



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

D4.2 - Technical reports for Stage 3 cities

Work Package 4 “Qualitative analysis of Transport policy developments”

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

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

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

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

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

1.1 About Work Package 4 in the CREATE Project

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

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

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

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

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

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

Each report draws on the following datasets:

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

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

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

List of case study writers for D4.2 reports

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

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

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

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

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

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

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

1.3 Summary findings for D4.2 reports

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



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

Work Package 4 “Qualitative analysis of Transport policy developments”

Start date of project: **1st June 2015**

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1 The CREATE project

1.1 Brief reminder about the CREATE project

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

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

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

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

This is done across the 5 cities as follows:

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

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

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

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

1.2 About this document, D4.2 Vienna report

This D4.2 Vienna report develops a case study of this specific Stage 3 city. A preliminary draft was produced by Nicole Badstuber (UCL) in December 2016. It was then completed by Dr Charlotte Halpern (Sciences Po) in April 2018, in order to provide an analysis of transport policy developments in Vienna. It provides key data and high-level interpretations for this case to feed into the wider cross-city analysis of transport policy evolutions being undertaken for Work Package 4 of the CREATE project.

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

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

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

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

1.3 Short summary of D4.2 Vienna report

A number of travel behaviour indicators show that a major transformation has been taking place in Vienna since the mid 2000s. The analysis done in WP4 discusses transport policy developments in the context of the CREATE Stages 1-to-3 evolutionary approach.

More precisely, analysing transport policy developments in Vienna highlights three major findings. First the three policy types coexist with one another, each benefiting from their own champions within the city administration, the political spectrum and the transport policy community at large. More precisely, transport policies shifted progressively from planning for the 'automobile city' (stage 1), towards planning for people (stage 2), which is still dominant in federal transport policies and to some extent, in transport policies at city level as well, and, more recently, towards 'planning for city life' policies (stage 3), which have been incrementally introduced

during the 2010s. As observed in Copenhagen and Berlin, the incremental nature of policy change in Vienna contributes to exacerbating the overlap between the three policy types and for the transition being neither unidirectional nor evenly spread in the region. Second, robust forms of urban governance and the infrastructure and built environment legacy account for the emergence and adaptability of the Viennese model of public transport over time. Drawing on a deeply rooted corporatist form of policy-making, SPÖ elites were able, together with the City administration and the city's utilities company, to negotiate effective implementation with transport organizations, workers' representatives, and district administrations. By shaping opportunities for new entrants – civil society organizations, economic business groups, etc. – into the transport sector, it successfully integrated their demands into the local policy-making community. More precisely, the main drivers for stage 3 policies result from the pressure exerted by ecologist groups and cycling organizations, the election of a red-green majority in 2010 and increased policy capabilities within the City administration and the transport planning community. Third, similarly to the situation observed in other WP4 cities, this evolution is not evenly spread in the city, with some strong differences between the historic city centre, and the inner and the outer suburbs. In this respect, Vienna's historic urban core still benefits from tailor-made transport policy initiatives, including urban design and pedestrianisation initiatives. By contrast the role of the car remains largely dominant on both sides of the city's borders, and accounts for increased commuting traffic flows.

In this context, the report discusses the long-term viability of the Vienna approach to car reduction, which primarily draws on the combination between two policy tools, i.e., parking management and high capacity and quality public transport. Elaborated in the early 1990s, the approach was considerably enhanced and strengthened over the past 3 decades, including through sustainable transport initiatives (the "Green alliance" concept) and new technologies and multimodal travel solutions (smart city agenda) since the election of a red-green majority. Yet the report shows the growing challenges this approach faces in a context of population growth, a rapidly evolving political outlook, and uncertainties related to resources available for public transport in the future. It examines how weakening forms of urban governance have resulted in the growing politicization of transport issues, which manifests itself in two different ways: first, the growing number of transport controversies; and second, new opportunities for ideas and solutions promoted by outsiders to the local transport policy-community. Last but not least, it discusses the potential disruptive role of several challenges: those related to macro-trends, such as population growth and increased commuting traffic flows, those related to forms of urban and regional governance, weakening in the former case, and weakly institutionalized in the latter case, and those related to power relations between advocates of the car, public transport and active modes in a context of increased political competition.

2 Introduction to the Vienna case study

Like many capital cities in Europe, Vienna faces growing pressure on the transport system as demand increases and diversifies. As with other Stage 3 cities in WP4, current debates about transport policies tackle the challenge of population growth, competing demand for scarce road space and strengthening non-motorized alternatives. Furthermore, the Austrian capital-city also faces the challenges of a legacy urban form which profoundly shapes past and present transport policy developments. The urban core of Vienna was built around a backbone of a frequent and connected public transport network in the 19th century. This compact city built during the 19th century therefore lends itself to a transformation into the 21st century liveable city.

Taking a long-term view on transport policy developments in Vienna and the wider metropolitan area, **the report's main objective is both contextual and explanatory at the same time**. More precisely, it contributes to the understanding of historical transport policy developments in Vienna by exploring the 'ifs' and 'how's' of the shift towards a more sustainable transport offer. First, it offers a detailed overview of major developments in transport over time by looking at the evolution of policy objectives, tools and resources. Second it provides some explanation for policy change by examining various drivers – or combination of drivers – that might have exerted an influence on the process.

The analysis of transport policy developments in Vienna highlights the gradual nature of change and provides some explanation for it. First, the changing role of road transport is discussed by analysing transport policy developments over six decades. As post WWII city planning principles focused on urbanizing outer districts, private motorization emerged as a dominant transport policy solution with the support of the Federal government. The report examines how public transport incrementally regained priority over car use until it was eventually confirmed as the backbone of the city's transport network. Second, the report highlights main drivers for policy change in a context of strong political and institutional stability that characterized urban politics since 1955. It discusses the interplay between exogenous factors of change on the one hand, such as Federal or EU legislation, the fall of the Iron curtain, macro-economic changes such as the Oil crisis, and on the other hand, factors of change pertaining to evolving urban politics, both within the Social Democratic Party (SPÖ)¹ and between the SPÖ and its challengers (the Conservative Party², and more recently, the Green Party and the FPÖ³), the strengthening of the city's administration, and the different ways in which urban authorities overcame a large array of social resistances and mobilizations against proposed transport policy changes. In doing so, the report argues that such consistency shaped transport politics in Vienna and accounts for the gradual nature of transport policy developments until the early 2010s. In a context of increased political competition for leadership, the importance of transport issues on the local political agenda is being exacerbated and opens new room for manoeuvre for alternative policy solutions.

Area selection

In this report, the area under scrutiny is that of the Land. In this respect, it somewhat differs from the analysis done in WP3 and refers to a formal level of political governance.

Data availability and sources

The case of Vienna relied on a different research support than other cases in WP4. Partners at BOKU produced a short city questionnaire (Roeder, Klementsitz, 2016), but no workshop was organized⁴. Two series of face-to-face interviews were conducted, first by Charlotte Halpern and Nicole Badstuber (February 2016) and second by Nicole Badstuber (March 2016). Interviewees were asked to identify, explain and discuss transport policy developments marking the shift from a car centric to sustainable transport policy. The report also benefited

¹ Sozialistische Partei Österreichs until 1991, now Sozialdemokratische Partei Österreichs

² Österreichische Volkspartei - ÖVP

³ Freiheitliche Partei Österreichs, a right-wing populist and national-conservative political party.

⁴ For a presentation of the methodology used in WP4, see D4.1 technical report (Halpern, Persico, 2016). A joint paper was produced with partners from BOKU and TUD, together with a poster, for the TRA2018 Conference in Vienna (April 2018) (Roeder et al., 2018).

from the input provided by BOKU and the City of Vienna to WP4, including statistical data, reports, grey literature (e.g., archives) and press archives, as well as from input provided to WP3 and the CREATE project more generally⁵. In addition, Sozialdata's input to the CREATE project and discussions with Werner Brog proved particularly helpful in order to make sense of developments taking place in Vienna⁶.

Data collection was systematized as part of the completion of the WP4 database. This was achieved by the Sciences Po, CEE team (Ann-Kathrin Bersch, Charlotte Halpern, Simon Persico)⁷.

Report outline

The remaining part of this report is organized in two sections. The first section starts by providing a dynamic overview of demographic, socio-economic and institutional changes in Vienna over the past six decades. This also includes changes in transport organization and transport supply. Together, it contributes to highlighting drivers for policy change that are specific to the Vienna case. The second section explores the relationship between those factors of change and transport policy developments. It accounts for major transport controversies and for the choice and selection of policy initiatives. It also discusses their respective effects in the context of the CREATE transport policy development cycle approach. Three main phases are identified with some significant change in the type of policy goals, measures and projects, and in the last subsection, current challenges are discussed into more details.

⁵ See the D3.2 Vienna report (Roider et al., 2017). See also contributions to CREATE meetings, including the WP3 workshop (Sciences Po, Paris, 8-9 March 2017), CREATE consortium meetings and the WP6 scenario-building workshop (UCL, London, 21-22 February 2018), during which presentations were made by researchers from BOKU or representatives from the City of Vienna.

⁶ See Sozialdata's contributions to the Vienna's 1994 Transport strategy (*Vekehrskonzept*), and in particular those related to evolving attitudes towards mobility. These were published by MA 18 as part of a special series.

⁷ This case study has also benefited from the work done outside the CREATE project. First, Charlotte Halpern organized a one-week study visit to Vienna and Bratislava with Sciences Po master students in November 2013. The material gathered on this occasion proved particularly helpful as a first insight into forms of urban governance and policy-making in Vienna. Our group met with leading representatives from the political, administrative and academic spheres. Second, this work also benefited from discussions led within the TUT-POL project, *Transformative urban transport*, led by Diane Davies, with funding from the Volvo Foundation for Education and Research. The case of both Vienna (Bühler, Pucher, 2017) and Paris (Halpern, Le Galès, 2017) were examined in this project. Some of the work about Vienna has already been published (Bühler et al., 2017a; Bühler et al., 2017b). An edited volume is under press, to be published at Oxford University Press in the Autumn (Davis, Altshuler, forthcoming).

3 Major drivers of transport policy change in Vienna.

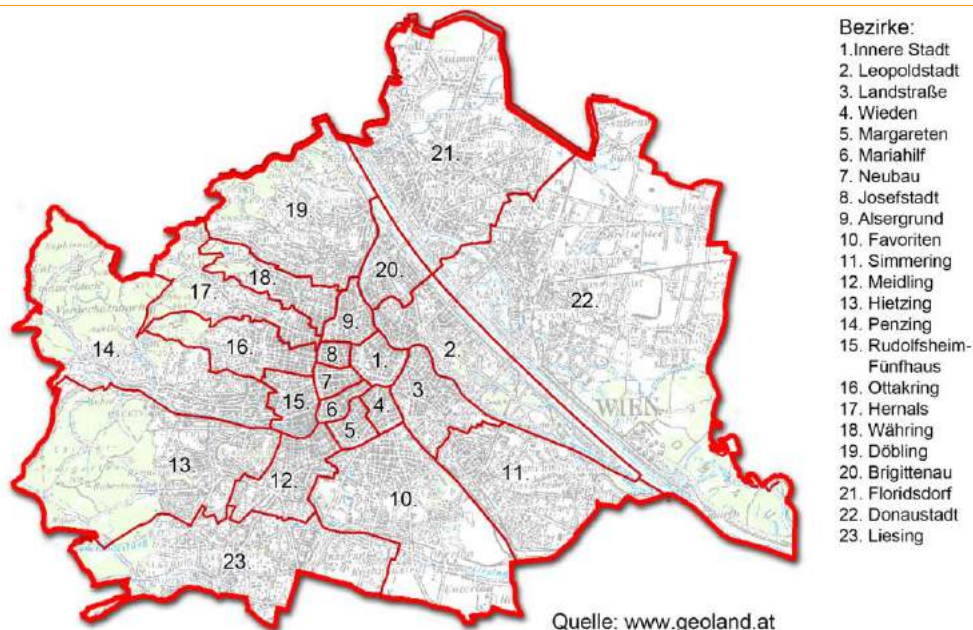
With a population of 1.74 million and a total area of 415 km², Vienna is the most populous state in the country, and by far the largest urban area⁸. It is the country's undisputed political centre since the creation of the Republic of Austria in 1922 (Becker 1999). Between 1945 and 1955, the inner-city district was administered by all four powers, as part of the so-called "Inter-allied Zone". Its economic development was inhibited because of the Soviet occupation and the uncertainty of Austria's status following WWII. After the split of Europe into the NATO and Warsaw pact countries in 1955, Austria was re-established as a sovereign state and the City of Vienna was restored into its pre-1938 borders. Yet in the context of the Cold war, the country's center of gravity moved towards the west, to the detriment of Vienna. Located near the Iron Curtain, the city lost access to its hinterland until 1990.

Since the early 1990s and in a changed political and economic context, it experienced continued urban growth, thus raising new challenges in terms of city planning. The area under study in this report is the City of Vienna, and a distinction is made in some cases between:

- The urban core, which corresponds to district 1 and the area classified on the UNESCO's World heritage list
- The inner-city area refers to districts 1-9 + 20 and covers some 46 km². Its limits are marked with the Ringstrasse, a ring road build in the mid 19th century alongside the former outer fortifications. It is commonly known as "the Gürtel" or the belt.
- The outer-city area refers to districts 10-19 + 21-23, and covers some 367 km²

Map 1a gives an overview of the districts of Vienna. In this section, the following factors of change are successively addressed: 1) Demographic, urbanization and socio-economic trends; 2) Politico-administrative arrangements; 3) Transport planning, organization and funding.

Map 1a. Administrative map of Vienna and its 23 districts.



Source : © WienTurismus, www.geoland.at

3.1 Demographic, urbanization and socio-economic trends

Demographic, socio-economic and urbanization trends have changed dramatically in Vienna since the 1950s. These developments are, to a large extent, comparable to trends observed across other cities in WP4, but also reflect this city's singular trajectory. In the context of the Cold War era, it lost its distinctiveness from both a demographic and economic perspective, by contrast to the changes underway in the rest of the country. As of

⁸ It is followed by Graz, with some 281.000 inhabitants.

