldn't due to our limited resources."* (Interview Mobility Agency 1, February 2016, TbCH). More precisely, the agency developed a wide-range of information and communication tools aimed at transforming the general public's view on active modes and support their framing into proper transport alternatives. The regular production of reports and assessment for cycling also contributed to the agency's efforts to strengthen both the knowledge and capacity in support of active modes. The behaviour of cyclists was increasingly studied and added to the idea that these forms of mobility were to be included in transport policy

¹¹⁶ Following the organization of the Velo-City conference in 2013? A cycling manifesto was produced, including 8 strategies that would help transform the city into the "cycling city Vienna" (Dvorak, 2013).

objectives. In the case of cycling, the city's sharing system now amounts to 500.000 registered users, 118 stations and over 1.400 bikes. This demonstrated the continued increase in modal share from 2 per cent in 2002 to 6 per cent in 2011 (Mobility Agency, 2012). A similar strategy was applied to walking since 2015, with a first report published in 2015 that showed a 25 per cent modal split for walking and analysed the Vienna results in an international perspective. This first analysis clearly identified car traffic, urban design and the limited share of road space allocated to pedestrians as major barriers to the development of walking. By bringing together the information produced across various administrative departments and publicly reporting on progress made, the agency contributed to the framing of active modes as transport modes, and incrementally raised awareness among bureaucrats and planners the need to produce information, data and more generally, knowledge. Since then, there has been an increased effort within the city administration to measure these modes' respective mode share and to revise the location and amount of measuring points beyond traditional commercial and leisure areas.

The uncertain future of active modes in Vienna's transport strategy

Together, the combination between new transport policy initiatives and building policy capacity favoured the city's – and the red-green majority's - efforts to make the sustainable urban transport agenda come true. The knowledge and resources accumulated by the agency were instrumental during preparatory works for STEP 2025 and the thematic concept "Urban Mobility Plan Vienna", and since their adoption, at implementation stage, to support active modes and strengthen the urban dimension of transport. This included developing a comprehensive cycling programme, with yearly investment and a new range of services (e.g., apps, air pump stations, etc.). The following sets of arguments were instrumental in shaping the adoption of pro-active modes measures as part of the Urban Mobility Plan Vienna: increased safety, better health, support the economy and increased public space¹¹⁷. Indeed, when it comes to urban design initiatives, significant investment or changes in existing road traffic regulations, the agency still depends on their ability to negotiate with Wiener Linien and technicians within the city administration (MA28 and MA46).

Insofar as it was related to massive investments in public transport as part of the fares policy and the smart city agenda, some of Wiener Linien's reservations against measures having an impact in the operation of the surface network could be overcome. As of now, discussions focus on the ways through which larger flows of cyclists will be accommodated on the road network. Despite recurring demands from the Green Party and cycling groups, Wiener Linien continuously opposed the idea of transporting a bicycle on the public transport network free of additional costs and it still requires buying a special ticket (ibid.). Following the SPÖ-Green coalition's re-election in 2015, a regulation system based on a combination of incentives and penalties was introduced in 2017 in order to ensure compliance with levels of transport supply and quality criteria such as customer satisfaction, accessibility, cleanliness and safety.

4.4.4 Concluding remarks, stage 3

Over this last period, transport policy initiatives have resulted into increasingly visible and transformative changes in Vienna. The combination includes greening initiatives, aimed at adjusting pre-existing policy tools, policy experiments in order to strengthen the urban dimension of transport, and innovations in governance has resulted into an effective shift away from car-oriented policies. To be sure, these developments are more marked in the urban core and when related to heritage protection initiatives, yet they are being extended incrementally towards the rest of the inner-city, including inner-boroughs. They built on previous investment and initiatives aimed at strengthening public transport and reducing car dependency. Similarly to other cities under study in WP4, they also result from added policy capacity at city level to promote a sustainable urban transport agenda within the city administration, the political system, the transport sector and citizen.

Yet when considering the main drivers to policy change and the way through which policy processes unfolded, the Viennese approach also highlights old and new challenges. Political competition and high levels of politicization increased the potential influence of micro-level political management at the implementation stage, opening a large avenue for influence-seeking groups to obtain exemptions and maximise their own benefits. The number of transport controversies is also expected to increase, thus offering new opportunities for pro-car interests. This is currently the case with the Lobautunnel project, which would provide a rapid underground

¹¹⁷ See reports published since 2011, available on the Mobility agency's website <https://www.mobilitaetsagentur.at/publikationen-und-studien/> (consulted on January 2018).

motorway connection between the existing A4 motorway, under the Donau Island, to Seestadt Aspern and Bratislava (Wiener Zeitung, 02/02/2018). Last but not least, estimates for demographic growth and commuting travel demand also highlight the need to reframe Vienna's mobility policy goals in a regional and national context, and within the city's borders, to increase the level of constraint for car uses and low-density developments.

