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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 reports for Stage 3 cities

Work Package 4 "Qualitative analysis of Transport policy developments"

		Date of preparation:	**May 2018**
Start date of project:	**1st June 2015**	Duration:	**36 month**
		Version:	**1**
		Prepared by:	**C. Halpern**
		Checked by:	**C. Buckingham**
		Verified by:	
		Status:	**VF**
		Dissemination level:	**Public**

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 change**[1].

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. Caralampo 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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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: Berlin

Work Package 4 "Qualitative analysis of Transport policy developments"

Date of preparation: **January 15, 2017**

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Prepared by: **C. Halpern, A.K. Bersch**

Checked by: **J. Menge et al.**

Verified by: **C. Buckingham**

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Dissemination level: **Public**

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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.

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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-Karthrin 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 organized[3], 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 workshop[4]) 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.

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[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.

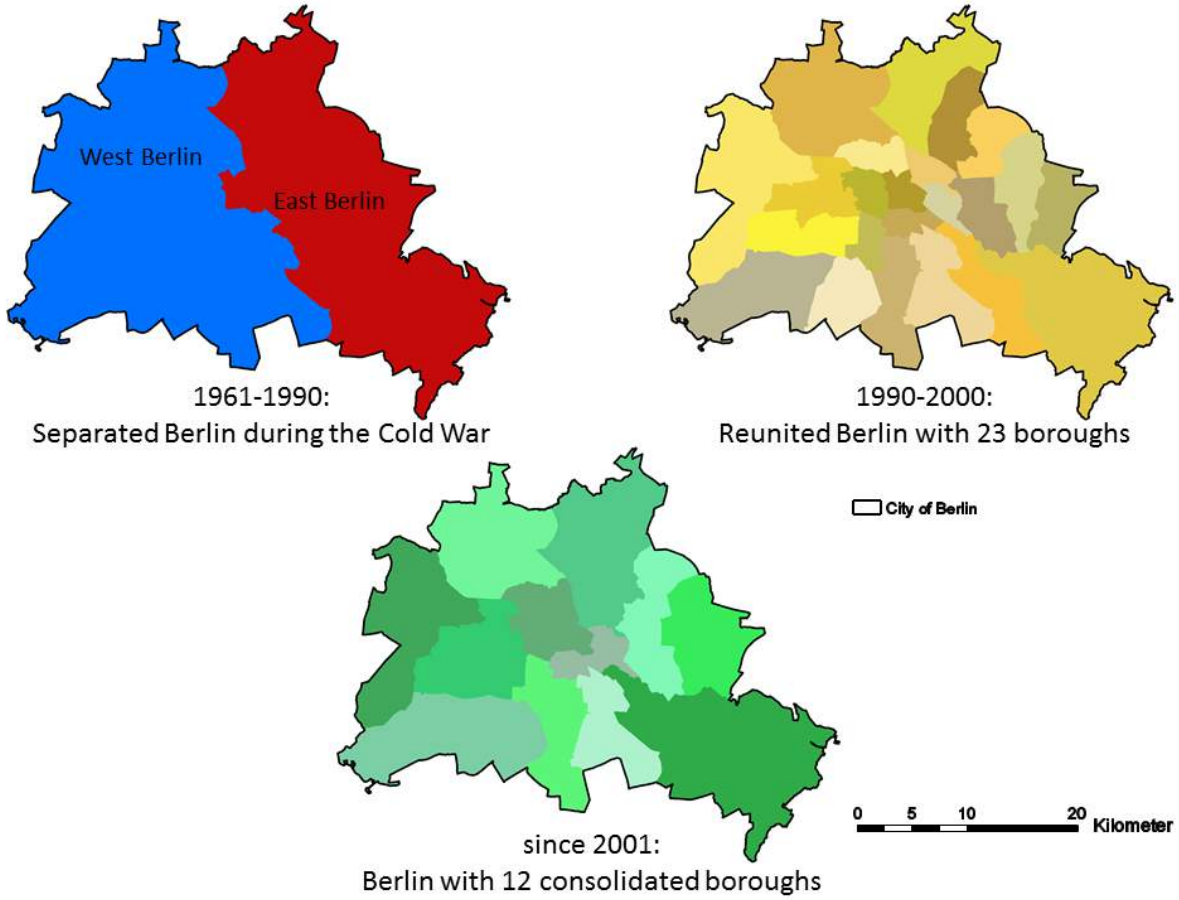
[5] This case study has also benefited from the work done outside the CREATE project by Charlotte Halpern on forms of urban governance in Berlin as part of her PhD (Halpern, Häusserman, 2003; Halpern, 2006).