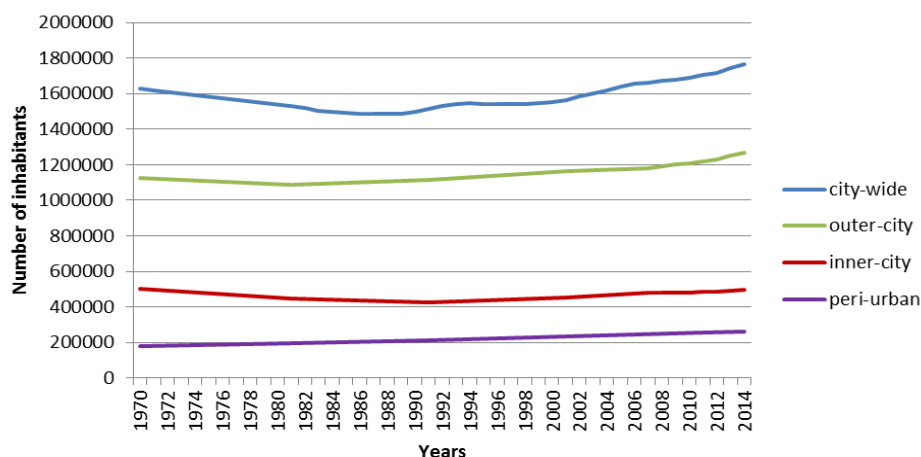
today, the city's undisputed role as the country's economic centre results from the concentration of population in the Vienna region.

3.1.1 Demographic trends: suburbanization and re-urbanization

Within the timeframe considered in this study, demographic trends highlight a major turning point taking place during the second half of 1980s. These overall trends do not reflect any major differences between the inner and the outer city.

Following significant losses of residents between 1934 and 1951, Vienna experienced a short period of low levels of population growth in the post WWII era. It was more evenly spread across the city than during other phases of city development, and predominantly took place across the outer districts, 10 to 23 (except for 20) (Eigner, Resch, op.cit.). This period of population growth was, however, immediately followed by three decades of population decline from 1.62 million inhabitants in the early 1960s down to 1.48 million in 1987 (See Graph 1a). By then, Vienna's population had dropped to its lowest point⁹. Population decline was mainly due to negative birth rates: Vienna was reliant on migration to buffer the move to the suburbs - between 1961 and 1971 nearly 70,000 people migrated to Vienna - rather than people leaving the city *en masse*. Hidden by these averages are conflicting trends: the inner-city was most affected by urban flight in the 1960s and 70s, whereas there was an increase in population numbers in the outer districts – with notable growth in the 1960s and 70s – and others moved further afield. During these two decades, the population in the outer districts rose by around 3,5 per cent.

Graph 1a. Development of the total number of inhabitants by area types [number]



Source: (Statistik Austria, 2002), (Statistik Austria, 2015), extracted from D3.2 Vienna report, p.10.

From the mid 1980s onward, the rate of urban flight fell overall citywide, and signs of re-urbanisation were observed. The trend was not dramatic. Between 1987 and 1991 the population rose by 0.6 per cent to 1.54 million. This represented the first growth in population since the end of the Second World War. This shift mainly resulted from the national labour deficit, the dissolution of the Soviet Union and the war in former Yugoslavia¹⁰. The population growth could be attributed to international migration, in particular from Poland, Czechoslovakia and former Yugoslavia. Throughout this time period, there were differences across the city, with the urban core experiencing continued if markedly slower population decreases until the mid 1990s, by contrast to population growth in the outer districts.

Since 1991, population in Vienna continued growing from 1.55 million in 1995 up to 1.8 in 2016. Growth is still primarily resulting from incoming migration, with some 29 per cent of the Viennese population holding a

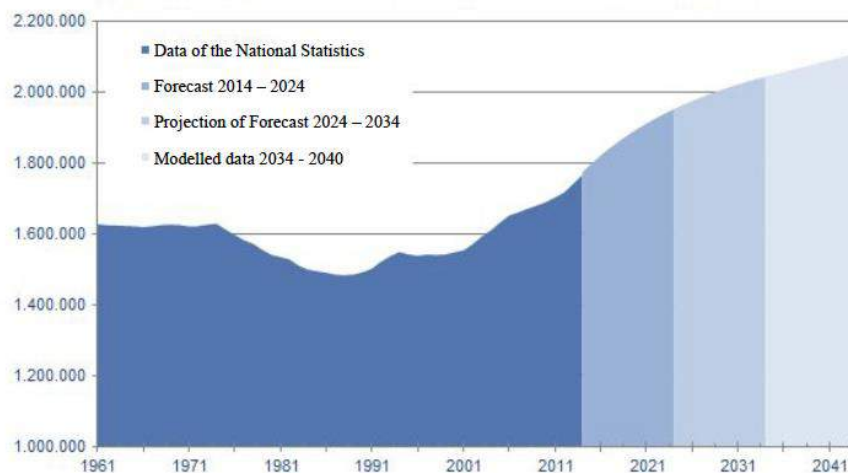
⁹ To set this into context the population of Vienna was a fifth lower in 1981 than in 1923. (Eigner, Resch, op.cit.)

¹⁰ This trend was mitigated by stricter migration policies in the mid-nineties (Magistratsabteilung 24, 2010). See also see D3.2 report.

foreign passport, mainly coming from Serbia, Turkey and Germany¹¹, and a city wide average of 29 per cent of residents with a foreign background MA 23, 2017). By contrast to the situation observed in Vienna, a steady suburbanization process was observed from the 1960s onwards outside the city's borders in the adjacent province of Lower Austria, i.e. peri-urban areas in WP3. It exhibited a steady population growth from 1.77 million inhabitants in 1970 to 2.68 million in 2015.

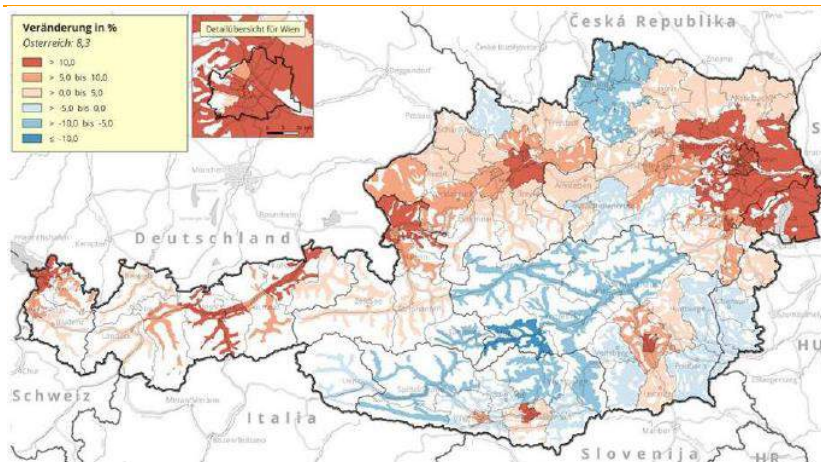
The population of Vienna and its metropolitan area is expected to grow by up to 4.75 per cent by 2025 (See Graph 1b). When considered into the national context (Map 1b), the enlarged Vienna region stands out as the area facing the most important demographic pressure in forthcoming decades (Umweltbundesamt, 2016, p.259-272). Changes taking place in the Viennese agglomeration reflect urbanization trends at national level. As of 2016, more than 66 per cent (5,29 million) lived in urban regions (Statistics Austria, 2016). Vienna, as in other Austrian urban regions, is characterized with rapid suburbanization.

Graph 1b. Population growth rate and projection to 2044 in Vienna



Source : Statistics Austria, Joint presentation by BOKU & City of Vienna, CREATE project, September 2015

Map 1b. Prognosis of the population change in Austria, 2014-2030 (in %)



Quelle: ÖROK (2015b)

Source: ÖROK, retrieved from the 11th State of the environment report, 2016 (Umweltbundesamt, 2016, p.262)

Land-use regulation is a preferred policy tool in order to address these issues, together with housing policies. There again, profound changes in the uses and effects of these policy tools have been observed during

¹¹ Vienna is considered an exception in Austria. At national level, the share of residents from foreign origin is 11,5 per cent of the total population (Statistik Österreich, 2017). See Facts and Figures on migration 2017, MA 23: <https://www.wien.gv.at/english/social/integration/basic-work/facts-figures.html> (last consulted 23/02/2018).

the time span considered in this report, to which one should add some differences across provinces and between provinces and the Federal State.

3.1.2 From strict land-use regulations to diffuse suburbanization

Changes in the spatial distribution of population growth did not take place spontaneously but resulted from the continued interplay between, on the one hand, interventionist, city-led urban policies and on the other hand, the preferences of households and private firms for cheaper residential and commercial spaces at the urban fringes.

Interventionist model of city planning

Following its restoration to its pre-1938 borders, the City of Vienna drew on land-use regulations in order to develop an interventionist model of housing production. This city-led, strongly regulated model aimed at reducing levels of density in the inner-city and developing areas located in the outer districts. Even though negotiations with municipalities located in the adjacent province of Lower Austria took another decade before any of the dispositions enclosed in the Land use plan could be implemented (Pirhofer, Stimmer, 2007), these city planning principles structured the production of housing until the late 1970s.

Between 1945 and 1954, 28,000 new housing units were built, and the rate of home building rose to between 6,000 and 7,000 units a year between 1954 and 1959 (Eigner, Resch, 2001). The peak of home building was reached in 1967, when 17,818 housing units were completed in the year. The housing units were overwhelmingly built by the city, as opposed to only around a fifth by the private sector. The development of housing associations was encouraged in a 1954 Law in order to encourage the production of housing with the outlook for them to be owned. This gave urban authorities an opportunity to profoundly transform urbanization patterns citywide and reduce levels of density in the inner-city area.

By 1971, the number of residents living in the inner-city had stayed the same whilst a number of households moved to the city's periphery. The population spread led to a drop in residential density which constitutes, to this date, a distinctive feature of the Viennese quality of life. Together with the regulation of labour relations, the provision of housing is considered a key dimension of Vienna's Fordist economic model until the late 1990s – and a strategic resource for the SPÖ's continued leadership (Novy et al., 2001; Interview politician, SPÖ, March 2016).

As of late 2017, the City of Vienna still relies upon housing as a strategic tool for urban transformation. It owns some 220,000 housing units, with about one quarter of the Viennese population leaving in municipally-owned housing.

Diffuse suburbanization at the city's fringes and beyond

A number of studies underlined the weakening of this urban economic regime (Backer, Novy, 1999; Novy et al., 2001). The housing market was incrementally re-commodified following the deregulation of rent controls at national level. Cooperatives and local authorities were allowed to sell their housing stocks at market value. In Vienna's private rental housing sector, prices increased continuously since the late 1980s and opened new opportunities for the real estate sector in order to build and rent housing in Vienna and the surrounding areas. The shift was particularly pronounced in the case of large urban development projects, such as Donau City¹² on the Danube Island, the MuseumsQuartier in the inner-city and Seestadt Aspern¹³ in an area located northeast from the city centre (Kurz, 1981). In this context, private real estate developers played an active role in planning and developing large-scale urban developments, in close cooperation with the city's planning authorities, the Vienna Danube Region Development Corporation (WED) and Bank of Austria (Novy et al., op.cit.).

Together, these changes on the housing market account for the City's limited ability to regulate urbanization dynamics through land-use regulations since the late 1990s. More precisely, the post WWII top-down

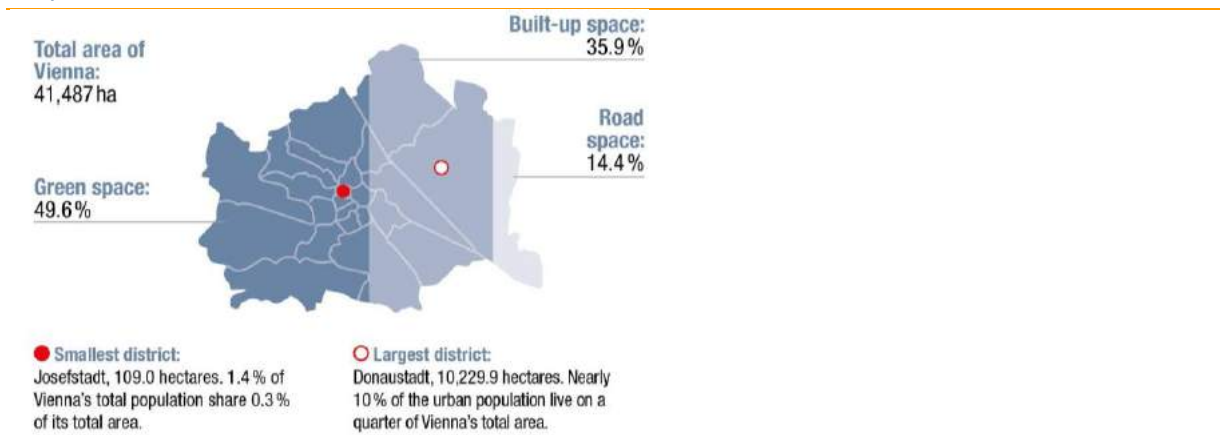
¹² Donau City is considered one of Vienna's flagship urban developments from the post WWII era. See below.

¹³ This the most recent development undertaken by the City of Vienna, some 7km East from the city centre. See below.

approach to urban planning is weakening, and when considered at national level, it is reduced to a minimum. This is particularly marked at the city's fringes, where diffuse urbanization and low-density developments took place.

Suburbanization has also characterized developments taking place across the city's borders, in the province of Lower Austria. In order to attract wealthier households and social groups, municipalities outside Vienna developed aggressive housing and real estate policies in order to allow for low density settlements. Until the early 1990s, some of the richest municipalities in Austria could be found in Vienna's functional urban region (OECD, 2003). Space consumption per inhabitant rose by 25 per cent since 1990, and increasingly threatens the preservation of green spaces while at the same time, increasing car dependency (Tötzer, Gigler, 2007). Such levels of competition between local authorities also impact the location of workplaces, with a strategic use of fiscal policy tools and land-use regulations in order to attract firms and new economic development centres. In this respect, the City of Vienna also contributes to the dispersion of employment within its borders in order to accommodate this demand in spite of rising real-estate prices. Overall, prices for housing ownership in Vienna underwent a 67 per cent increase since 2008, which is significantly higher than in other fast growing cities in Austria (Umweltbundesamt, 2016, 261).

Map 1b. Land-use in Vienna, as of end 2016



Source : MA 28, MA 37 and MA 41, calculation by Municipal Department 23 - Economic Affairs, Labour and Statistics, 2018.

The spatial distribution of workplaces

In parallel to changes in the population's spatial distribution, some changes were also observed in the amount, the distribution and the type of workplaces over the timeframe considered in this study. The period of rebuilding after the war led to the reinvigoration of industries in the inner districts: in 1954, there were 66,958 workplaces in Vienna, with some 52 per cent located in the inner-city (Eigner, Resch, op.cit.). Following the decision reached in 1955, a large share of industrial firms and workplaces relocated in Lower Austria and towards other provinces. Employment in the inner districts fell from 148,000 to 113,000 between 1961 and 1991. The distribution of workplaces gradually shifted towards the outer districts, with 45 per cent of the workplaces located in the inner-city districts in 1973.