5 Conclusion

A major transformation has been observed in travel behaviour in Vienna since 1970 (D3.2 Vienna report). The share of car trips dropped to 26 per cent, and is particularly marked in the inner-city area. It can be measured by looking at the modal shift, the level of stress onto the road network, reduced numbers of highly polluting vehicles, and reduced numbers of accidents. Vienna has also seen a clear growth in non-motorized transport alternatives, with a 39 per cent share in public transport, and as of recent, in cycling (7 per cent) and walking (25 per cent).

Analysing transport policy developments in Vienna during the past 60 years helps to make sense of these changes. First, the analysis done in WP4 confirms the overall transformation of transport policies in Vienna and the shift away from car-oriented policies. Between 1954 and 2017, transport policies shifted progressively from planning for the automobile city (stage 1) towards planning for people (stage 2), which is still dominant in federal transport policies and to some extent, in transport policies at the city level as well, and planning for city life policies (stage 3), which have been incrementally introduced during the 2010s. Second, similarly to the situation observed in other WP4 cities, this evolution is not evenly spread in the city, with some strong differences between the historic city centre, and the inner and the outer suburbs. Beyond the city's borders, the role of the car remains largely dominant and fuels commuting traffic flows. Third, as observed in Copenhagen and Berlin, the incremental nature of policy change in Vienna contributes to exacerbating the overlap between the three policy types and for the transition being neither unidirectional nor evenly spread in the region. Similarly to the Berlin case, the Viennese model primarily draws on public transport in order to promote mode shift, which in turn accounts for the late development of an urban dimension to transport. In this respect, Vienna's historic urban core still benefits from tailor-made transport policy initiatives, including urban design and pedestrianizing initiatives.

Today, the three policy types coexist with one another, each benefiting from their own champions within the city administration, the political spectrum and the transport policy community at large.

The analysis done in WP4 also helps highlight the singularity of the Vienna case. This is further explained by examining governance-led explanations and how, together with macro-trends, these drivers shaped transport policy developments over time.

Robust forms of urban governance

A first explanation lies in robust forms of urban governance, which contrasts with other cases under study in WP4: the city enjoys extended powers in the context of the Austrian federal State and benefited from continued support – financial, regulatory, political – throughout the period considered in this report. Political stability and the SPÖ's hegemony over local politics accounts for the city's ability to incrementally adapt transport policy objectives and measures in relationship with unexpected events and new social demands. As part of the party's ability to maintain and transform a deeply rooted corporatist form of policy-making, SPÖ elites were able, together with the City administration and the city's utilities company to negotiate effective implementation with transport organizations, economic interest groups, workers' representatives, district administrations and residents' associations. By shaping opportunities for new entrants into the transport sector, it progressively integrated social demands into the local policy-making community. In this context, the main drivers for stage 3 policies result from the pressure exerted by ecologist groups and cycling organizations, the election of a red-green majority in 2010 and increased policy capabilities within the City administration and the transport planning community. Last but not least, the city also benefited from continued input from the transport and city planning community, acting within academia or in specialized consultancy offices, in order to conceptualize what the city's future might be, to critically examine various policy options, and to ensure the international visibility of the Viennese approach to transport.

Since the mid-2000s, these forms of governance have been challenged in a number of ways through the growing fragmentation of the local political party system, the end of SPÖ's absolute majority and growing debates, at national level, regarding the city's financial and fiscal situation. The growing politicization of transport issues manifests itself in two different ways: first, the growing number of transport controversies, which accounts for high level of attention among the media and the public; and second, new opportunities for those external to the local transport policy-community – grassroots' movements, international experts and consultancy firms, etc. – to promote new ideas and solutions, including private-owned and/or financed initiatives.

A highly adaptable public transport model

Furthermore, and this is a second explanation for the singularity of the Vienna case, a specific approach to transport was developed, which became known as the “Viennese public transport model”. The model’s premises are strongly embedded in the transport infrastructure, the built environment and to a lesser extent the policy capabilities that have been inherited from the 19th century and the 1920s. Current efforts to promote the compact city model build on this legacy and on the city’s singular political and economic trajectory during the Cold war period. The interventionist approach to urban development and land-use regulations also account for population density, notably lower motorisation rates than per capital GDP would suggest and the historical use of public transport. Yet the strength of the “Viennese public transport model” also lies in its adaptability to changed circumstances and technological changes. A first example can be found in the compromise reached in the late 1960s with pro-car advocates, at a time when political discourses and planning documents favoured private motorization. As resources became more scarce for public transport, elements of pre-existing networks were dismantled until a consensus was reached about the respective role of motorized transport (overground) and public transport (underground). Yet these systems never completely disappeared, as observed in the case of other cities in WP4: the Stadtbahn and the tram systems were dismantled and transformed into bus lines, and in a more original way, they were transformed into an underground metro system. Since then, this status quo has been incrementally redefined in order to prioritize public transport through high levels of subsidies, new technologies and car traffic containment initiatives.