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.

Map 1c. Administrative divisions in the capital-city region: Land Berlin, Metropolregion Berlin Brandenburg and Land Brandenburg[6].

Source: Gemeinsame Landesplannung Berlin Breandenburg, 2016: http://gl.berlin-brandenburg.de/

3.1 Socio-demographic changes and their impact on urban development

Demographic trends appear to have played a critical role in shaping urban development in Berlin and its surrounding area, with some impact on transport demand as well as on the framing of transport policy issues. To some extent, they were considered as visible symptoms of those changes underway in the capital-city region. Yet unlike other cities under scrutiny in WP4, Berlin is the only case in which population decrease lasted until the mid-late 2000's.

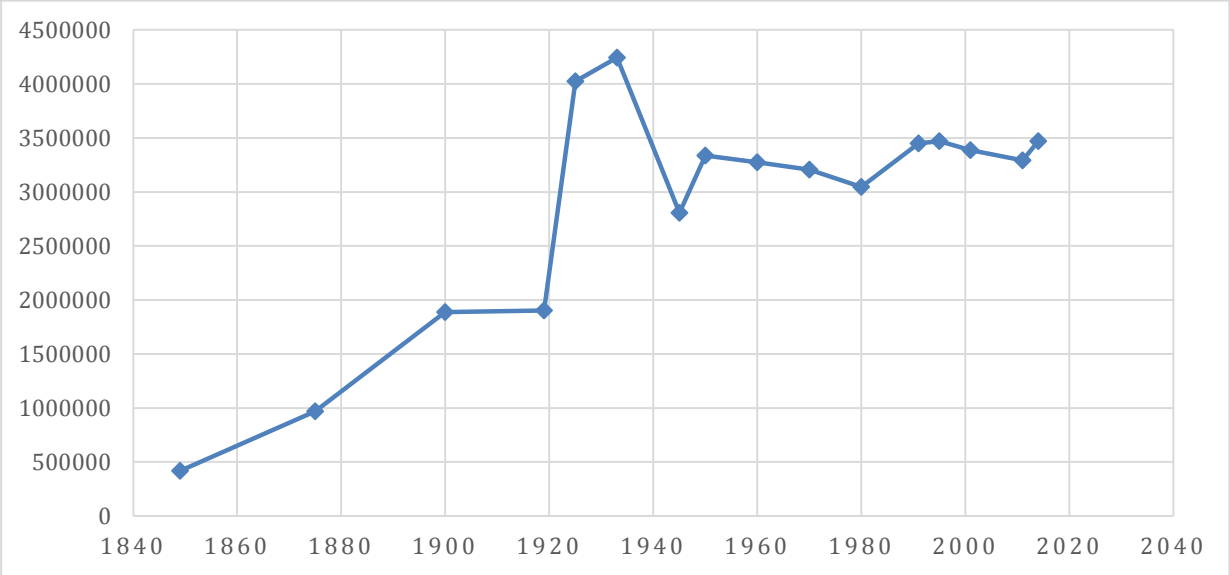
Berlin experienced its peak in population growth in the 1920s (see Figure 1 below), before stabilising below 3.5 million inhabitants after WWII. It is only since 2010 that a demographic increase was observed again. Several interviewees underlined the importance of these demographic trends in order to explain the discrepancy between an oversized infrastructure legacy in the field of transport and current needs.

The development of the modern city goes back to the middle of the 19th Century, when Berlin underwent a phase of rapid growth: between 1850 and 1940, it grew from 0,5 up to 4,3 million inhabitants when it became the third largest city in the world, after New York and London. Industrialization first led to the rapid development of agricultural land (Interview SenStadtUm Verkehr 1), until several measures were taken in order to put an end to "organic urban development". This was first done under the leadership of the Prussian State and later, as part of the modern city project.[7]

[6] It should be noted that the area under scrutiny in WP4 differs slightly from the choices made in WP3. It refers to existing administrative and political boundaries between levels of government in the capital-city region. See also CREATE WP4 D4.1 report.