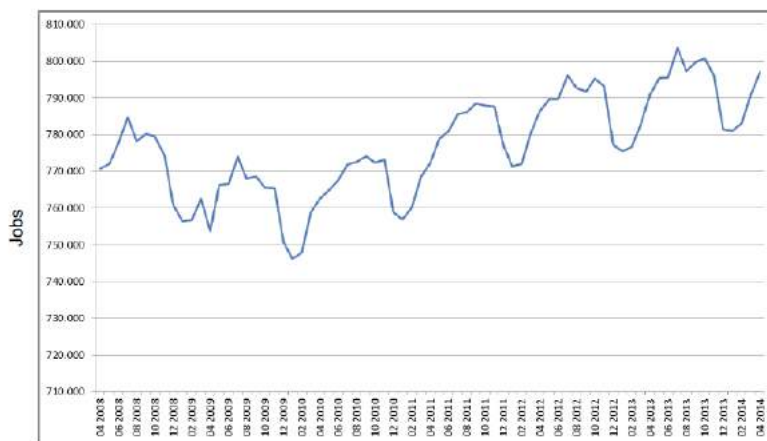
These changes in the location of employment also reflected **some changes in the type of employment**: manufacturing industries accounted for 41 per cent of employment, compared with 58 per cent for service industries. Whilst an upswing of the secondary sector was observed at the fringes of the city, employment dispersion did not lead to a decentralization of control up until the mid 1970s, and in 1973, headquarters in Vienna controlled 43 per cent of all jobs in the industry countrywide (Becker, Novy, 1999, 136). More space-consumptive industries were relocated to outer districts and new businesses developed outside the city's borders, especially in the areas located south of the River Danube. Outer districts did not all benefit from similar trajectories in their economic recovery¹⁴.

¹⁴ Floridsdorf, the 21st district in north-eastern Vienna where the Soviet occupation forces were stationed, only started to rebuild and economically recover a decade later than its counterparts (Eigner, Resch, op.cit.)

Nevertheless, the city experienced continued growth in GDP and in the number of jobs from the early 1970s onward (Eichmann, Nocker, 2015). Such growth was mainly driven by public employment, including international public organizations setting up their headquarters in Vienna, and jobs in the construction industry, which rose continuously in relationship with non-market services. Moreover, industrial foreign direct investments and services remained concentrated in Vienna. During the 1980s, there was an increase of workplaces by 7,3 per cent city-wide, due to the rising number of commuters and the influx of migrants who took up residence in Vienna (European Commission, 1996). This number has further increased by 29 per cent over the past 20 years.

Following the fall of the Iron curtain and accession to the EU in 1995, this local Keynesian economic development policy was incrementally dismantled and replaced with increased efforts to attract higher qualified jobs altogether, and promote entrepreneurship, services in high-tech and financial sectors. Within Vienna the share of manufacturing workplaces declined to 14 per cent until 2014. Correspondingly, the service industries have increased and now account for 86 per cent of employment. The number of high skilled employment and growth in services, particularly energy distribution, financial and insurance services, increased significantly over the past decade (See Graph 2). Vienna ranks among the world's most popular city for congresses and hosts a number of international organizations (Statistics Vienna, 2017). Tourism, education and culture also contribute to the city's economic growth¹⁵. Over the recent period, some efforts were devoted to strengthening linkages between universities, firms and local authorities.

Graph 2. Evolution of the number of jobs in Vienna (2008-2014)



Source : City of Vienna, Municipality Department of Economics, Labour and Statistics (MA23), retrived from joint presentation by BOKU & City of Vienna, CREATE Project, September 2015

3.1.3 Socio-economic changes in a context of economic growth

Although the balance shifted towards the outer districts gaining in economic importance, inner districts maintained their importance as an employment hub. The nominal gross domestic product of Vienna and the nominal yearly income per capita show a steady growth since the 1970s, which reflects the average annual income of Vienna's inhabitants. Yet, changes in the distribution of workplaces also reflects broader socio-economic changes as well as changes in the education levels of the population (see D3.2 Vienna report).

Until 1973, Vienna experienced a decline in employment numbers, also explained by its stagnating – and aging – population: the percentage of Vienna's population in employment dropped from 69.9 per cent in 1961 to 63.7 per cent in 1971¹⁶. Between 1961 and 1991, those in employment living in the outer districts rose from 43.7 per cent of the total employees to 51.5 per cent. Those in employment residing in the inner districts dropped from 339,000 to 296,000, whilst the number of employed living in Outer districts rose from 378,000 to 434,000 (Eigner, Resch, op. cit.)

¹⁵ For a detailed analysis of Vienna's employment structure, see Eichmann & Nocker (2015).

¹⁶ In addition, the extending of compulsory schooling to year 9 and changes in the law to allow early retirement contributed to the issue.

Income differences between the top and the bottom quartiles have increased continuously since the early 2000s (MA18, 2010)¹⁷. In relationship with above-mentioned changes in the type of jobs and their spatial distribution, the highest concentration of full-time and high-skilled jobs is to be found in the inner city, as well as outer districts, e.g., Hietzing (13th district), Liesing (23rd district), and peri-urban areas in the north and the western parts of the city. In those areas, access to green spaces is also highest. By contrast, the largest share of the population with low-skilled jobs and levels of education, as well as highest levels of unemployment, are concentrated in outer districts between the inner-city and the Danube (e.g., Rudolfsheim-Fünfhaus, 15th district), and in outer districts beyond the “Gürtel”¹⁸.

3.1.4 Concluding remarks

Demographic, socioeconomic and urban changes are expected to have had an impact on mobility demand due to the concomitant evolution of places of residence and the location of economic centres. Moreover, apart from a small number of city-led urban development projects in which a strong control on land-use regulations was maintained, the city's ability to regulate the location and main features of new developments for residential and commercial spaces is weakening. This is particularly the case for new economic centres and urban developments at the city's fringes. Beyond the city's borders, in both Lower Austria and in Burgenland, inter-municipal competition increased and this favours low density settlements and space-consuming developments. Overall, demographic growth and urbanization trends have shaped the framing of political debates and policy objectives in Vienna. These factors have been instrumental in justifying interventionist approaches to land-use regulation and housing in selected areas while at the same time allowing for differentiated enforcement strategies when seeking to attract jobs and firms within its own borders.

3.2 The distribution of powers in the context of the Austrian politico-institutional system

Austria has three levels of government: the federal state, the federal provinces (*Bundesländer*) and the municipalities.

- The federal state is responsible for federal legislation, external relations such as foreign policy and trade, and defence. It is also responsible for ordinary jurisdiction.
- The federal provinces hold legislative and executive powers.
- The smallest unit of government, the municipalities, do not hold legislative powers. Although they do not draft any legislation they are the enforcers of the federal government's administrative tasks.

Within this federal system, the responsibility to enact laws is divided between the federal state and the provinces. The City of Vienna has a specific status within the national politico-administrative system. In this context, its effective political capacities and level of autonomy is defined in the context of the Austrian model of cooperative federalism (Bischof, Karlhofer, 2015). This is addressed in the following section.

3.2.1 Vienna as a city-state

Since 1955, Vienna has combined the three main functions of a Federal capital, a Federal province and a municipality, and is also the headquarters of a number of international regional offices. As a Bundesland (federal province)¹⁹, Vienna has its own legislative and executive body. The city's statutes specify the respective powers of the Council, the Senate (i.e., the government) and the mayor, as well as those of the city's administration.

¹⁷ For a comprehensive overview of the spatial distribution of socioeconomic changes in Vienna, see MA 18, (2010), Soziale Veränderungsprozesse im Stadtraum: <https://www.wien.gv.at/stadtentwicklung/studien/pdf/b008107.pdf> (last consulted 23/01/2018).

¹⁸ See above for an explanation of this term.

¹⁹ Vienna has been one of the nine federal provinces (*Bundesländer*) that formed the Republic of Austria since 1922.

Although representing in theory two levels of government, Vienna only has one legislative chamber that serves as both the city council and the state legislature. The legislative body is the Vienna Provincial Parliament (Landtag). The 100 members of the city Council (*Gemeinderat*) are also the 100 members of the Landtag (Vienna Provincial Government). The members are elected for five year terms by the Viennese population. The elections are on the basis of proportional representation. A number of city council committees, consisting of representatives of the political parties elected into the provincial parliament, are in place, including a Committee for Traffic (Kostal et al., 2014).

The highest executive body of the Bundesland is the Vienna Provincial Government (Landesregierung) or Senate. It is headed by the Governor (Landeshauptmann) who also acts as the city's Mayor. The Landesregierung consists of 12 members, called the City Councillors, and the Governor. The Mayor is elected by the city council. His or her term is equivalent to that of the city council legislative period. Together with the City councillors, the mayor manages the city's administration, or Magistrat (Stadt Wien, 2016e).

The City of Vienna: a two tiers governance system

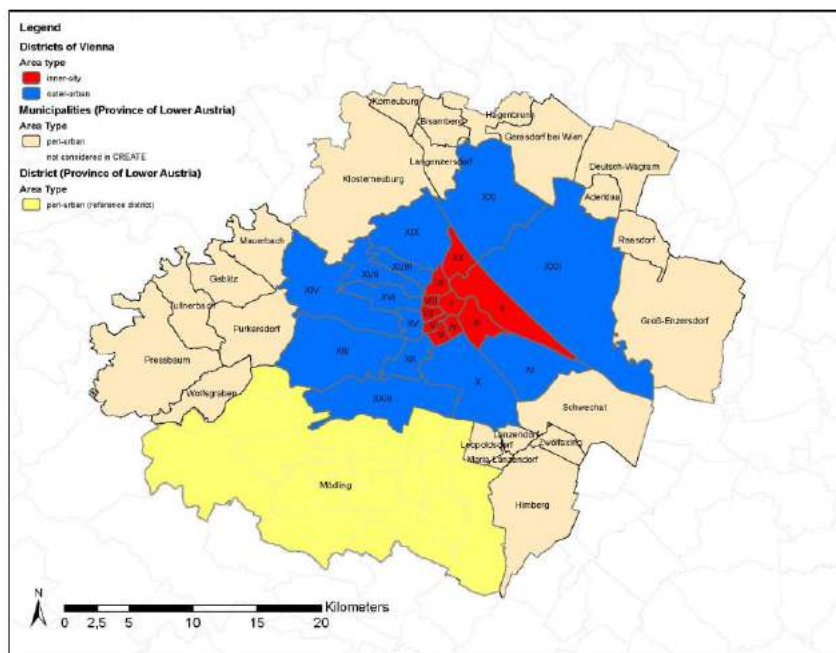
As a statutory city, Vienna is a single administrative district in its entirety. Since 1955, it has been restored into its pre-1938 borders. It comprises 23 districts and covers an area of 415 km².

The 23 district authorities were created in 1850, when the city area was enlarged by the inclusion of surrounding communities. **They do not form part of the city's administration and are not considered administrative districts**²⁰. The districts' numbering reflects to some degree the process by which they were incorporated into Vienna (see Map 2a):

- The first (District 1) refers to what used to be Vienna's historic centre and the entire city until 1850. It was awarded a UNESCO World heritage status in 2001.
- Districts 2–9 (and 20 which was in 1900 separated from the second district) were incorporated in 1850 and are known as *Innenbezirke* (inner districts). They are composed of the localities that were located on the other side of the second ring of fortifications around Vienna (the Gürtel) and within the Green Belt.
- The other districts (10-19; 21-23), which are known as the *Außenbezirke* (outer districts), were incorporated between 1874 and 1938, mainly in 1892.

²⁰ They are headed by legally qualified civil servants, performing the tasks assigned to them in the "Allocation of Competencies of the Vienna City Administration". Document available her : <https://www.wien.gv.at/english/administration/organisation/pdf/administration.pdf> (Last consulted January 2017)

Map 2a: Area types of the stage 3 city “Vienna” (2014)



Source: retrieved from D3.2 Vienna report, p.8.

3.2.2 Evolving Bund-Land relationships in the context of cooperative federalism

The City's effective level of autonomy is defined in the context of the Austrian model of cooperative federalism (Bischof, Karlhofer, 2015). Unlike the situation observed in other federal states in Europe, the autonomy of Austrian provinces is limited and their reserved powers are limited to a small number of areas, e.g., local finances, education, public services and public tendering. In all other policy domains, such as transport for example, the distribution of powers is not clearly defined in the Constitution, thus potentially leading to overlapping, competing or joint initiatives between levels of government. Apart from a small number of exceptions, the Bundesrat enjoys no veto powers against federal legislations. **Alternatively, in those areas in which the provinces are responsible for controlling the execution of Federal legislations, the relationship is not a hierarchical one, but rather a complex one, in which successive negotiations shape policy implementation.**

In this context of “cooperative federalism” in which the distribution of powers has often been characterized as complex and unclear (Bischof, Karlhofer, 2015), evolving relationships – political, institutional, etc. – between levels of government play a critical role in shaping policy developments at the local level. From a political perspective, the essentials of Austrian consociationalism, based on the once predominant Austrian People's Party (ÖVP)²¹ and the Social Democrats (SPÖ)²², eroded from the 1970s onward and more so in the context of the economic crisis. Until then, these two parties usually formed coalition governments. They were intertwined with trade unions and business organizations respectively and government linked up with large interest groups in neo-corporatist institutions. In this framework, decision making was highly centralized and top-down, but was also instrumental to finding compromises across policy areas (Becker, Novy, 1999). Since the late 1980s, systematic recourse to coalition governments at both federal and provincial levels, contributed to increase political party competition and to weaken traditional forms of corporatist decision-making. Clientelism began to lose its importance, with some variations across sectors and across provinces. This appears to be increasingly the case since the 2010s, due to increased differences between the federal government's party composition and that of the provinces, with new parties like the Green Party entering coalitions with the ÖVP and the SPÖ in six provinces, including Vienna (Karlhofer, 2015).