A second example of the Viennese model’s adaptability lies in the decision, taken in the 1990s, to formally single out public transport as the backbone of the city’s transport system. In this case, the most remarkable sign of the model’s adaptability is less to be found in the transport infrastructures and systems, but in the changes brought to its organization and business model following the creation of the Wiener Linien. Public transport is now fully integrated in the local welfare policy system and benefits from continued financial support from the federal state through capacity funding in the metro system. More precisely, its central status has been ensured through organizational reforms, major investment in infrastructures and services, high levels of public subsidies and region-wide fare agreements with a wide range of transport operators. As of today, public transport is heavily subsidized in order to ensure the lowest possible prices while at the same time seeking to attract new passengers through high levels of supply and service quality. Last but not least, the model once again demonstrated its adaptability following the arrival of a red-green coalition in 2010. Interestingly, this major political change both strengthened and upgraded the Viennese model by developing demand-oriented services through the tariff structure, and by extending the reach of the integrated approach to other non-motorized modes. In spite of this policy’s fiscal and financial implications for the city’s budget and, to a lesser extent, to the Wiener Linien, it contributed to enriching public transport through sustainable transport initiatives as part of the “Green alliance” concept, and through a wide-range of new technologies (e.g., information and communication systems, etc.) as part of the smart city agenda. With the support of the local transport policy-making community, the red-green majority has been able to maintain a stronghold on the selection and integration of above-mentioned new ideas and solutions, and to reject those that threatened the long-term viability of the Viennese model. This was further exemplified in the latest transport strategy in 2015 as part of the city’s efforts to promote multimodal travel services.

The Viennese public transport model as a driver for car use reduction

In return, this collective choice justified continued attempts to limit car use. In this respect, the city traditionally relies upon federal and EU legislation in order to introduce car traffic mitigation measures aimed at reducing emissions and noise, as well as speed reductions justified by road safety concerns. As of today, this traffic mitigation agenda also encourages car-sharing as well as electromobility. Funding available for road projects declined, even though the city’s changed situation after the fall of the Iron curtain and new urban developments across the Danube recently justified new road projects at both federal and local levels, and an opportunity to generally increase road capacity. Since the early 1990s, the city also developed its own tool in order to restrict car use: the parking management system. Originally stemming from an attempt to protect the urban core without antagonizing its users (residents, workers, shopkeepers, etc.), this type of economic and fiscal policy instrument was incrementally systematised and extended up until it reached some 16 districts in early 2018. In spite of criticisms highlighting its limited environmental impact and its submission to political micro-management imperatives, it remains the city’s major tool to fostering car use reduction and dismantling off-street parking. Among those advocating a stricter approach to car use restrictions in the city at large, the parking management’s long-term effects – reduce congestion or restrict car use – is being questioned. The number of

parking spaces has continued to increase, and the mode share in commuting traffic remained constant. Since the late 2000s and in a context of growing concerns for increasing flows of commuting traffic, transport policy debates have highlighted the need to foster new region-wide coordination mechanisms and justified attempts to combine parking management with a congestion charge alongside the city's borders or with increased levels of subsidies for public transport.

Another long-term effect of the transport policy choices made in Vienna lies in the limited role of active modes and urban design initiatives until the early 2010s, to the exception of situation observed in the urban core for heritage preservation purposes. Since an early stage, a number of initiatives aimed at limiting car traffic and supporting walking were introduced, such as short-term parking restrictions, pedestrianising main roads and encouraging a diversity of street uses. By contrast, cycling was mainly advocated for leisure activities until the early 1980s and incrementally reframed into a significant transport mode under the pressure of cycling organizations. Conversely to the situation observed in Copenhagen at that time, where cycling filled a void in the absence of public transport supply and in a context of economic decline, the strong position of public transport relegated cycling to a subaltern role, which in turn accounts for its instrumental role within the ecologist and the student movements in order to promote new forms of policy-making and urban social practices. Since the early 2000s, the Green Party, together with cycling organizations, have continuously pushed for a more comprehensive cycling agenda, first as part of the municipal opposition and later, as part of the ruling coalition. There again, this transport mode's growing role – 1,5 per cent in 1984, 7 per cent today of mode share – relies upon the reallocation of financial resources and road space for cycling as well as upon increased policy capabilities at city level.

Current and future challenges in transport policy developments in Vienna

Notwithstanding the massive transformation achieved in Vienna over the past decades, whether or not the combination of parking management with strong public transport is sufficient in a context of increased population growth and commuting traffic flows remains an open question. In this regard, the Vienna case very much resembles other cities in WP4 in facing new challenges and the weakening of the main drivers that supported the introduction and development of car use reduction policies in the first place. Considering the rapid evolution in the country's political outlook, whether or not similar levels of resources will remain available for public transport in the near future is an open question. More precisely, in addition to levels of subsidies and financial support, this also extends to future relationships with the Wiener Linien. More optimizing through smart city solutions and technologies is possible, as are initiatives to promote cycling and walking as part of the Green alliance. The public transport network will also have to accommodate changed travel behaviours among younger generations, including lower driving licence holding, car ownership and use.