[7] See below, section on historical legacy.

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

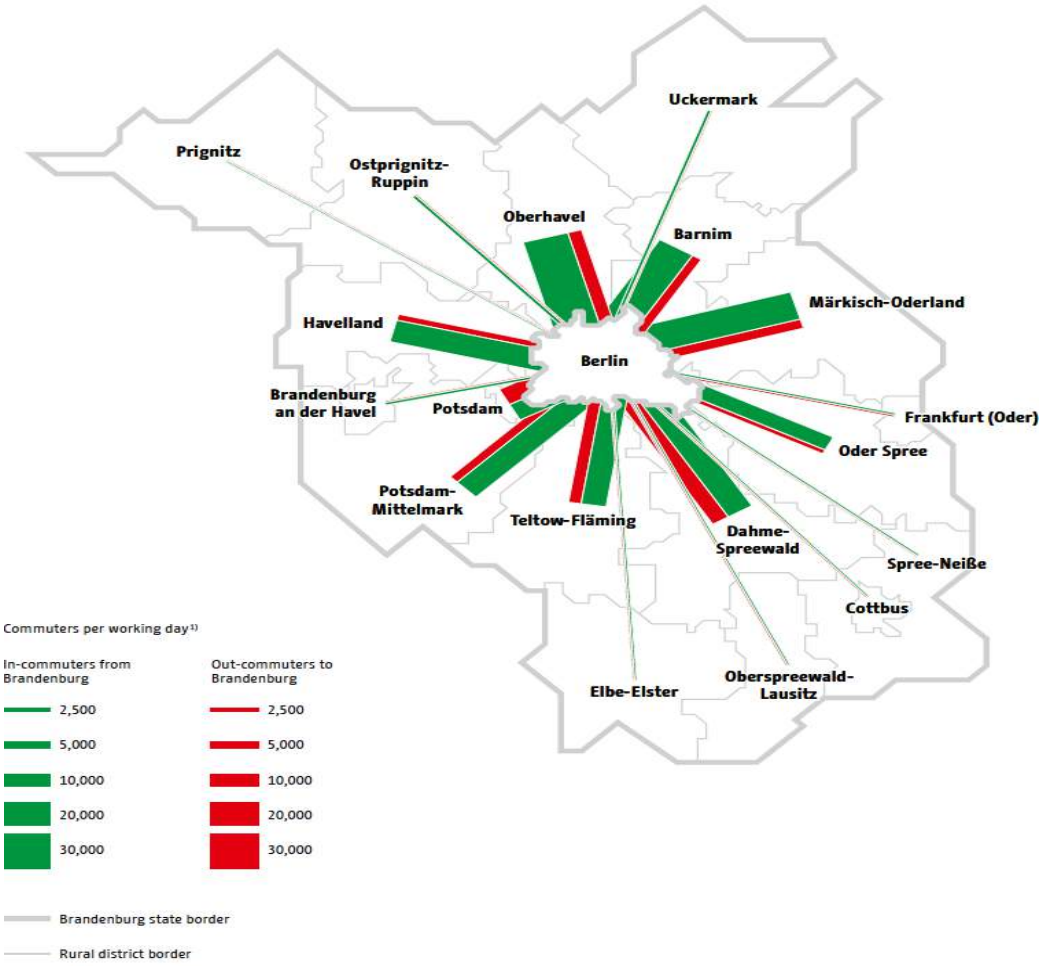


Source: CREATE D4.1 report – Reconciled from various sources.

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” (*Siedlungsstern*) that planned for the city to the 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 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 – stages[8]:

- Between 1991 and 1993, there was a small increase in population numbers due to foreign immigration,
- Then, until 2000, the population decreaseed 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 *Magisenat*– 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 fragmentation[10] 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 reduced[11]. 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 andimplementation. Their main resource consists of their right to oppose some urban development projects[12] 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 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