²¹ Österreichische Volkspartei - ÖVP

²² Sozialistische Partei Österreichs until 1991, now Sozialdemokratische Partei Österreichs

From an institutional perspective, when considered over time, it is often considered that Bund-Länder relations were characterized, between 1945-1988, by creeping centralization or moderate federalization according to policy domains, while as of 1988, **it gave way to uneven developments and several attempts at federal reforms in order to clarify the existing system.**

3.2.3 The Austrian spatial planning system in brief: the case of Vienna

Within the national spatial planning system, each province develops its own spatial strategies, plans and projects. There are no legislative provisions for spatial planning at the Austrian federal level: no planning law and no competence for urban or spatial planning. The plans provided by the provinces are only binding for state administration and public administration at the lower levels (provinces and municipalities), not for citizens and businesses. The following list provides an overview of the plans and policy documents that were consulted while preparing this report²³.

Table 1a. List of major plans and policy documents

1952	Stadtplan Wien
1961	Zoning plan Vienna
1968	Verkehrskonzept Wien
1980	Stadtentwicklungsplan Wien + Verkehrskonzeption
1994	Stadtentwicklungsplan Wien (STEP 1994) + Masterplan Verkehr
2001	Austrian Spatial Development Concept (ÖREK 2001)
2003	Masterplan Verkehr 2003
2005	Stadtentwicklungsplan Wien (STEP 2005)
2011	Austrian Spatial Development Concept (ÖREK 2011)
2015	Stadtentwicklungsplan 2025 (STEP 2025) + Fachkonzept Mobilität

The most important level of spatial planning is municipalities and cities. They enjoy an autonomous competence of local planning. The mayor and the municipal council have the responsibility to control land use through various types of plans²⁴. In view of its specific status in Austria – as the biggest city and in its double role of state and capital - Vienna has developed specific planning tools and regulations, including urban development plans (Stadtentwicklungsplan), to which it will be extensively referred to in Section 4 of this report. In Vienna, successive plans defined the city's objectives for urban planning for a 10-year horizon. Since the late 2000s, and similarly to other countries in Europe, a shift has been observed towards strategic spatial planning and reflects in subsequent plans' method and content. A common vision was elaborated by drawing on growth estimates, scenario planning and extended consultations. This in turn allows for increased flexibility at implementation stage. In Vienna, both STEP 2005 and 2025 are representative of this shift (Healey, 2003, see below).

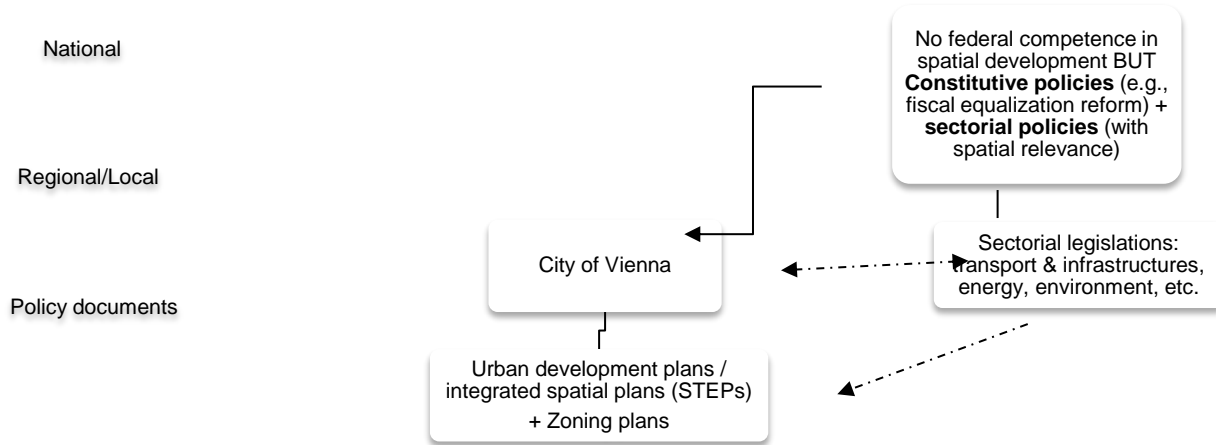
Furthermore, in the Austrian context, urban planners and architects have been instrumental in ensuring the overarching role of urban and spatial planning principles over issue-specific planning processes. Historically, this has been particularly marked in the case of Vienna, with famous architects and planners shaping the city's urban futures from the second half of the 19th century onward. There again, some changes have been observed during the time span considered in this report and the city now increasingly relies upon in-house urban planning expertise (see below, section 4). Yet when compared with other cities under study in WP4, these practitioners still play a critical role in shaping public and expert debates, political discourses and planning processes. They are represented in the city's planning advisory board, where they contribute to the emphasis given to spatial structure and urban planning rather than urban design. Their influence in the Viennese context also draws on the longevity of their professional careers and their multiple positions as academics, consultants and experts (Kurz, 1981; Pirhofer, Stimmer, 2007). As summarized by an interviewee: *"the Viennese world of transport and urban planning is very small. Everybody knows everybody. It doesn't mean these experts don't have an international reputation and career. But they tend to remain in Vienna for the largest part of their careers and are deeply embedded in local planning politics. Maybe this will change with the new generation and evolving constraints in the urban planning academic sphere."* (Interview City administration, February 2016). By contrast, in the case of debates

²³ The largest share of these documents is available in local university libraries or online/on-demand through Vienna's City planning Department's website: <https://www.wien.gv.at/stadtentwicklung/dienststellen/ma18/> (last consulted 10/02/2018).

²⁴ These plans include: a local development scheme (Örtliches Entwicklungskonzept), the land use plan or zoning plan (Flächenwidmungsplan), and the local development plan (Bebauungsplan). See the information provided in the SPECIAL project (EU funded, under the intelligent Energy Europe programme) about Frameworks for spatial planning in Austria : <http://www.special-eu.org/knowledge-pool/module-2-spatial-planning-frameworks/policies-and-objectives/austria-planning-systems/> (Last consulted, December 2016).

regarding the historic city-centre, architects and practitioners specialized in heritage conservation have kept the upper hand on urban planning debates, which in turn accounts for a greater emphasis on urban design (De Frantz, 2001).

Figure 1. The Austrian spatial planning system



←····→ Spatially relevant policies / conceptually independent, but politically linked in individual cases.

Source: Own elaboration, adapted from Schremmer (2013), Sciences Po STU Masters study visit to Vienna-Bratislava.

3.2.4 Ensuring Vienna's role and function as the main national hub

The coordination of federal and regional interests lies in the hands of ÖROK, the Austrian Conference on Spatial Planning. It was founded in 1971 by the federal government, the Länder and municipalities in order to coordinate spatial development at the national level. Its role considerably increased following Austria's accession to the European Union, and it now operates as a coordinating body between the EU and domestic levels of government for all issues related to spatial and regional planning. ÖROK develop and publish the "Austrian Spatial Development Concept" every ten years. The current version is "The Austrian Spatial Development Concept 2011" (ÖROK 2011). ÖROK also plays a key role, together with negotiations between and within political parties, in order to ensure both vertical (across levels of government) and horizontal (across ministry departments) coordination.

The role of the Federal State in transport planning and capacity investments

Despite its lack of competences in spatial planning, the Federal government retains a key role through its sectorial policies, including transport and infrastructure planning (see Figure 1). Since the 1995 accession to the EU and the 2004 enlargement, most efforts at federal level have been devoted to strengthening Vienna's central location as a major European hub. This was made material through a number of investments in strategic transport infrastructure and networks, including the extension of the airport, the development of a new main train station (Bahnhof Wien Europa Mitte), the extension of major railways and highways, and the development of cross-border relations as part of the Danube Region strategy and the CENTROPE project.

The federal government also plays a direct role in the Viennese transport network and the provision of transport services through its agencies. Usually, projects are harmonized with the framework conditions set by the ministry, which means that its influence remains limited except for decisions on national roads, including urban motorways, and the railway system. More specifically, it plays a critical role in the planning and operation of the rail-based network through the ÖBB (national railways agency), and that of national roads, including urban motorways (see below). Capacity investments in both networks are usually harmonized with the framework conditions set by the ministry, which means that its influence remains high for decisions on national roads and the railway system, and more limited for other networks. In addition to its role as transport authority, the Federal transport ministry, the national council and Federal agencies play a key role in funding transport capacity investments: up to 50 per cent of capacity investments in Vienna can be co-funded with Federal subsidies, provided they are coherent with Federal transport policy priorities and with political agreements regarding the allocation of funding between provinces.

Since the 2010s, a large share of federal policies and subsidies has been reshuffled according to the priorities set in the smart city agenda. It fosters increased quality of life for citizens and increased competitiveness through innovative action in the fields of energy, housing, mobility and urban planning. Cities' efforts to achieve commonly defined goals are supported through the Climate and Energy Fund and the development of a common set of indicators aimed at monitoring, benchmarking and assessing²⁵.

Spatial planning principles and major urban development projects in Vienna since the 2000s

The priority assigned to and the resources to be gained with Vienna's enhanced function as a European hub led to a reframing of the spatial planning principles into a regional context. Since STEP 2005, the main challenge lies with population growth estimates in the city and the wider region. As part of preparatory works for STEP 2005, debates about spatial planning and urban development have repeatedly highlighted the need to contain urban growth by seeking a compact city model (see also OECD 2003). Similar to the situation observed in London, the preservation of the Greenbelt (Wienerwald) constitutes another major planning principle against urban growth. This includes the re-grouping of residential and economic activities, the restructuring of existing infrastructure and services through capacity extension, and the maintenance of public service provision in low-density areas. Over the recent period, these spatial planning principles are increasingly framed in the context of the smart city agenda, which was introduced at federal level in 2010. As part of this overarching goal, large-scale urban development and regeneration programmes were introduced after the mid 2000s, including major flagship projects such as the central station (Hauptbahnhof), Donau City and Seestadt Aspern, which seek to re-balance urban growth towards the Eastern side of the Danube.

Only two of these projects are briefly introduced here, due to their relevance as major recipients of federal subsidies as part of its infrastructure planning priorities and of the smart city agenda:

- Donau City

The development of this large business district was launched in the early 1960s and evolved incrementally during the next three decades. Critical milestones were the opening of the UNO city (1979), the metro (1982), and a congress center (1987). Following the failed project to host the 1995 world exhibition, new high-rise towers were built, together with new transport access (mainly by road). The development now covers an area of some 17,4 ha with some 500.000 m², mainly available for offices and commercial spaces. As of today, the eastern part of the area is under development. (StadtentwicklungWien, 2017)

- Seestadt Aspern

This is the most recent development undertaken by the City of Vienna. This urban extension is planned on a 24-ha area located 7km east from the city centre on a former airport field. It was designed as a showcase for the "Viennese approach to smart city planning", and relies upon an extensive use of smart technologies, energy efficient buildings and a liveable community with good, reliable public transport access to the city centre via the newly constructed U-Bahn extension. It is planned as a multi-phase development until 2028, and is planned to host 20,000 residents and 20,000 workplaces. Plans for new roadways are also under discussion in order to connect the northern periphery of Seestadt with two existing motorways. The aim is for Seestadt to be as little car dependent as possible and equidistant, by public transport, from both Vienna and Bratislava as part of the Twin City strategy advocated in STEP 2005.

The latest Urban development plan (Stadtentwicklungsplan 2025, STEP 2025) lays down the main principles for urban growth in Vienna. By contrast to STEP 2005, which was generally considered a failure in its inability to effectively structure policy choices, STEP 2025 now includes a series of thematic action plans that provide a set of measures, indicators and schedule for implementation. While not constituting any guarantee of effective implementation, it publicly engages all stakeholders and provides a basis for mainstreaming specific policy goals across sectors.

²⁵ The Smart City Profiles indicator method has been developed and tested in six Austrian cities, including Vienna, since 2013. This method aims at encouraging cities to "self-assess" themselves.

3.2.5 Weakly institutionalized forms of regional governance

In the Austrian spatial planning system, co-operation between the provinces in border regions is voluntary but customary. Apart from some specific areas in which have emerged formalized forms of cooperation, relationships between the City of Vienna and its hinterland are undertaken as part of inter-provincial relations.

The development of the Vienna metropolitan area or Stadtregion + emerged in the context of the Federal State's efforts to promote urban regions in order to constrain urban sprawl and foster greater spatial integration. Stadtregion + covers an area of 797 km²⁶ and encompasses the City of Vienna together with 40 municipalities outside the Vienna province, in Lower Austria. This also includes those in the political district of Mödling. Up until now, the metropolitan region remains weakly institutionalized. The planning organisation East (PGO - Planungsgemeinschaft Ost) serves as a strategic body for joint spatial planning and a forum²⁷ was established in 2006 in order to facilitate informal cooperation on both sides of the border. In transport however, the regional transport authority gained some strength since its creation in 1984. The Regional Transport Association (VOR) coordinates and organizes public transport in the region. Since the 2000s, it has also enclosed the province of Burgenland and offers a joint platform for cooperation in order to address travel demand and commuting traffic in Vienna's urban area (see below).

Furthermore, several initiatives among which CENTROPE and the Twin-city metropolis - aimed at fostering greater integration within the cross-border region. The CENTROPE area is referred to in a number of spatial planning documents and still guides some of Vienna's urban development and transport projects across the Danube. It encloses the functional urban areas of 4 cities – Vienna, Bratislava, Győr and Brno – located in 4 different EU member states. It brings together 16 subnational authorities and a total of more than 7 million inhabitants (see Map 2b) (OECD, 2003; Giffinger, Hamedinger 2009). This cross-border metropolitan region, and more precisely the twin city vision of regional development, was particularly dominant in the 2000's spatial planning document (STEP 2005) and supported in the context of the 2000-2013 EU structural funds programming periods. It results from Vienna's attempts to frame a number of issues in the context of an increased integration of labour markets at a regional level. Cross-border flows of commuters increased on a daily basis, thus contributed to increase pressure on Vienna's transport system. In the past, joint initiatives have focused on education, tourism and transport with the support of EU funding. In the latter case, the focus was on freight and passenger transport, and these projects have fostered the development of cross-border transport services by train and waterway.

Map 2b. The CENTROPE area and the twin-city metropolis



Source : ÖIR, Informationsdienst GmbH,

²⁶ For more details, see D3.2 Vienna report, p.7-8.

²⁷ Metropolitan area management Vienna-Lower Austria SUM (Stadt Umland Management)

This cross-border integration strategy was recently revised in view of the new red-green coalition's priorities in Vienna, that of their counterparts in neighbouring countries and that of the EU as part of its cohesion policy²⁸. Critical views argued that the CENTROPE project primarily sought to expand the Viennese urban growth model and increase economic integration to the city's benefit, thus leading to strong resistance and rejection once these cities, and Bratislava in particular, had been able to strengthen their own policy capabilities.