But there also might be a need for a more comprehensive re-appraisal of priorities for the road network. The city's "fair road share" strategy constitutes a first step in this direction, but both the Marienhilferstrasse and the Herrengasse projects highlighted the costs and the amount of policy resources needed to effectively implement small-scale streets sharing initiatives. Moreover, the further away from the urban core, the more pro-car advocates have been able to resist and shape the extension of the parking management scheme and the traffic mitigation agenda. At the city's fringes, local uses of land-use regulations have resulted into the emergence of new economic centres that are poorly integrated into existent public transport networks. At the local level the politicization of transport policy issues in a context of increased political competition weakens consensus-seeking forms of policy-making and opportunities to foster new compromises. Similar tendencies are observed within the automobile lobby with the emergence of challengers to the ÖAMTC at national level and their interest in seeking for highly visible results in the capital-city region. As of recent years, the Conservative Party, and to a lesser extent the FPÖ, have strategically positioned themselves as champions for car drivers and relied upon their electoral strongholds among the population and on both sides of the city's borders to challenge the Viennese model and denounce its insularity. More precisely, when observed at regional and national level, the growing role of the FPÖ has also contributed to the increased salience of transport issues among right-wing parties and electorates, as well as to the strengthening of the automobile lobby at national level and in the neighbouring provinces.

In Vienna, as in other cities in WP4, population growth estimates, rapidly evolving political outlooks and uncertainties related to resources available for public transport in the future question the long-term viability of those policy choices that made the shift to stage 3 possible.

6 Bibliography

6.1 Primary sources: interviews and other contributions

Contributions from the CREATE project

Halpern C., Persico S., D4.1 technical report, analyzing qualitative transport policy developments: analytical framework and methodology, CREATE project, Sciences Po, Paris, 136p. (unpublished)

Klemenschitz R., Vienna City report, Past and present changes in urban transport governance and policies, February 2016, 6p.

Roider O., Klemenschitz R., Spiegel N., (2016), D3.2 technical city report for Vienna. Quantitative analysis of travel. The CREATE project, 53p.

Roider O., Klemenschitz R., Gerike G., Wittwer R., Halpern C. (2018), Turnaround succeeded! Analysis of impacts of sustainable transport policies in Vienna and four other European capital cities, Proceedings of the 7th Transport Research Arena TRA 2018, April 16-19, 2018, Vienna, Austria.

Face-to-face interviews

- Vienna City Administration, MA 18, 18/02/2016
- Mobility Agency 1, 19/02/2016
- Mobility Agency 2, 17/03/2016
- Transport expert 2, OIR, 16/03/2016
- Transport planning expert 1, BOKU, 16/03/2016
- Politician, SPÖ, 17/03/2016
- Transport planning expert, TU Wien, 17/03/2016

Contributions from outside the CREATE project

Master STU Sciences Po, Study trip to a European metropolis: Vienna-Bratislava, 12-17 November, 2013. The following meetings were relevant in providing some background context information for this study:

- Visit Aspern IQ, Die Seestadt Wiens, 12/11/2013
- EuropaForum Wien, Presentation about the Centropo project, 12/11/2013
- Municipal Department 18, Vienna City Administration, Presentation about Smart City Vienna, 13/11/2013
- OIR, Presentation about STEP 05 and progress report 2010, 13/11/2013
- EUFA Wien, EU strategy for the Danube region, 13/11/2013
- Municipal Department 22, Vienna City Administration, Dynamics of metropolization: the impact on natural resources and environmental protection, 14/11/2013
- TU Vienna, Department of Spatial Development, Infrastructure & Environmental Planning, presentation about the Vienna-Bratislava cross-border region, 14/11/2013
- Slovakia Technical University Bratislava, 10 years of the Centropo region, 15/11/2013

6.2 Press articles

Heute News. (2010, July 30). *Das Neue Nachtnetz der 24-Stunden-U-Bahn*. Retrieved Sept 6, 2016, from Heute News: <http://www.heute.at/news/oesterreich/wien/Das-neue-Nachtnetz-der-24-Stunden-U-Bahn;art931,382820>

Kurier (2016, June 29). *Drei Preise für rund 20 Kilometer*. Retrieved Sept 13, 2016, from Kurier: <https://kurier.at/chronik/niederoesterreich/drei-preise-fuer-rund-20-kilometer/207.021.694>

Kronen Zeitung. (2009, September 24). *SPO lehnt Nachtbetrieb der U-Bahn erneut ab*. Retrieved August 16, 2016, from Kronen Zeitung: <http://www.krone.at/wien/spoe-lehnt-nachtbetrieb-der-u-bahn-erneut-ab-rund-um-die-uhr-story-163063>

NOE ORF. (2016, June 7). *VOR-Tarifreform: Ende der Streifenkarten*. Retrieved September 13, 2016, from NOE ORF.at: <http://noe.orf.at/news/stories/2778771>

OE 24. (2010, January 20). *24-Stunden-U-Bahn in Wien möglich*. Retrieved August 8, 2016, from OE 24: <http://www.oe24.at/oesterreich/politik/24-Stunden-U-Bahn-in-Wien-moeglich/719391>