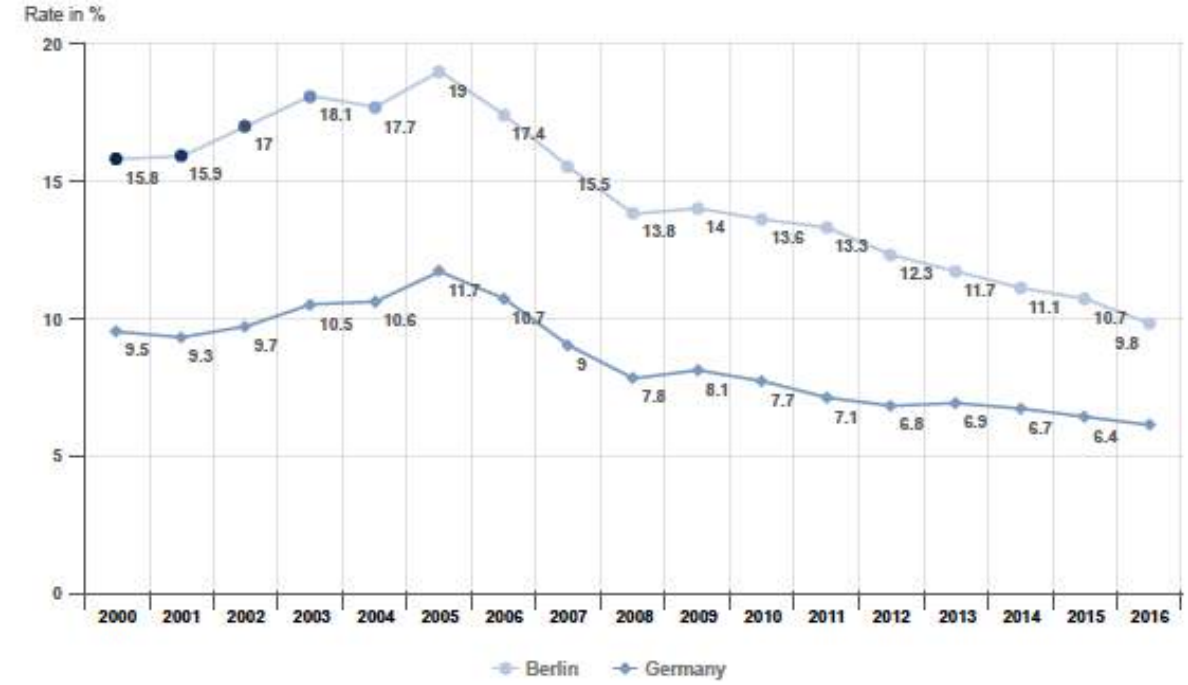
Following the Reunification, and as part of the process through which an authoritarian political regime and a centrally planned economy transitioned to the revival of parliamentary democracy and market economy – i.e. Die Wende –, this form of governance was re-enacted and extended to the entire city 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 Kapphan, 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 Länders 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 Landesplannung 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 connections[15] 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.

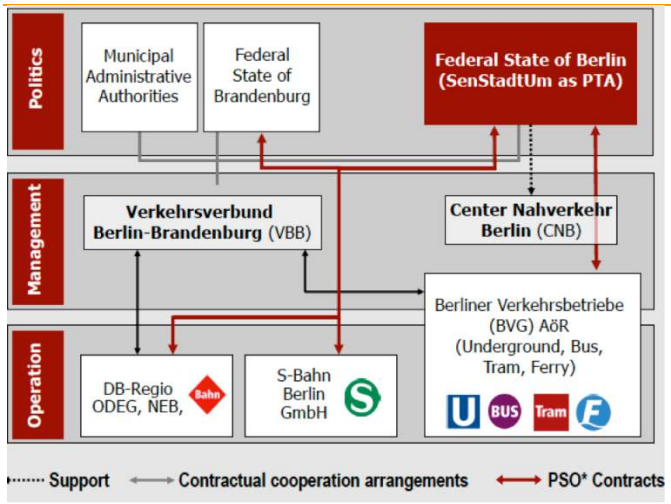
This is the main public transport company of Berlin. It manages the city's U-Bahn underground railway, tram, bus and ferry networks, but not the S-Bahn system (see below)[18]. During the division of Berlin, the BVG was split between the BVG (Berliner Verkehrsbetriebe Gesellschaft - West Berlin) and the 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 Berlin[19]. 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 choices[20].

- **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 policy[21].