3.3 Politics in Vienna

In Vienna, politics and forms of urban governance are characterized with strong levels of stability and continuity. It is considered a stronghold of the Social Democratic Party. Within the Austrian federal State, the City of Vienna is considered exemplary of the corporatist form of decision-making that was distinctive of the post-WWII national political and economic system. It contributed to inventing it as part of an interventionist form of municipalism during the 1920s, and until today, despite some adjustments, this form of decision-making remains central to the functioning of local government (Becker, Novy, 1999).

3.3.1 The dominant role of SPÖ in Viennese forms of urban governance

The SPÖ has ruled the city without interruption since 1945, for short periods as a coalition government but always as the main partner²⁹. Dr. Michael Häupl was elected Mayor in 1994 and remained in power ever since (see list below). Until 2010, all transport ministers of the City of Vienna had also been party members of the SPÖ. This changed in 2010, when the SPÖ could not secure a majority.

Table 1b. List of Mayors (and governors) of Vienna since 1945 (all from the SPÖ)

1945-1951	Dr. Theodor Körner
1951-1965	Dr. Franz Jonas
1965-1970	Bruno Marek
1970-1973	Dr. Felix Slavik
1973-1984	Leopold Gratz
1984-1994	Dr. Helmut Zilk
Since 1994	Dr. Michael Häupl

The Red Vienna's historic legacy

The SPÖ's hegemony over forms of urban governance in Vienna is often referred to in the literature as the "Red Vienna". This is mainly due to the persistent legacy of the local welfare state that emerged during the post WWI era (Becker, Novy, 1999; Novy et al., 2001). Historically, the Social Democratic hegemony built on policies with strong labour rights and social housing, and proved hugely innovative in terms of policy initiatives. Following WWII and the end of the Nazi regime, this corporatist form of local clientelism resumed and consolidated the SPÖ's core voter base, namely the working class and labour unions. Yet within-party politics were increasingly set at Federal level, with less political capabilities at the local level to develop alternative policy solutions.

As the SPÖ still referred to Vienna as a showcase of Social Democratic politics, it nevertheless resulted into close interconnections between bureaucrats and politicians across levels of government and as part of individual professional careers. In line with the political arrangements observed at federal level, the ÖVP also benefited from this system of subsidized social services. The largest share of local public services was consolidated as part of the Vienna City Utilities Company³⁰ in 1952, which ranked third among Austrian service enterprises (Kostal et al., 2017). The main goal of local SPÖ elites was to protect the local economy and to attract large foreign investors, including international organizations, to choose Vienna as their headquarters. Since the development of the metro in the 1970s and the strengthening of the Vienna City Utilities-Transport Services³¹,

²⁸ Interview Austrian Institute for Regional Studies and Spatial planning (OIR), November 2013.

²⁹ This hegemonic position goes back to the 1920s and the early days of the Republic.

³⁰ Wiener Stadtwerke

³¹ Wiener Stadtwerke-Verkehrsbetriebe

Vienna's municipally-owned transport company, the location and access to public transport services have been included in this distributional system (Interview transport expert 1, March 2016).

As of the late 1980s, this system was weakened and reorganized following a series of liberalization reforms at federal level in the housing sector. At the local level too, new generations of SPÖ elites achieved greater autonomy from within party politics at federal level and increasingly sought to strengthen the urban dimension of sectoral policies (e.g., transport, energy, etc.). Also, the emergence of social movements and new political parties challenged this corporatist form of local clientelism and consensus-oriented politics. New forms of direct democracy were introduced and consultation mechanisms were systematically introduced in pursuit of a successful co-option strategy (Pelinka, Rosenberger, 2007). Financial support and the sociospatial distribution of public goods were extended to potential opponents as to avoid open controversies.

Insofar as **the SPÖ remains the main partner in successive coalition governments**, it still sets the city's finances and resources, negotiates with municipally-owned companies and plays a critical role in shaping opportunities for new entrants across policy domains. The Red Vienna's legacy is also vivid in the city's employment structure: the public sector remains the largest employer in Vienna (Eichmann, Nocker, 2015, 197). More than 18 per cent of the city's budget is devoted to social welfare and housing.

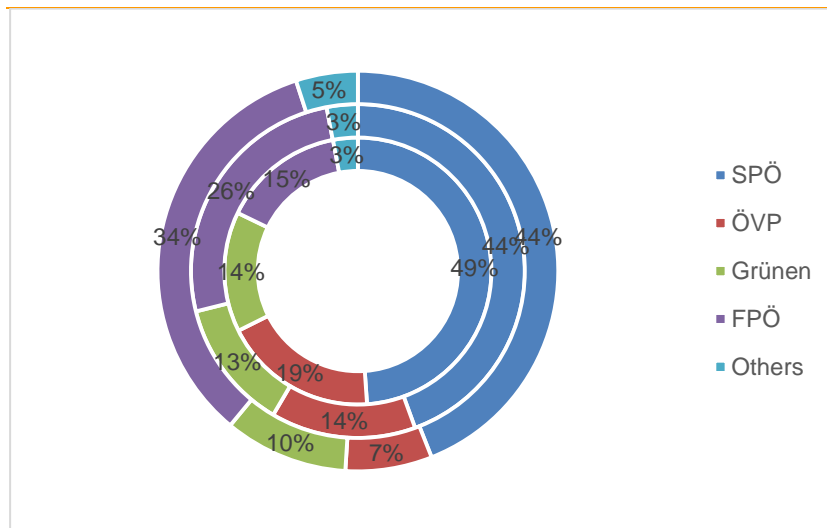
3.3.2 Who challenges the SPÖ's political leadership in Vienna?

Historically the political spectrum at the local level was divided between the social democrats (SPÖ) and the Conservatives (ÖVP), which until 1983 together managed to secure 90 per cent of the electorate. However, by 2010 that share fell to 58 per cent and this trend was confirmed after the 2015 municipal elections (see Graph 2a). Two thirds of the disaffected voters pledged their vote to the FPÖ whereas the Green Party (Die Grünen, die Grüne Alternative) managed to secure the remaining third that felt disillusioned by the mainstream parties.

The SPÖ have previously formed coalitions even though they were the largest party. From 1943-1973 and 1996-2001 the social democrats were in a coalition with the ÖVP, which accounts for the above-mentioned consensus-oriented politics. Since 2001 however, the SPÖ's absolute majority in local elections was challenged by the Green Party. This party was created in 1986 at national level and entered the local parliament in 1991. It has been part of the ruling coalition since 2010. Its traditional strongholds are located in the inner-city districts, in Neubau (7th district), Josefstadt (8th district), Alsergrund (9th district), Mariahilf (6th district) and Wieden (4th district). The leading figure of the Green Party in Vienna is the current vice-governor/vice-mayor of Vienna, Maria Vassilakou. Since 2010, she has also been Deputy Mayor for urban planning, transport, energy and citizen participation.

The Green Party has played a critical role over the past 30 years in **challenging the SPÖs political preferences in transport**. It is committed to ambitious sustainable development goals, including the development of non-motorized transport solutions. Before the Green Party became the SPÖ's coalition partner, Mayor Häupl already agreed to make concessions to his challenger in order to secure their support during his first term. Although both parties suffered a loss in voter shares in the latest elections in 2015 - the social democrats lost 4.75 per cent of their vote dropping to 39.59 per cent and the Green Party lost 0.8 per cent falling to a voter share of 11.84 per cent - they could form a majority coalition under the co-leadership of Mayor Häupl and vice-mayor Vassilakou. Over the past decade, the FPÖ has also weakened the stronghold of historic political forces, particularly that of the Conservatives whose share of the votes was significantly reduced following the last elections. Since the 2010 elections, FPÖ has confirmed its stronghold in outer districts.

Graph 2a. City of Vienna elections, vote share of each party 2005 vs. 2010. vs. 2015



Source: Stadt Wien, 2015. Extracted from WP4 database.

3.3.3 A weakening form of consensus-seeking policymaking

In the context of the Viennese political party system, **within-party politics (SPÖ) and negotiations between political parties play a critical role in policy-making**. While the two main parties dominated the scene and often in a governing coalition, disagreements were usually settled behind closed doors. This was achieved by striving for consensus with the major stakeholders such as unions, business leaders and civic society and involving these stakeholders from the earliest stage. When consensus could not be reached, the policy was pursued with incremental introduction with levers in place to adapt or reverse their implementation. In this way, the risk and potential for failure was reduced. This consensual style of decision-making also accounts for how the SPÖ has managed to hold on to power for the past seven decades. Yet it was also time intensive and led to long lead times for project implementation across policy sectors, as observed in the case of transport with the parking management scheme.

Since 2010, this form of policy-making has been weakened and now accounts for increased political competition during election campaigns as well as between members of the ruling coalition. The Green Party has been in a position to shape the urban political agenda, especially in the field of transport and to push for more radical initiatives (Buehler, Pucher, 2016). Concomitantly, the number of transport-related controversies have increased together with the level of competition among politicians and experts.

3.3.4 Concluding remarks for institutional and political factors

Over the timespan considered in this report, the political and institutional context has considerably evolved across different levels of government. Similarly, the dismantling of the Fordist welfare state, which drew on consensus-seeking policy-making and strong interventionism from the public sector, gave new opportunities for the private sector and new entrants across policy sectors.

Prior to the 1990s, **the federal level did play a pivotal role in shaping the transport policy agenda** through within-SPÖ politics on the one hand, and the setting of priorities and the allocation of resources on the other. In section four about transport policy developments in Vienna, we will examine the interplay between levels of government in shaping the setting of transport policy priorities.

In a context of post-liberalization reforms across a number of public sectors, **subnational political actors have enjoyed some increased autonomy**. In the case of Vienna, we will examine whether or not transport issues have been less dependent from urban and regional planning objectives and have acquired a logic of their own. We also expect the urban dimension of transport to have been strengthened as a result of the Green Party's efforts to increase the pressure on car use. Whilst the pre-existing form of local clientelism weakened, the number of transport controversies and conflicts is expected to have increased and to offer added opportunities for the general public. All in all, when combined with demographic and socioeconomic factors, **we**

assume there has been some growing differences between districts in the framing of transport policy priorities and during policy implementation.

3.4 Transport planning in Vienna

The Federal structure of Austria and its devolved planning powers make for a complex transport planning system, within which Vienna's effective capabilities have strengthened over the time span considered in this report. The City defines its strategic policy goals for urban and regional transport. The current transport strategy was published one year after the STEP 2025, in 2015, under the name "Thematic concept: Urban Mobility Plan Vienna" (see list of plans provided above). It further specifies the role of transport in achieving the city's overarching spatial and urban planning principles. Since the introduction of the 1994 Transport master plan and the creation of the Wiener Linien in 2001, the search for increased integration between public transport modes has been a driving principle of transport policies in Vienna. As of 2011, the "Green alliance" seeks to foster greater integration between non-motorized transport modes.

3.4.1 The City of Vienna as main transport authority

The City of Vienna acts as the main transport authority for the largest share of the transport network. In practice, several departments contribute to the planning and the organization of transport, they are briefly introduced below. It should be noted that Vienna's administration enjoys a large autonomy within this politico-administrative system. All 57 administrative departments have a basic right to self-organisation. Yet they only have limited competencies with regard to the utilisation of funds for the tasks assigned to them.

- Municipal Department 18 (MA18) – Urban Development/City Planning (Magistratsabteilung 18 Stadtplanung).

MA 18 is responsible for setting out the city's overarching transport policy goals as part of the city's Strategic Municipal Development Plan. It is also responsible for public transport, cycling and walking, and as such, it acts as a link with transport companies in order to set long-term transport policy goals and the allocation of funding, as well as for ensuring compliance. As sole owner of the public transport network, the City of Vienna ensures the overall system's long-term stability in planning and execution of projects. Its main objective is to offer comprehensive connectivity at a low fare price. (Wiener Linien). For an overview of this administration's organizational chart, see Graph 2.

- Municipal Department 28 (MA 28) - Road construction and maintenance (Magistratsabteilung 28 Straßenverwaltung und Straßenbau)

MA 28 is responsible for the planning, construction, maintenance, and general administration of the public road network (roads and traffic areas)

- Municipal Department 46 (MA 46) - Traffic organization and technical traffic matters (Magistratsabteilung 46 Verkehrsorganisation und technische Verkehrsangelegenheiten)

MA 46 is responsible for traffic management and since the late 2000s, it includes an office dedicated to cycling. Following the introduction of STEP 2025, its role extends to mobility management and to all forms of mobility.

- Municipal Department 5 – Financial Management (Magistratsabteilung 5 Finanzwesen)

MA 5 plays a pivotal role in transport planning and policy-making, especially for public transport as it oversees the work achieved by the Wiener Linien, and in the financing of the local public transport services supply.

3.4.2 The constant search for increased coordination

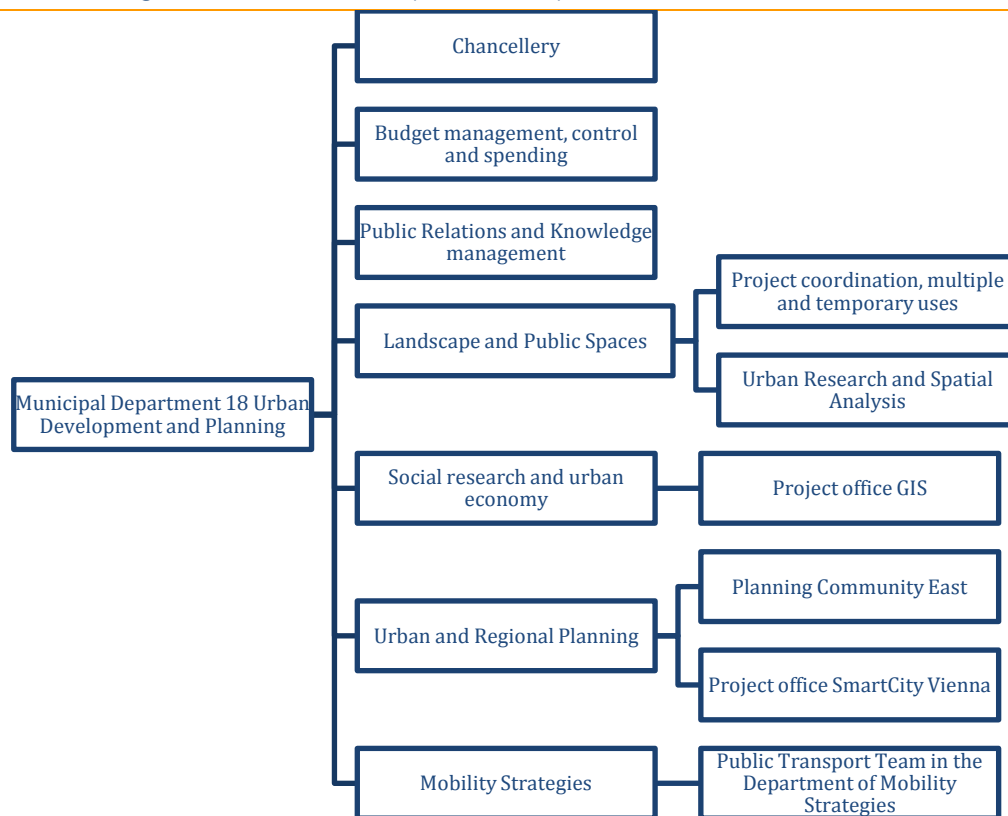
The fact that responsibilities in transport are shared between different departments raises several issues of coordination. In addition to strong administrative autonomy (see above), a second source of fragmentation – horizontal fragmentation - lies in the division of administrative tasks between transport modes at both Federal and subnational levels. A specific person and/or office are responsible for the transport modes that are mentioned in existing master plans. Over the timespan considered in this study, this justified recurring attempts to increase

inter-departmental (and sometimes, within-departmental) coordination. Whilst this task used to be undertaken as part of within-party politics, the growing fragmentation of the political system increased the need to introduce formal coordination mechanisms.