Die Presse. (2009, November 21). *Was wurde aus... dem Waldsterben?* Retrieved September 13, 2016, from Die Presse: <http://diepresse.com/home/panorama/klimawandel/523352/Was-wurde-aus-dem-Waldsterben>

Die Presse. (2010, February 16). *Opposition begrüsst Nacht U-Bahn und kritisiert SPO*. Retrieved August 2016, from DiePresse.com: <http://diepresse.com/home/panorama/wien/540086/Opposition-begrusst-NachtUBahn-und-kritisiert-SPO>

Der Standard. (2011, October 11). *Wiener Offi-Jahreskarte für 365 Euro ab Mai 2012*. Retrieved September 16, 2016, from Der Standard: <http://derstandard.at/1317019887152/Tarifreform-Wiener-Linien-Wiener-Oeffi-Jahreskarte-fuer-365-Euro-ab-Mai-2012>

Die Presse. (2012, January 9). *Kriminelle in Wiens Nacht U-Bahn: Fast 700 Festnahmen*. Retrieved August 8, 2016, from Die Presse: <http://diepresse.com/home/panorama/wien/722401/Kriminelle-in-NachtUBahn-Fast-700-Festnahmen>

Die Presse. (2014, March 25). *Tempo 30 in Wien: Eine Stadt bremst ab*. Retrieved November 25, 2016, from Die Presse: http://diepresse.com/home/panorama/wien/1579825/Tempo-30-in-Wien_Eine-Stadt-bremst-ab

Der Standard. (2016, October 14). *Niederösterreichs Grüne wollen 365-Euro-Jahresticket*. Retrieved October 17, 2016, from Der Standard: <http://derstandard.at/2000045876505/Niederösterreichs-Grüne-wollen-365-Euro-Jahresticket>

Wien ORF. (2010, Sept 3). *Start: Mit der U-Bahn durch die Nacht*. Retrieved Sept 7, 2016, from Wien.ORF.at: <http://wiev1.orf.at/stories/466486>

Wien ORF. (2013, May 13). *Nacht-U-Bahn immer starker genutzt*. Retrieved August 16, 2016, from Wien.ORF.at: <http://wien.orf.at/news/stories/2584018/>

Wiener Zeitung (2013, January 11). *Wissen: Mobilitätsagentur*. Retrieved June 30, 2016, from Wiener Zeitung : http://www.wienerzeitung.at/nachrichten/wien/unterwegs/515006_Wissen-Mobilitaetsagentur.html

Wiener Zeitung. (2018, February 2). *Tunnel oder nicht Tunnel?*, Retrieved March 18, 2018, from Wiener Zeitung: https://www.wienerzeitung.at/nachrichten/wien/stadtpolitik/944937_Tunnel-oder-nicht-Tunnel.html

6.3 Primary and secondary sources

Austria Forum. (2012, December 19). *Verkehrsverbund Niederösterreich-Burgenland*. Retrieved September 16, 2016, from Austria Forum: http://austria-forum.org/af/AustriaWiki/Verkehrsverbund_Nieder%C3%B6sterreich-Burgenland

Becker J., Novy A. (1999), "Divergence and convergence of national and local regulations. The case of Austria and Vienna", *European Urban and Regional Studies*, 6 (2), p.127-143.

Blum, M. (2015, January 9). *Drei Jahre Mobilitätsagentur Wien - Eine Bilanz*. Retrieved June 30, 2016, from Fahrrad Wien Blog: <http://www.fahradwien.at/blog/2015/01/09/drei-jahre-mobilitaetsagentur/>

Birkland, T.A. (1998) "Focusing Events, Mobilization, and Agenda Setting". *Journal of Public Policy*, 18,(1), p.53-74.

Bischof G., Karlhofer F., eds., (2015), "Austrian Federalism in Comparative Perspective", Innsbruck and New Orleans: Innsbruck University Press and University of New Orleans University Press.

Buehler, R., Pucher, J. (2016). *Sustainable Transport in Vienna*. Retrieved Nov 21, 2016, from <https://static1.squarespace.com/static/5804efd7cd0f68e576ecd423/t/582f2bd5c534a51af38f8018/1479486425892/ViennaCase2016s.pdf>

Buehler, R., Pucher, J., Altshuler A., (2017). *Vienna's path to sustainable transport*. International Journal of Sustainable Transportation, 11:4, 257-271, DOI:10.1080/15568318.2016.1251997

Buehler, R., Pucher, J., Gerike, R., & Gotschl, T. (2017). Reducing car dependency in the heart of Europe: lessons from Germany, Austria and Switzerland. *Transport Reviews*, 371(1), 4-28.

Bundesministerium für Verkehr, Innovation und Technologie. (2016). *Die Lage aller österreichischen Verkehrsverbünde*. Retrieved September 15, 2016, from Bundesministerium für Verkehr, Innovation und Technologie: <https://www.bmvit.gv.at/verkehr/nahverkehr/verbuende/aufteilung.html>

Buzogany, A., Scherhauser, P. (2018), "Austrian Greens: from pyrrhic presidential victory to parliamentary exit", *Environmental politics*, 27(3), p.566-571. <https://doi.org/10.1080/09644016.2018.1438793>

Davis, D., Altshuler A., ed. (2018, forthcoming). *Transformative urban transport*. Oxford, Oxford University Press.