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 law[23], 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 principles[24]. 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 Bahn[25], 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 projects[27].

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.

4 Historical transport policy developments: analysing policy objectives, processes and measures

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 the 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 BVG[29] 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 dynamics[30]. 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 city[31].

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.

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[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 Funcitonal city were published as part of the Athens Charter.

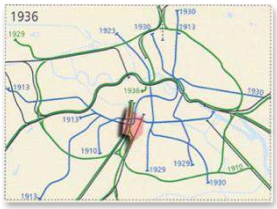
Maps 3a, b, c, d. Planning the Great Berlin (1862-1936)

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 areas[34].

[32] These plans were elaborated by the council of ministers (*Ministerrat*).

[33] This was later explained due to the lack of financial resources to built 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 BUND[37]. 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 life[38], 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 were 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.

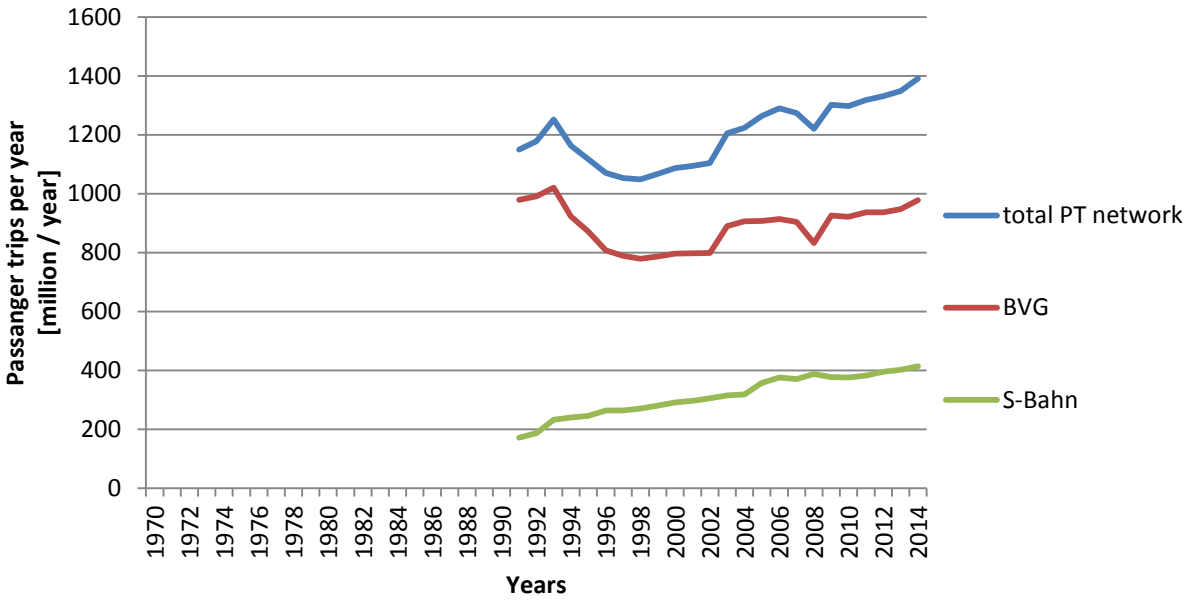
4.2.2 Transport policy change on-hold: Reunification through infrastructure-based policy

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 Reunification[39]. 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-negligible[40] 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.

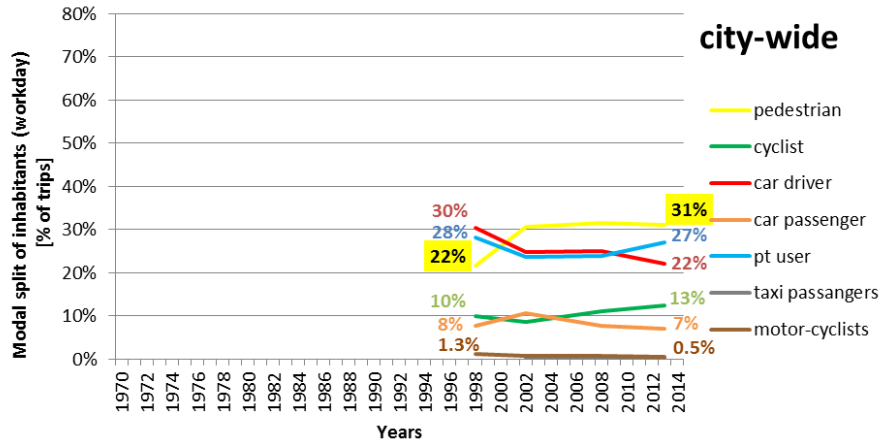
[39] This observation extends to cities under study in WP4. See D3.2 Berlin report.