In the case of Vienna, a third source of fragmentation – vertical fragmentation – relates to the organization of funding. Budget is located at district level and subsidized by the city government. There again, weakening forms of political coordination have increased the need to develop new forms of coordination, such as ad hoc commissions for example, or the recourse to citizens through referenda or consultation devices in order to bypass districts' opposition. Moreover, the reform of Vienna's administration (i.e., pensions, number of employees³², etc.) and the reduction of its debt has been a hotly debated topic since the early 1990s.

In this regard, preparatory works for transport plans and concepts have been considered a preferred way to foster coordination within the City administration and with a large variety of stakeholders. *"In Vienna, we have had a number of plans and concepts, and so on. They set goals to be reached 10, 20 years later. It's not so much a matter of being realistic, of course, they often are, but it gives a direction"* (Presentation at CREATE workshop, Paris April 2017).

Graph 2: The Organization of MA 18 (as of 2016)



Source : Stadt Wien (2016d)

In the next paragraphs, Vienna's transport network is briefly introduced together with its overall organization. Each transport mode will then be addressed successively in more detail.

3.5 The Vienna transport network

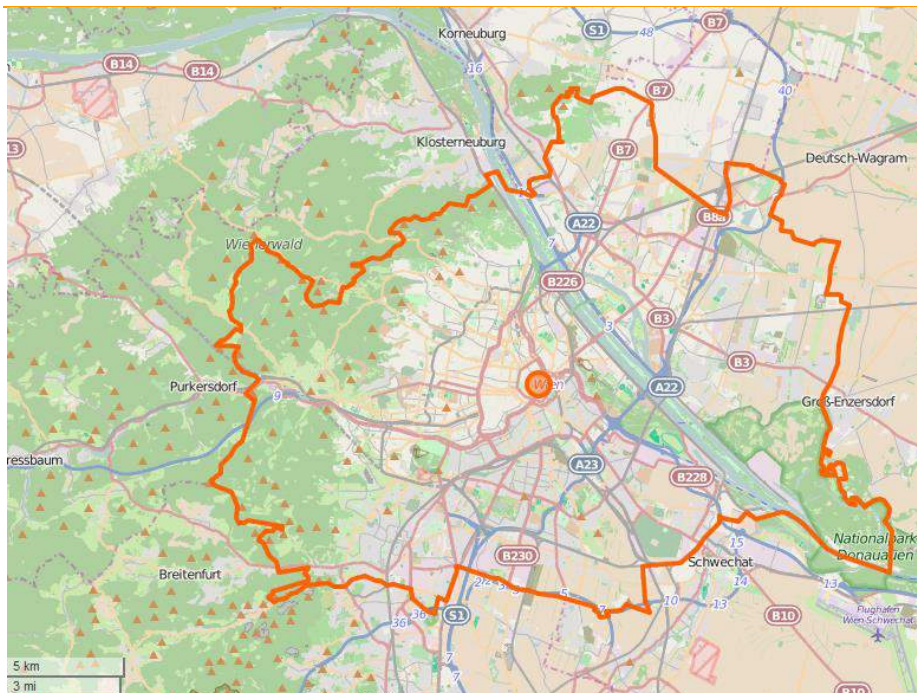
Similar to other large European capital cities, a large share of the Vienna transport network – roads, railways and tram lines in particular – was inherited from the pre WWII period. Both the road and the public transport network have expanded since then. New systems have been developed. Table 1 gives an indication of its current state and forthcoming projects.

³² Estimated at over 65.000 employees

Table 2. The current state of transport networks (as of 2017)

Roads		
	Road network	2,820 km of roads, including: <ul style="list-style-type: none"> - 51 kilometres of motorways (Federal roads) - 222 kilometres of major roads - 2,541 kilometres of minor roads (Municipal)
	Cycle lanes & paths	1298 km
	Motorisation (cars / per 1000 inhabitants)	380
Public transport		
	Railway (regional)	9 suburban lines
	Metro	78,5 km total length, 5 different lines
	Tram	225 km total length, 29 different lines
	Bus	Over 826 km, 115 different routes
Projects (as planned in the 2014 public transport investment plan)		
	Railway (regional)	3 network expansions (east-west axis)
	Metro	Network expansions U1/U2/U5
	Tram	6 line extensions / new projects

Map 4a. Vienna's surface transport network



Source: OpenStreetMap, joint presentation BOKU & City of Vienna, CREATE project September 2016.

3.5.1 The organization of the road network

National Highways plans have been published on a regular basis since 1971, and a clear distinction is made between 3 types of roads, each of them depending on a different planning and management structure:

- National highways (Bundesstrassen)

This includes higher-capacity motorways (Autobahns) and higher-speed highways (Schnellstrassen), which are better fitted with the mountainous topography. The general planning of national highways (Bundesstrassen) in Vienna comes under the responsibility of the federal government, through the Federal Ministry for Transport, Innovation and Technology (BMVIT)³³. Since 1982, they have been built and maintained by

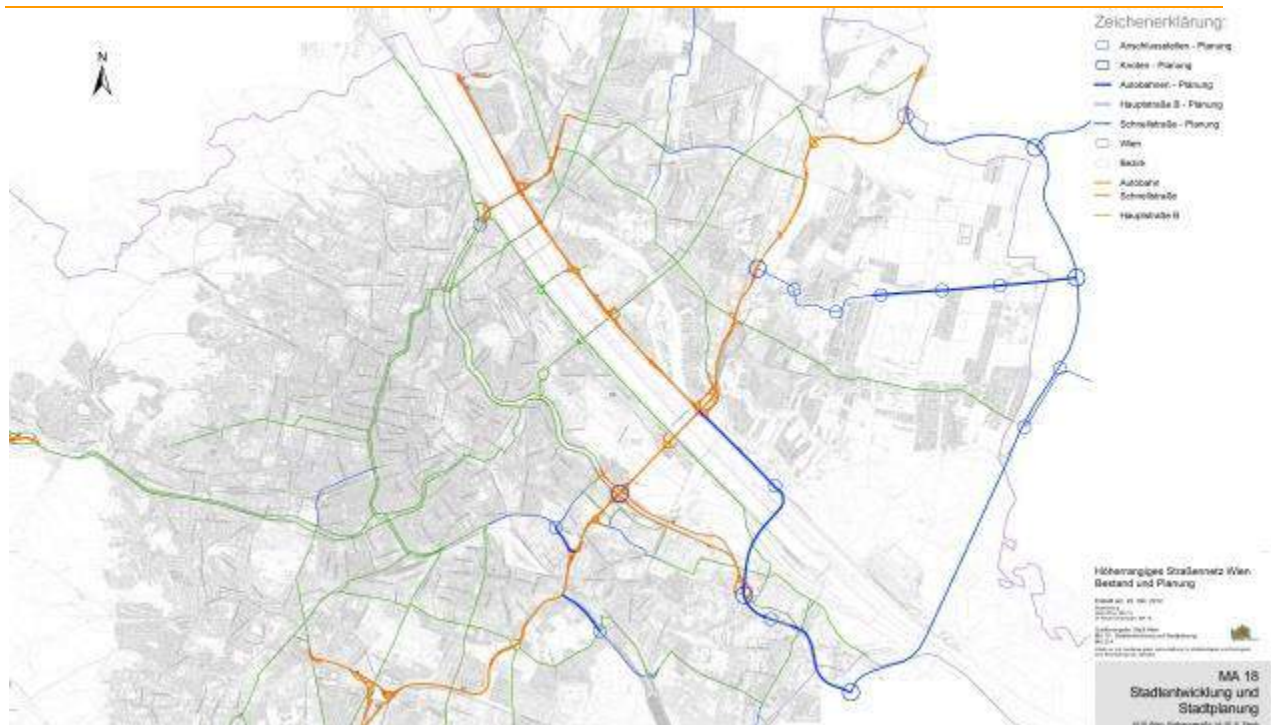
³³ Bundesministerium für Verkehr, Innovation und Technologie

ASFiNAG³⁴, a public-owned corporation in coordination with MA 18 and MA 28, acting on behalf of the Federal Road administration. National highways leave the city in a star-shaped pattern that includes 5 main axes. In addition to the star-shaped highway network, several ring roads were built around the southern and eastern parts of the city. Plans for the national highways network were elaborated in 1971³⁵ and updated on a regular basis since then at the Federal level (National Roads administration in cooperation with City administration). The current plan was adopted in 2002 and regularly updated since³⁶.

- Main roads (Land- or Hauptstrassen)

They fall under the responsibility of provincial authorities, and in Vienna, under MA 18 (planning) and MA 48 (developing). See Map 4b for an overview of current plans for high-level roads (national highways & main) in Vienna.

Map 4b. Main roads network in Vienna, including National highways



Sourc : MA18, Hauptstraßennetz B in Wien inklusive Bundesstraßen A und S – Netzplan. Available at <https://www.wien.gv.at/stadtentwicklung/projekte/verkehrsplanung/strassen/bundesstrassen/> (last consulted January 2018)

- Road network

The largest share of the road network – apart for motorways – is planned and developed under MA 28's responsibility. This includes planning, building, and maintaining road capacity, together with its general administration. It also includes the management of cycling facilities.

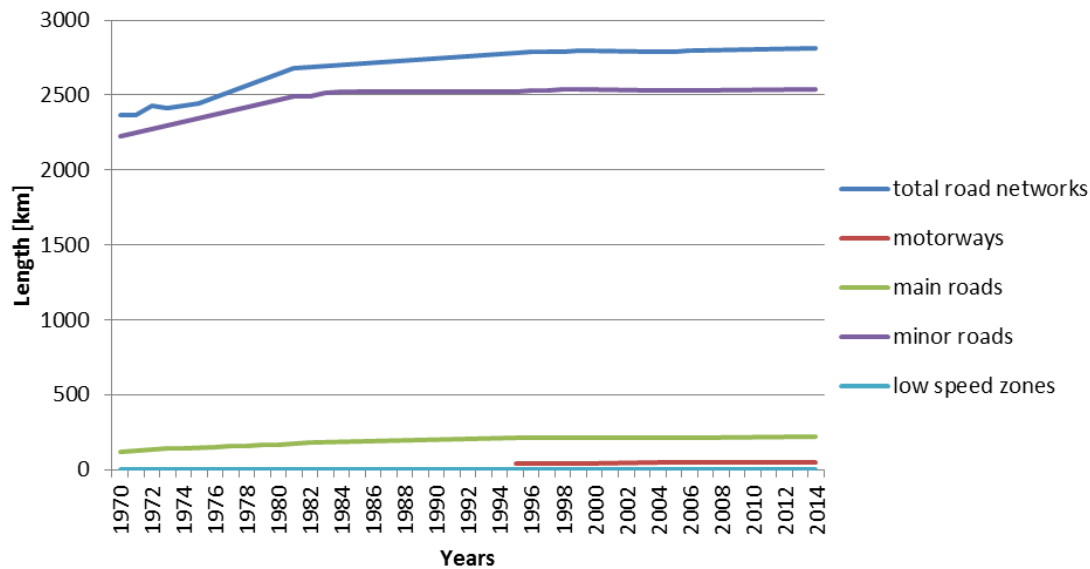
The total length of the road network in Vienna was 2,365 kilometres in the year 1970. Until 1981, the network expanded by 13 per cent, with the total length of major roads being extended by 52 kilometres. Between 1981 and 1995, the total network length grew by 4 per cent and in 2014 the total length of the road network was 2,814 kilometres (see Graph 3).

³⁴ Autobahnen- und Schnellstraßen-Finanzierungs-Aktiengesellschaft

³⁵ Bundesstraßengesetz 1971, formally adopted by the National Council and published in the Bundesgesetzblatt 286/71 on August 5, 1971.

³⁶ Novelle Bundesstraßengesetz 2002, formally adopted by the National Council and published in the Bundesgesetzblatt 50/2002 on March 29, 2002.

Graph 3. City-wide development of length of the road network (not considering the presence of multiple lanes)



Source: Magistrat der Stadt Wien (1970-2014), adapted by and retrieved from Roeder et al, 2016 (D3.2 report).

3.5.2 National and regional Railways

In the case of railways, including the StadtBahn system, the federal government and the transport ministry act as transport authority whereas Austrian federal railways (ÖBB) operate it. Unlike many S-Bahn networks in Germany, the StadtBahn system in Vienna is not a separate rail network. It is integrated with, and part of, the national railway system. It is estimated that ÖBB carries some 25 per cent of Vienna's transport performance through its own railway network within the city's borders. This company's management and service contracts are set at federal level, according to the state's own economic interests. A service contract was signed between the City of Vienna and the ÖBB in order to define their respective obligations.

Additionally, there is a light tram linking the City of Baden with the Viennese city centre (Wiener Lokalbahnen). Both operators are public-owned.

3.5.3 Local public transport

Public transport responsibilities are set at Federal level, as part of a law that regulates local and regional public passenger transport³⁷. Whilst the Federal State is responsible for guaranteeing a basic range of services, the planning of local and regional transport services is under the responsibility of the provinces and local authorities. In the capital-city region, The City of Vienna is responsible for transport planning and the entire urban and regional public transport system, apart from the S-Bahn, has been placed under the responsibility of the Wiener Linien GmbH & Co KG or Wiener Linien since 2001. It is a subsidiary of Wiener Stadtwerke Holding AG, which is owned at 100% by the City of Vienna.