De Frantz, M. (2001), From cultural regeneration to discursive governance: constructing the flagship of the 'Museumsquartier Vienna' as a plural symbol of change, *International Journal of Urban and Regional Research*, 29(1), p.50-66.

Knill, C., Liefferink, D. (2001). *Environmental Politics in the European Union: Policy-Making, Implementation and Patterns of Multi-Level Governance*. Manchester, Manchester University Press, 2007.

Eichmann H., Nocker M., et al. (2015), *Die Zukunft der Beschäftigungs in Wien*, im Auftrag des MA 23, FORBA, Wien. <https://www.wien.gv.at/wirtschaft/standort/pdf/beschaefigung-trendanalysen-branchen.pdf>

Eigner, P., Resch, A. (2001). *Phasen der Wiener Stadtentwicklung*. Demokratiezentrum Wien. Univeröffentliches Manuskript. Available at: http://www.demokratiezentrum.org/fileadmin/media/pdf/eigner_resch_phasen.pdf

Emberger G. (2017), National transport policy in Austria – from its beginning till today, *European Transport Research Review* 9 (6). <https://doi.org/10.1007/s12544-017-0223-2>

EPSON (2012), POLYCE. Metropolisation and polycentric development in Central Europe, Brussels, EPSON & University of Vienna.

Furst, E. W., & Dieplinger, M. (2014). The acceptability of Road pricing in Vienna. *Transportations*(41), 765-784.

Giffinger R., Hamedinger A., 2009, Metropolitan competitiveness reconsidered. The role of territorial capital and metropolitan governance, special issue, *Central European Journal of Spatial and Landscape planning*, 20(1), p.3-12.

Hachleitner B., Marschik M., Müllner R., Zappe M., (hrsg.), (2013), *Motor bin ich selbst. 200 Jahre Radfahren in Wien*, Metroverlag, Wien.

Institut für Verkehrswissenschaften. (2013, January 22). *Parkraumbewirtschaftung in Wien*. Retrieved September 13, 2016, from Technische Universität Wien: http://www.ivv.tuwien.ac.at/fileadmin/mediapool-verkehrsplanung/Diverse/Lehre/Studentenarbeiten/VO_Verkehrspolitik/WS_2012_2013/Parkraumbewirtschaftung_Wien.pdf

Jones, P. (2014). The evolution of urban mobility: The interplay of academic and policy perspectives. *IATSS Reserach*, 7-13.

Karlhofer F. (2015), Sub-national Constitutionalism in Austria : a Historical Institutional Perspective, *Perspectives on Federalism*, Vol. 7, issue 1, 2015: http://www.on-federalism.eu/attachments/205_download.pdf

Kostal, T., Micalitsch, V., Obermann, G. (2014). *Local Public Transport in Vienna by Wiener Linien - Governance and Provision of Services*. CIRIEC Working paper, n°17: <http://www.ciriec.ulg.ac.be/wp-content/uploads/2015/08/WP14-17.pdf>

Kurz E. (1981). Die Städtebauliche Entwicklung der Stadt Wien in Beziehung zur Verkehr, Magistrat der Stadt Wien, Abteilung Verkehr.

Magistrat der Stadt Wien - Geschäftsgruppe Stadtentwicklung und Stadterneuerung Magistratsabteilung 18 - Stadtstrukturplanung. (1985). *Stadtentwicklungsplan Wien*. Vienna: Magistrat der Stadt Wien - Geschäftsgruppe Stadtentwicklung und Stadterneuerung Magistratsabteilung 18 - Stadtstrukturplanung.

Magistrat der Stadt Wien. (2010, July 29). *Wiener Linien: Neues Nachtnetz mit der 24-Stunden U-Bahn*. Retrieved August 16, 2016, from wien.at: <https://www.wien.gv.at/rk/msg/2010/07/29006.html>

Magistrat der Stadt Wien. (2010) Soziale Veränderungsprozesse im Stadtraum, MA18, Wien.

Magistrat der Stadt Wien. (2014). Smart City Wien Framework Strategy, MA18, Vienna.

Magistrat der Stadt Wien. (2016a). *Ausweitung der Parkraumbewirtschaftung 2012/13*. Retrieved May 19, 2016, from Wien.at: <https://www.wien.gv.at/verkehr/parken/entwicklung/ausweitung/>

Magistrat der Stadt Wien. (2016b). *Geschichtlich Entwicklung der Parkraumbewirtschaftung*. Retrieved May 19, 2016, from Wien.at: <https://www.wien.gv.at/verkehr/parken/entwicklung/geschichte.html>

Magistrat der Stadt Wien. (2016c). *Kurzparkzonen und Parkgebühren*. Retrieved May 19, 2016, from Wien.at: <https://www.wien.gv.at/verkehr/parken/kurzparkzonen/index.html>

Magistrat der Stadt Wien. (2016d). *Nachher Untersuchung - Ausweitung der Parkraumbewirtschaftung 2012/13*. Retrieved May 20, 2016, from Wien.at: <https://www.wien.gv.at/verkehr/parken/entwicklung/ausweitung/nachher.html>

Magistrat der Stadt Wien. (2017) Facts and figures on migration, MA 23, Vienna.