[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

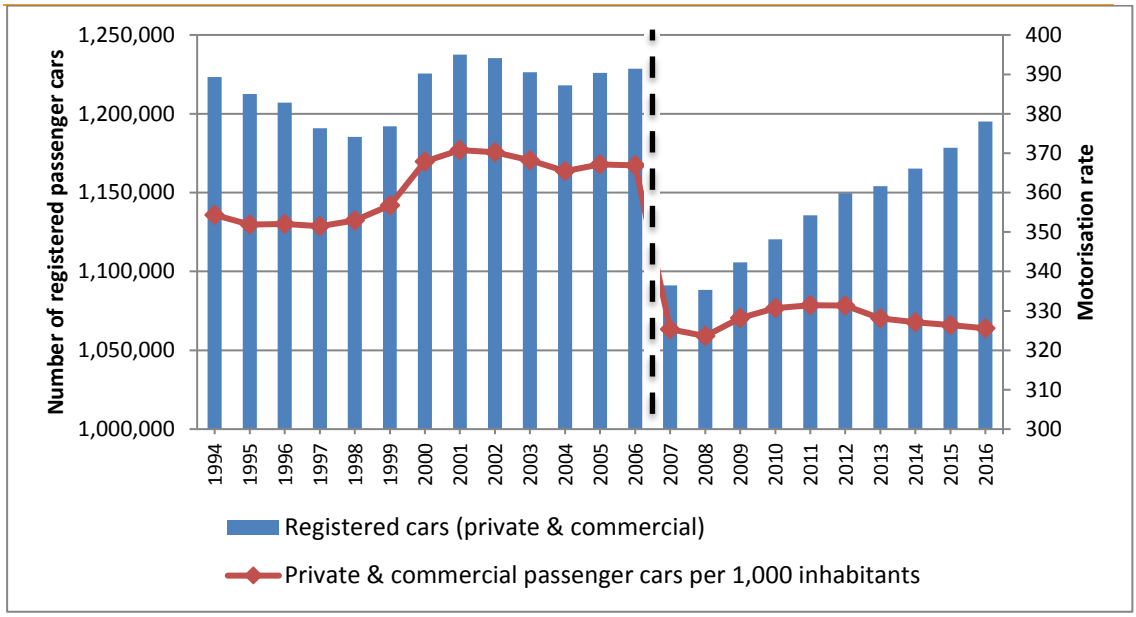
Roads		
	Road network	5334 km, of which 73 km are motorways (under the responsibility of the Federal government)
	Cycle lanes & paths	1,470 km of so called street accompanying bicycle facilities available, incl. 285.8 km of bicycle lanes and protective lanes on street, 968.4 km of structural cycle paths 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.

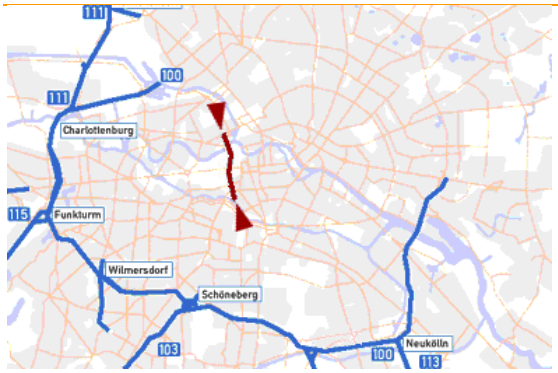
By contrast, the A100 Motorway project (or the so-called “eternal motorway project”) is still underway. This infrastructure was planned during the 1950s in West-Berlin and its first segment opened in 1958. Plans to expand this proposed “city ring” were later abandoned due to protest and to the presence 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 advocates[44].

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 were 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 policy[45].