Recent reforms have somewhat contributed to clarify relationships between the city and the Wiener Linien. The organization of public transport is explained in more detail in the following paragraphs.

The city government as main public transport provider until 2001

Following WWII, the city administration and its utilities company, Wiener Stadtwerke, assumed responsibility over the planning and provision of key public services. It was considered a municipal department of the City of Vienna, with each utility organised as owner-operated municipal enterprises. Previously independent public and private transport operators in Vienna were consolidated as one single provider under the banner of the

³⁷ ÖPNRV-Gesetz was regularly updated since its introduction in 1999. The current version was adopted in 2015.

city's utilities, Wiener Stadtwerke-Verkehrsbetriebe. As a subdivision of the Wiener Stadtwerke, it held responsibility for the provision of public transport services.

From the 1960s onwards, public transport professionals and politicians acknowledged the need to invest in the network and associated services in order to maintain and develop a strong non-motorized transport. The first step to move towards a regional approach to transport management in the wider metropolitan area was taken in 1961 with an agreement on fares between the ÖBB and the Viennese transport agency. Subsequent reforms in the tariff structure were introduced at city level, including an integrated tariff structure that included S-Bahn routes. In 1982, time based tickets intended to increase the attractiveness of public transport services were introduced. Their attractiveness resulted from both their price and their width, making it easier to travel across the public transport network. Since then, seasonal and annual tickets were introduced, with approximately every fourth adult in Vienna owning a Wiener Linien annual ticket in 2015 (Stadt Wien, 2016)³⁸.

The reorganization of the city's utilities company in 1999

In 1999, the city's utilities company was reorganized into the Wiener Stadtwerke Holding AG in order to comply with EU regulations on the provision of public services. It became a separate company that was no longer part of the city administration but is wholly owned by the City of Vienna. It operates across public utilities, including public transport. The subdivision for transport, Wiener Stadtwerke-Verkehrsbetriebe, was renamed as Wiener Linien. The City, Wiener Stadtwerke and the Wiener Linien constitute the 3 main stakeholders in planning and developing public transport in Vienna (Kostal et al., 2014, p.20). Relationships between them are bound by a close organisational and economic relationship which is formalised by law.

Wiener Stadtwerke Holding is the parent company and owner of Wiener Linien. As such it can set overarching objectives for its subsidiaries and is responsible for supervising and monitoring their achievements³⁹. Other 100 per cent-owned subsidiaries with a role in public transport also include Wipark, which builds and operates public garages and park-and-ride services, Wiener Lokalbahnen AG, which operates light tram services to the City of Baden (see above) (Wiener Stadtwerke, 2016a).

The **City of Vienna** now acts as contracting authority for transport services in Vienna and exerts, as such, both a direct and indirect oversight over Wiener Linien. It exerts indirect supervision and control over the strategic planning of the enterprise of Wiener Linien through the Wiener Stadtwerke's supervisory board⁴⁰. It appoints Wiener Linien's top managers and provides financing for public transport services. As sole owner of the public transport network, the City of Vienna ensures the overall system's long-term stability in planning and execution of projects. Its main objective is to offer comprehensive connectivity at a low fare price.

Wiener Linien GmbH & Co KG acts as 3rd – and essential – party in this new organizational setting. It is a limited liability corporation, which was formed in 1999 as part of the reorganisation of Wiener Verkehrsbetriebe. It is now a fully owned subsidiary of the Wiener Stadtwerke⁴¹. Following the creation of Wiener Linien, a comprehensive organisational reform was introduced in 2001 in order to ensure output-orientated planning and management, as well as instil a cost-conscious behaviour within the organisation. Since then, Wiener Linien has been tasked by the City with planning and delivering local public transport services. This was formalised in an agreement between the City of Vienna and Wiener Linien, also in 2001 (1st financing agreement, 2001-2016).

Wiener Linien as the city's de facto integrated public transport authority

In practice, the city's tasks are mainly ensured by the Executive City Council and MA 18, headed by Vice-Mayor Vassilikou since 2010. MA18 acts as a link between the policy level and the operator. This

³⁸ See also D3.2 Vienna report and the discussion in Section 4 about the €1-per-day ticket.

³⁹ The managing board of the Wiener Stadtwerke Holding AG has three members in it. One of the members is responsible for the Wiener Linien.

⁴⁰ Of which 4 out of 11 members are nominated by the City Council

⁴¹ All managerial functions are carried out by the three directors and the Supervisory Board consists of six members, 3 of whom are nominated by staff.

administration is responsible for strategic planning functions and determining levels of funding (via the tariff structure).

The current contractual structure means that the strategic policy decisions are made by the City of Vienna⁴². Once the formal decision to develop new routes has been made by MA 18 and the funding is clarified, Wiener Linien takes over the construction and implementation. It deals with the everyday organisation of the transport system, including route planning, service patterns and maintenance (Kostal et al., 2014). Furthermore, it is assumed that the revenue taken in is directly linked to the transport provision offered. In exchange, Wiener Linien provides local public transport and takes on revenue risk. With the exception of some bus services, which are run by the private sector under concessions, the largest share of public transport services in Vienna are provided by Wiener Linien themselves. More precisely, Wiener Linien oversees the following tasks:

- Transport management: timetabling, route planning, coordination and integration across providers, sales and marketing of local public transport across Vienna, operational guidance through control centre and mobile monitoring, development and implementation of quality management
- Operation of the trams, buses and underground railways (metro)

Within this organizational setting, Wiener Linien still enjoys a large degree of autonomy and is very much considered a “state in a state”. For all relevant functions of transport planning and network management, Wiener Linien acts as integrated local public transport authority and operator, under the provisions defined in EU Regulation on public passenger transport services⁴³. It bears the sole responsibility for the quality and quantity of the municipal network. Since the 2001 reform and even more so, since the arrival of the red-green coalition in 2010, relationships between the city and Wiener Linien have been somewhat rationalized and less shaped by the above-mentioned corporatist form of local clientelism.

As of today, it is Austria’s largest local and regional transport operator and the largest employer in the city, with some 8,700 employees. Over the time span considered in this report, a significant reduction of the public transport workforce took place, with some 13,000 employees in the late 1950s down to 8,700 employees since the early 2000s (Kostal et al., 2014, 24). Today, growing differences between employees in terms of labour contracts and social benefits are considered a source of political tension. In 2016, Wiener Linien invested around € 350 million in upgrading public transport infrastructures, of which some € 160 million in metro extensions (Wiener Linien, 2016).

The local public transport network

The current public transport network results from both pre-WWII legacy and developments undertaken since the 1970s. In 1970, the total operating length of the public transport network within the city was 628 kilometres. Wiener Linien now runs the largest transport network in Austria (see Table above), with an aggregated length of almost 900km and a total of nearly 4,500 stops and stations. More than 2,000 vehicles with a total capacity of almost 260,000 passengers run on 126 lines. Each day 2.5 million passengers use the Wiener Linien network of over 1000 kilometres (Wiener Stadtwerke, n.d.)

The public transport network consists of the following systems:

- The City inherited a well-established tram network from the pre-WWII period
- The U-bahn system or metro opened incrementally since 1978
- The Bus network: the largest share of the bus network is operated by Wiener Linien themselves whereas about one third of all seat kilometres and half of all the bus lines are operated by the private sector. These privately-operated services are predominantly on the outskirts of the city.

Vienna also boasts a public transport modal share of 39 per cent, being the most popular travel option over cars (27 per cent), bike (7 per cent) and walking (26 per cent). Substantial line network extensions took place since the 1970s, as well as some investments aimed at separating the tram and the bus networks from road

⁴² See below, about funding arrangements.

⁴³ Regulation (EC) No 1370/2007 of the European Parliament and of the Council of 23 October 2007 on public passenger transport services by rail and by road and repealing Council Regulations (EEC) Nos 1191/69 and 1107/70

traffic: in 1990, this concerned respectively 52 per cent of the tram network and 3 per cent of the bus network, and in 2013, 76 per cent of the tram network and 9 per cent of the bus network.

3.5.4 Cycling and walking

The development of cycling infrastructures took up in the 1980s, starting with a network of 11 kilometres. The network expanded from 1980 onwards, until it amounted to 388 km in 2000, consisting of 22 per cent cycle paths, 51 per cent cycle lanes and 27 per cent cycle routes (Magistratsabteilung 18, 2002). Its development as a transport mode was encouraged since the early 2000s, with the extensive development of the cycling network, which now amounts to a total length of 1,298 kilometres.

The main priority has been the closing of network gaps, still underway as of today. This was achieved by introducing two-way cycling lanes on one-way streets. Furthermore, a CityBike service was introduced in 2003. This public-owned bike rental system aims at increasing the use of cycling among residents, in a context in which only 58 per cent of households owned at least one bicycle in 2003 (or 591 bicycles per 1,000 inhabitants). A total of 1500 bikes are available at 150 terminals located throughout the city. A specific set of traffic rules was introduced for cyclists (Strassenverkehrsordnung, StVO) under the responsibility of the Cycling infrastructures Office (Projektkoordinator für Radfahrinfrastruktur), within MA 46, and since 2011, the Mobility Agency was set up in order to encourage and support the development of cycling and walking.

Nevertheless, the use of cycling in mandatory trips remains low and mainly devoted to leisure trips (Interview Mobility Agency, February 2016). In 2010, 61 per cent of households owned at least one bicycle (or 627 per 1000 inhabitants)⁴⁴. As part of its current transport strategy, the city seeks to increase the attractiveness of cycling by:

- Optimising cycling facilities and infrastructures through new technologies: Establishing cycling corridors and green wave systems; a smartphone application, called "BikeWave", in order to help cyclists adjust their speed to the current light signal cycle to minimize waiting at traffic lights and actively generate an individual green-wave (Schönauer, 2015).
- Enlarge the cycling network
- Increase comfort through investments on road space: cycling lanes on one-way streets, at bus stops, bike parking facilities
- Develop long-distance routes

As of 2012, the City's Mobility agency also seeks to highlight the role of walking and encourage its development⁴⁵. This will be further addressed in Section 4.

3.5.5 Regional cooperation in public transport planning and services

The "Verkehrsverbund Ost Region" (VOR) is responsible for planning public transport services in the Vienna region. As of today, it covers an area of 23.563 km², 3.7 million inhabitants and 745 municipalities. It is jointly owned by three provinces: Vienna, Lower Austria and Burgenland. In its current form (2002, see maps 5a and 5b), the VOR results from a long history of cooperation at regional level and counts as one of the most institutionalized form of regional cooperation that reaches far beyond the metropolitan area.

Drawing on developments underway in German and Swiss cities in the 1970s⁴⁶, a formalized cooperation platform was created in 1974 under the name Verkehrsverbundorganisationsgesellschaft m.b.H (VVO). Yet it took another decade, until 1984, for the regional transport association VOR to start operating with the support of ÖBB who selected the capital-city area as a preferred location for experimenting with a region wide integrated approach to transport services. A first agreement was reached with transport companies in the

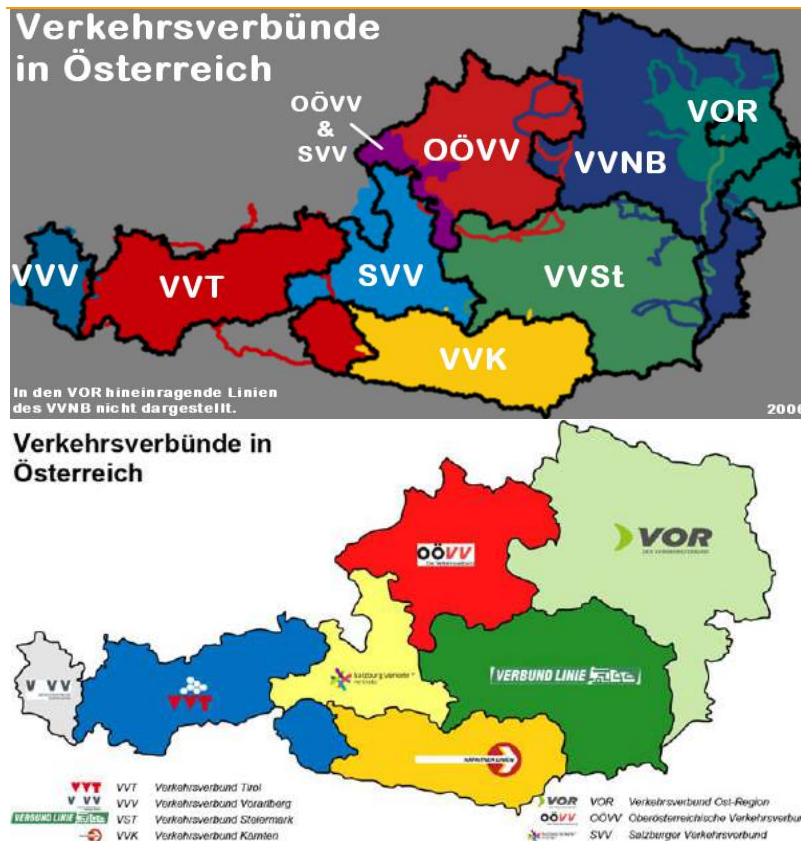
⁴⁴ See the latest annual report of the Mobility Agency (2017), also available here : https://www.mobilitaetsagentur.at/wp-content/uploads/2017/04/MOBAG_Jahresbericht_2016_RZscreen.pdf (last consulted April 2018).

⁴⁵ See the latest walking report by the Mobility Agency (2015), https://www.wienzukunft.at/wp-content/uploads/sites/3/2016/09/2015_Wien-zu-Fu%C3%9F-Report_Vienna-Walking_WEB.pdf (last consulted April 2018).

⁴⁶ See D4.2 Berlin report. See also Buehler et al., 2017 for a comparative overview with Berlin, Hamburg, Munich and Zurich.

province of Lower Austria and sought to integrate rail and U-Bahn services at first, whereas bus routes were included in the integrated fare structure in 1987.

Maps 5a & 5b. Integrated transport authorities in Austria before and after the transport associations' reform in 2002



Source : BMVIT, ©Wikimedia

In 2002, it was agreed as part of the federal led reform of regional transport associations that VOR would merge with the adjacent Verkehrsverbund Niederösterreich Burgenland (VVNB) in order to include a larger share of Vienna's functional urban region (Bundesministerium für Verkehr, Innovation und Technologie, 2016). Both transport associations jointly committed to coordinate fares, ticketing systems, routes, timetables and interchanges with the intent of providing the user with a seamless a journey. This regional organization coordinates the work achieved by 40 transport companies across some 900 public transport routes, including railways and bus lines and now logs over 1 billion passenger journeys a year. The Wiener Linien's network constitutes the backbone of the VOR's transport system and carries 90 per cent of the trips made on the VOR network. Its main goals are defined as follows: "VOR's objectives are to offer comprehensive, integrated, multimodal mobility by working with the various transport operators and political actors involved in delivering that. Beyond this, the VOR sees itself as playing a key role in shifting towards more and efficient, environmentally sustainable travel." (VOR, 2016).