Magistrat der Stadt Wien. (various years 1970 to 2014). Statistisches Jahrbuch der Stadt Wien. Wien.

Mobilitätsagentur Wien. (2016). *Aktivitäten der Mobilitätsagentur Wien*. Retrieved June 30, 2016, from Mobilitätsagentur: <http://www.mobilitaetsagentur.at/aktivitaeten-der-mobilitaetsagentur-wien/>

Mobilitätsagentur Wien GmbH . (2016). *Jahresbericht 2015*. Retrieved June 30, 2016, from Mobilitätsagentur: http://www.mobilitaetsagentur.at/files/2016/04/MOBAG_Jahresbericht15_Web.pdf

NOE ORF. (2016, June 7). *VOR-Tarifreform: Ende der Streifenkarten*. Retrieved September 13, 2016, from NOE ORF.at: <http://noe.orf.at/news/stories/2778771>

Novy A., (2011), Unequal diversity. On the political economy of social cohesion in Vienna. *European Urban and Regional Studies*, 18(3) 239-253 DOI: 10.1177/0969776411403991

Novy A., Redak V., Jäger J., Hamedinger A. (2001), "The end of Red Vienna", *European Urban and Regional Studies*, 8(2), p.131-144.

OE 24. (2010, January 20). *24-Stunden-U-Bahn in Wien möglich*. Retrieved August 8, 2016, from OE 24: <http://www.oe24.at/oesterreich/politik/24-Stunden-U-Bahn-in-Wien-moeglich/719391>

OECD (2003), Territorial review: Vienna-Bratislava, Austria/Slovak Republic, Paris, OECD

OECD (2012), « Austria: The reform of the fiscal equalisation law », in *Reforming Fiscal Federalism and Local Government : Beyond the Zero-Sum Game*, Paris, OECD: <http://dx.doi.org/10.1787/9789264119970-5-en>

Pelinka, A., Rosenberger, S., (2007), *Österreichische Politik. Grundlagen Strukturen Trends*, 3. aktualisierte Auflage, Wien.

Pfaffenbichler, P., Niel, F. (2013). *Anforderungen eines steigenden Radverkehrsanteils an die Qualität und Quantität von Fahrradabstellanlagen - Nachfrage, Infrastrukturkosten und Akzeptanz*. Wien: Wiener Umweltanwaltschaft.

Pirhofer, G., Stimmer, K. (2007). *Theorie und Praxis der Wiener Stadtplanung von 1945 bis 2005*. Vienna: Stadt Wien, Magistratsabteilung 18 - Stadtentwicklung und Stadtplanung.

R. Riedel (2013). Grundsätze der Stadtplanung im "ruhenden Verkehr". Modelle der Parkraumorganisation und Bewirtschaftung", MA 18, PPT presentation, 27 slides.

R. Riedel (ed.) (2014). Ausweitung der Parkraumbewirtschaftung in Wien. Evaluierung der Auswirkung der Ausweitung der Parkraumbewirtschaftung auf die Parkraumnachfrage, MA 18 & ZIS+P, 70 p.: <https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008368.pdf>

Sammer, G., Roeschel, G., & Gruber, C. (2012, March). *Entscheidungsgrundlagen für die Ausweitung der Parkraumbewirtschaftung in Wien & Zusatzuntersuchung - Parkraumbewirtschaftungszone "Diskussionsstand Bezirke"*. Retrieved September 15, 2016, from Stadt Wien: <https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008217a.pdf>

Stadtentwicklung Wien, (2015), Stadtentwicklungsplan 2025 STEP 2025, MA18, Wien.

Stadtentwicklung Wien, (2011) Strasse fair teilen. MA18, Wien.

Stadtentwicklung Wien, (2013), Masterplan Verkehr Wien 2003, Evaluierung 2013, MA18, Wien.

Stadtentwicklung Wien, (2005), Stadtentwicklungsplan 2005 STEP05, MA18, Wien.

Stadtentwicklung Wien, (2003), Masterplan Verkehr Wien 2003, MA18, Wien.

Stadtentwicklung Wien, (1993a), Die aktuelle Ausgangssituation, Heft 3 der Sonderreihe, MA18, Wien.

Stadtentwicklung Wien, (1993b), Verkehrskonzept Wien Leitlinien, Heft 4 der Sonderreihe, MA18, Wien.

Stadtentwicklung Wien, (1980a), Stadtentwicklungsplan für Wien: Verkehr. Diskussionsgrundlage. MA18, Wien.

Stadtentwicklung Wien, (1980b), Stadtentwicklungsplan für Wien: Verkehrskonzeption. MA18, Wien.