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

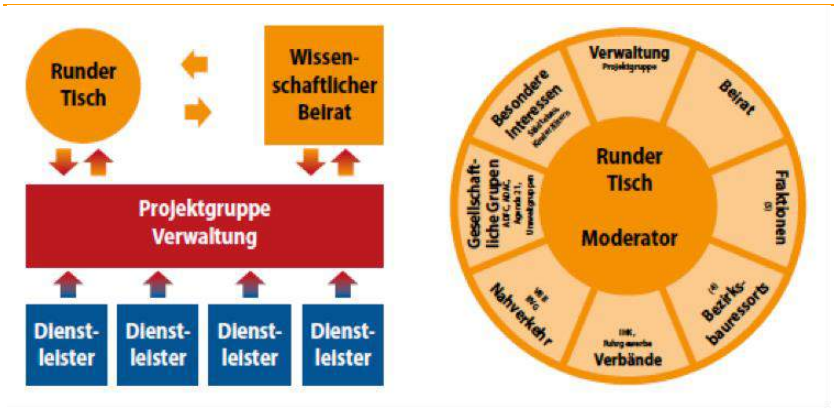
This document constitutes a major turning point in the evolution of transport policy objectives. It introduces the idea of an integrated approach to transport that avoids stigmatising car users and recognises the added value of the automobile to the transport system as a whole. **Yet is also suggests 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 CO_2, 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 tools[48]. **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 Lascoumes 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 view[49].

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 efficiency[50], 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 plan[53]), 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).

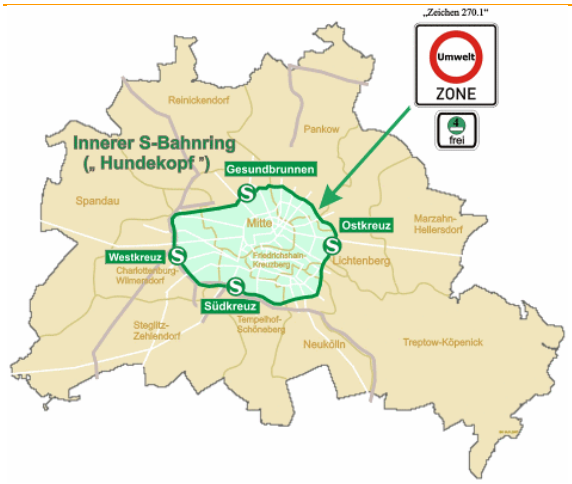
[52] Lutz M., Rauterberg-Wulff A., *Ein Jahr Umweltzone Berlin: Wirkungsuntersuchungen*, Senatsverwaltung für Gesundheit, Umwelt und Verbraucherschutz, Abteilung Umweltpolitik, Referat Immissionsschutz, Mai 2009.

[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 policy[55]. 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 measure[56]. 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 sueing 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.

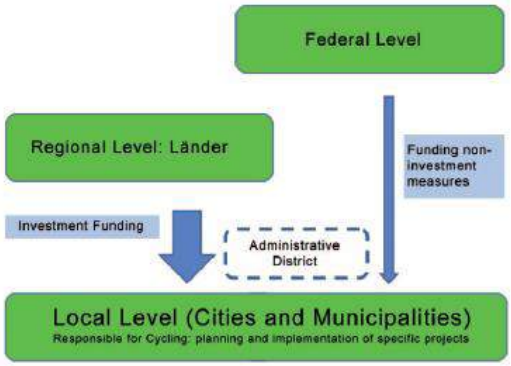
Delays in processing the referendum results are partly explained due to the Senate administration's efforts to seek a compromise within the Cycling Council. In addition, increased efforts were made in order to communicate those policy measures that were adopted as part of the Senate's cycling strategy (*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://volksentscheid-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

districts[60]. 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 bikes[62]. 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.

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[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 Multicity[64]. 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 (*gesamtstädtischer 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.

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[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 services[67]

By contrast, the development of ride-sourcing[68] 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 fares[69]. 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.

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[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 leadership[71], successive administrative reforms (see section 3) together with political changes and the development of new policy initiatives, such as the Stadtforum[72]. 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 2030[73] 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 use[74]. 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 administration[75]. 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-players[76], 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 questionning 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 is 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 change[79]. 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.

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[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: housing[82] 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.

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[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 party 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.

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7 Table of illustrations