Stadt Wien. (2007). Neue Tarife Wr. Linien: Wirtschaftlich notwendig - sozial gestaltet. Wien. Retrieved May 1, 2016, from <https://www.wien.gv.at/rk/msg/2007/0328/006.html>

Stadt Wien. (2013b). *Garagenstrategie für Wien*. Retrieved May 5, 2016, from <https://www.wien.gv.at/verkehr/parken/garagen/strategie/>

Stadt Wien. (2015). *All results for Vienna Elections to Vienna City Council 2015*. Retrieved Sept 15, 2016, from Wien.at : <https://www.wien.gv.at/english/NET-EN/GR151/GR151-109.htm>

Stadt Wien. (2016). *Vienna Elections*. Retrieved Sept 13 2016, from Wien.at: <https://www.wien.gv.at/english/politics/elections/>

Stadt Wien. (2016d). *Magistratsabteilung 18 - Stadtentwicklung und Stadtplanung*. Retrieved July 10, 2016, from Wien.at: <https://www.wien.gv.at/advuew/internet/AdvPrSrv.asp?Layout=stelle&Type=K&stellecd=1995060915103983>

Stadt Wien. (2016e). *Wien als Land/Vienna as a Federal Province/Vienne en tant que Land*. Retrieved August 12, 2016, from Wien.at: <https://www.wien.gv.at/english/politics/translation/province.htm>

Stadt Wien. (n.d.). *The Organisation of the Vienna City Administration*.

Stadtentwicklung Wien, Magistratsabteilung 18 Stadtentwicklung und Stadtplanung. (2005). *Stadtentwicklung Wien 2005*. Vienna.

Stadtrechnungshof Wien. (2013). *Prüfung der Gebarung der Mobilitätsagentur Wien GmbH durch den Stadtrechnungshof Wien*. Retrieved June 30, 2016, from <http://www.stadtrechnungshof.wien.at/ausschuss/03/03-51-KA-III-K-8-13.pdf>

Stadt-Wien.at. (2016). *Die Wiener Linien und ihr Verkehrskonzept*. Retrieved 3 31, 2016, from Stadt-Wien.at: <http://www.stadt-wien.at/wien/oeffentl-verkehrsmittel/die-wiener-linien-und-ihr-verkehrskonzept.html>

Statistik Austria. (2016). Verbraucherpreisindex. *VPI_66*. Retrieved May 1, 2016, from http://www.statistik.at/web_de/statistiken/wirtschaft/preise/verbraucherpreisindex_vpi_hvpi/zeitreihen_und_verkettungen/index.html

Technical committee on Transport (2005). Parking policies and the effects on economy and mobility. Report on COST Action 342, 133p. Available at: <http://www.europeanparking.eu/media/1207/cost-action-342-final-report-1.pdf>

Umweltbundesamt (2016). Elfter Umweltkontrolbericht. Umwelt situation in Österreich. Umweltbundesamt, Wien.

Vassilakou, M. (2015, January 13). *Mit der 365 Euro Jahreskarte ins Wiener Umland*. Retrieved Sept 16, 2016, from Die Grünen: <https://wien.gruene.at/verkehr/mit-der-365-euro-jahreskarte-ins-wiener-umland>

Verkehrsverbund Ost-Region. (2016). *Chronik*. Retrieved March 31, 2016, from Verkehrsverbund Ost Region: <http://www.vor.at/der-vor/chronik/>

Verkehrsverbund Ost-Region. (2016). *Über Uns*. Retrieved November 27, 2016, from Der Verkehrsverbund: <https://www.vor.at/ueber-uns/>

Vienna City Administration . (2015). *STEP 2025 Thematic Concept: Urban Mobility Plan Vienn*. Vienna: Vienna City Administration .

VOR. (2014). Tickets & Preise. (V. Ost-Region, Ed.) Wien. Retrieved May 1, 2016, from <http://www.vor.at/tickets-preise/einzeltickets/>

Wien Geschichte Wiki. (2014, 12 18). *Wiener Linien*. Retrieved 3 31, 2016, from Wien Geschichte Wiki: https://www.wien.gv.at/wiki/index.php/Wiener_Linien

Wiener Linien's Website (last consulted february 2018): <https://www.wienerlinien.at/eportal3/ep/channelView.do?pageTypeId=66533/channelId/-2000622>

Wiener Linien's Unternehmensblog: <https://blog.wienerlinien.at/> (last consulted february 2018)

Wiener Linien. Facts and figures series. The 2016 edition, published in 2017, is available here: https://www.wienerlinien.at/media/files/2017/facts_and_figures_2016_213708.pdf

Wiener Linien. (2015). *5 Jahre Nacht-U-Bahn: Eine Erfolgsgeschichte*. Retrieved August 16, 2016, from Wiener Linien: <http://www.wienerlinien.at/eportal3/ep/contentView.do?pageTypeId=66526&channelId=-47186&programId=74577&contentTypeId=1001&contentId=80744>

Wiener Stadtwerke. *Geschäfts- und Nachhaltigkeitsberichte*. Available at: <https://www.wienerstadtwerke.at>

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