Over time, it contributed to simplifying and integrating the fare structure across the network. A reform in the tariff structure was introduced in 2016 for the first time since 1984. More precisely, passengers now pay for a multimodal fare from their start point to their destination, which is calculated based on a combination of the route, distance and jurisdictional boundary (Ibid.)

3.6 Transport funding

The federal government and the City of Vienna jointly contribute to transport funding, both in terms of capacity investments and services. The City of Vienna ensures the largest part of transport funding in Vienna.

The Federal government contributes to the funding of the national transport system through its car and fuel tax systems. It oversees the funding of all transport networks, which are under its responsibility, either through its own budget or through its agencies and public-owned companies (ÖBB, ASFINAG, etc.). It also

contributes to the funding of transport capacity investment in Vienna within the framework of the Austrian Fiscal Equalisation Law⁴⁷ and to small-scale transport investments, programmes and projects in Vienna as in other Austrian cities. It should be noted, however, that the funding structure at Federal level tends to underestimate the specificity of transport congestion and pollution in urban areas (OECD, 2003).

A more detailed overview is given here for public transport. The role of the private sector is marginal.

Public transport financing

Until 2001, cross-utility financing allowed for electricity and gas rates to cover for the local public transportation system. Wiener Linien, and its predecessor Wiener Stadtwerke – Verkehrsbetriebe, ran an operating deficit. Despite being cross subsidised from the Wiener Stadtwerke family, external financial resources had to cover investment. As a result, debt levels for the Wiener Linien had been rising (OECD, 2003). It did not achieve full cost recovery from fare revenues. In the late 1990s, the cost recovery ratio was around 50 per cent (Kostal et al., 2012).

Following EU regulation on public services, cross subsidies have been strictly limited and the funding of urban transport is now organized as part of a financing contract between the City and Wiener Linien (*Finanzierungsvertrag*). Financial compensation is granted to Wiener Linien for public service obligation fulfilments as defined by the City of Vienna, such as running the service at a given quality level, service frequency or route plan. Unlike other cities in WP4, where local public transport contracts are defined on a short-term period – 4 to 5 years – in order to allow for regular negotiations to take place and adjustments to be introduced, the choice was made to prefer 15 years long contracts.

The first financing contract between Wiener Linien and the City of Vienna was signed in 2001 for the 2001-2016 period. It stipulated that the provision of local public transport services had been delegated to Wiener Linien, together with relevant financing arrangement with respect to capacity development and operation. More precisely, the 3 following strategic goals were set for the 2001-2016 contracting period:

- Increasing the modal share for public transport
- Increasing cost-effectiveness
- Guaranteeing the provision of high-quality services

The “funding formula” stipulates that some 60 per cent of Wiener Linien's costs are generated by the company itself, with further financing provided by the City of Vienna. The public transport system remains heavily subsidized in order to ensure the lowest possible prices. The supply and service quality are on a very high level, which reflects on ridership and public transport modal share. Subsidies for operation or reduced tariffs (e.g. students) are financed either by the responsible Federal ministry or the City of Vienna.

More precisely, Wiener Linien has two income streams:

- Transport revenues, which include compensation from the City of Vienna and the Federal state⁴⁸ motivated by distributional goals and social policies. This includes support to school and further education students.
- Subsidies from the City of Vienna

Over this time period, the City of Vienna grants Wiener Linien a negotiated lump sum (e.g., €256m in 2012), to cover the shortfall between operating costs and revenue intake (Kostal et al., 2012). Operational subsidies from the city have remained constant – some 29 per cent -, but fare revenues have been rising since 2001 and added up to about 60 per cent of the total revenue in 2016. Furthermore, even though the operating budget has stayed constant, investment subsidies for capital projects like the underground expansion have been rising. Half of the costs of all new underground railway developments are covered with Federal subsidies, and in 2016, the total amount spent for investments amounted to some €320 million.

⁴⁷ The latest reform was adopted in 2008. For an overview, see OECD (2012)

⁴⁸ This is mainly achieved through the two following conduits: Family Burdens Equalisation Fund and Fiscal Equalisation Law.

The changes brought onto the public transport network during the first contractual period (2001-2016) (see below) have been assessed as follow (Wiener Linien, 2016):

- The Metro network grew by 18 kilometers (expansion U1 and U2)
 - Night services were introduced on the metro and the service was reorganized on the bus network
 - 2 additional tram routes, rehabilitated stations and routes
- The number of annual season tickets sold more than doubled to more than 650,000, with passenger numbers up more than 25 percent to €931 million. The share of public transport in the modal split has increased since 1993 from 29 percent to 39 percent

Details about the next contracting period (2017-2030) were made public in 2015. It follows the same “funding formula” than during the previous contracting period. Main differences are linked with increased quality criteria, regarding punctuality, cleanliness, customer satisfaction, safety and accessibility.

3.7 Concluding remarks, main drivers for policy change in Vienna

When considering the potential drivers of transport policy change over the time span considered in this report, macro factors such as demographic and socio-economic changes have influenced transport priority settings as well as the selection of policy solutions. Yet the Vienna case is also characterized by high levels of institutional, political and organizational stability. Nevertheless, some turning points – or so-called “focusing events”⁴⁹ - have been highlighted in this section:

- Organizational changes, related to the public transport reform in 2001
- Political changes, related to the need for the social-democratic party to enter coalition governments, especially with the Green Party since 2010
- The EU enlargement, in 1995 and in 2004, might have opened additional sources of constraints, related to the *acquis communautaire* on the one hand, and on the other hand, new opportunities for developing and funding transport infrastructures and policies for goods and passengers in order to address increased cross-border relationships with neighboring member states.

Furthermore, some potential sources of political, organizational and institutional competition have been highlighted in relationship with:

- A potential overlap between administrative departments during transport policy-making and implementation, and the need for coordination mechanisms within the city administration and between politicians and bureaucrats in order to streamline strategic transport policy goals across modes.
- An inter-institutional coordination between levels of government – Federal, City, Districts – in order to ensure the provision of policy resources, including funding, regulations (safety, etc.), and some level of vertical coordination in transport policy priorities at implementation stage.
- The evolving relationships between the City of Vienna and Wiener Linien. We can assume that workers’ unions and within-SPÖ politics played a critical role in ensuring coordination between the setting of transport policy priorities and their operationalization until 2001. We expect this influence to have weakened as a result of the reorganization of the public sector, the liberalization agenda at Federal level, and the changed political context in Vienna.

⁴⁹ Following the work done in policy studies, focusing events can be understood as sudden, rare, and harmful events, which can influence the policy process (Birkland, 1998).

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

This section examines the concrete way through which specific combinations of drivers of change have shaped transport policy developments in Vienna. This is done by analysing the historical development of policy objectives, resources and measures since 1968. The main argument relates to the critical role played by evolving relationships between pro-public transport and pro-car coalitions in shaping transport policy developments in Vienna. This relationship is shaped by a combination of macro-dynamics (Oil crisis, demographics), external pressures (Federal and EU legislations, environmental mobilizations) and evolving forms of urban governance in Vienna (political competition, influence-seeking strategies).

Four sequences are introduced successively: First, the emergence of the car-oriented city model and its rapid diffusion in the context of the post-WWII reconstruction (stage 1); Second, the development of a traffic mitigation policy agenda at both the federal and the local levels, which resulted in a renewed interest for public transport (metro project) and urban design initiatives in the historic centre (stage 2); Third, a new consensus is reached between pro-car and pro-public transport advocates in 1991 aimed at restricting car use through parking management while at the same time supporting the development of added capacity in public transport. In the fourth section, recent attempts at developing a “green alliance” and reducing car use are discussed in more detail, together with future challenges in a changed political and regional context.

Overall, the analysis of transport policy developments in Vienna demonstrates, on the one hand, the shift towards the “Planning for people” types of policies (stage 2) and as of recent, the “Planning for city life” (stage 3) policies, and confirms on the other hand, that this process is neither categorical nor is it evenly spread.

4.1 The car-oriented city model: slow emergence (pre-WWII) and rapid development (1945-1968)

Most of Vienna's current characteristics in urban planning and transport result from the choices that were made during the second half of the 19th Century. It was, at that time, the affluent capital of the Austro-Hungarian Empire and experiencing significant demographic and economic growth. During those years, the city extended its administrative borders through the incorporation of outer districts, and successive urban development goals recognized the need to protect the city's green belt. How the city developed then is important because the legacy transport infrastructure that forms the backbone of today's transport system shaped the city's development during subsequent decades together with the aesthetics and the built environment (Interview transport expert 1, March 2016). Furthermore, whilst car-oriented planning became dominant, politicians and planners maintained a strict differentiation between developments in the urban core, meant to preserve this heritage of national significance, and developments in the rest of the city, where the dream of a modern city justified the rapid development of car use.

4.1.1 The triumph of municipal socialism (pre-1938 period)

Vienna reached its height between 1880 and 1890. By then, the number of inhabitants increased from 726,000 to 1,365,000. In 1910, it reached 2,031,000 inhabitants in 1910. Following the 1848 revolution and the transfer of landlords' administrative and judicial rights to government institutions, namely the City Council, large-scale urban developments were introduced in order to transform Vienna into a large, modern metropolis. This includes the first city's expansion by incorporation of the suburban zone: the Ringstrasse was built alongside the former the fortifications, marking a clear distinction (also known as the “Gürtel”) between the inner city and the outer suburbs, and the city districts were created. Rapid urban and economic growth justified the incorporation of new areas located south and north from the Danube, including those districts such as Floridsdorf where machine-manufacturing industries were located. Major social differences within the city were particularly exacerbated during this period, with higher income families concentrating in parts of the inner-city districts (e.g., Wieden, Josefstadt) and some of the outer suburbs. Recurring attempts to destroy the “Wienerwald”, a large area of wooded hills in the north-eastern part of the city and a favourite recreation area among the Viennese population, were abandoned due to the population's protest.

Developing urban infrastructures and networks

The preparation of large international events, such as the 1873 world exhibition, accelerated the development of utilities networks and services through private funding until the late 1890s. **The municipalisation of urban infrastructures and networks, in the 1890s, offered an opportunity for extending them citywide.** Revenues from energy and transport services allowed development of a large number of public policies and infrastructure projects, including roads, streets and public transport. Following Otto Wagner's 1890 urban development plan, the urban and regional transport system was particularly influential in structuring urbanization dynamics through its three main components. Moreover, the city's stronghold over the development of public transport networks and services considerably increased after 1902, when the transport network and entire rolling stock was bought from privately-owned transport companies prior to establishing the City of Vienna-City Tramways⁵⁰. Bus services were incorporated after 1922.

First, an extensive and comprehensive tram network - operated at first by horse carriages and then electrified - was built alongside the former fortifications, in order to address local transport demand. This high quality public transport encouraged the development of a compact city around it, especially in the urban core. Furthermore, the origins of the idea to physically separate the tram network from the street network at busy intersections can be traced back to 1885. One of our interviewee mentioned the following driver for change: *"In part this was a competitive streak to keep up with other European capital cities who were building underground rail and elevated rail"* (Interview transport expert 1, April 2016, TbNB⁵¹). Second, a rail-based metropolitan system (Stadtbahn) that ensured the connexion to the suburbs. It followed a star-shaped system with 5 main branches, connecting each line to one of the city's five termini. Around the turn of the century, a connecting railway that, like the case in London, sought to connect the different rail termini was planned and the tram network was electrified. Even though its main purpose was military, it was also considered a first attempt to create a higher-level public transport network for the city. According to original plans, the Stadtbahn system should have been much larger, including cross-city connexions, but these plans were abandoned due to financial constraints. Nevertheless, it influenced the urban structure in terms of the overall distribution of workplaces and industries that heavily depended upon this transport system. Third, the city was connected to long-distance transport through five large railway stations.

This extended public transport network together with rapid population and urban growth encouraged patronage growth as well as mobility demand. Until WWI, the tram network set the border of Vienna, which developed as a compact city with extensions around major transport axes.

Red Vienna and the emergence of a strong urban governance model

The fall of the empire and the creation of the Republic of Austria had a considerable impact on the city's status, and from then on, it was considered too large a metropolis for a much smaller country. Furthermore, the interwar period was marked by economic stagnation and population decrease. Several factors contributed to strengthening Vienna's specific status within the Austrian political, institutional and transport system. First, Vienna and Lower Austria became two separate provinces and due to the federal system local transport planning was split between the provinces, except for national roads and the main railways. In this context, the city benefited from increased autonomy in urban planning and policy-making. Second, the separation between both provinces also accelerated the election of a social-democratic majority – by contrast to majority in place in Lower Austria – and the strengthening of a municipal-led welfare state model that became known as "Red Vienna", that is a corporatist form of clientelism in which the provision of municipally-owned social housing and public services was traded for political support (Novy, 2002, 136). In this context, the city was strategically used by the ruling party as a showcase for the social-democratic project worldwide, including a strong welfare state and a large number of policies and services (e.g., housing, social policies, etc.).

During this period, **what remained of private initiative and funding in the provision of services, utilities and policies was municipalised.** Large-scale urban regeneration programmes were developed in the old, historic districts and low-density urbanization was encouraged in outer suburbs in order to increase the quality of housing and ensure greater access to recreation areas. The Stadtbahn network was transferred to the

⁵⁰ Stadt Wien-Städtische Straßenbahnen

⁵¹ TbNB stands for Translated by Nicole Badstuber.

city's jurisdiction (1924) and transformed into a public transport network. Its electrification (1925) and inclusion in the urban tramway fare structure were instrumental in making the service more attractive. In this context, city planning in Vienna very much remained orientated around public transport and private car ownership did not grow as rapidly as it did in other Western European cities.

4.1.2 Emergence and diffusion of the car-oriented city model (post 1938)

The car-oriented city model only became dominant after 1945, but its premises can be traced back to the pre-war period. Motorized transportation became more popular and visible in the city during the pre-WWII period, as more and more roads were properly paved. The car-oriented city model received additional support from the mid-1930s onwards, from those opposing the social-democratic party and investments in road infrastructures were encouraged as part of the national government's strategy to reduce unemployment and poverty. This pro-road policy was continued during the Nazi occupation for strategic reasons, and motorized mobility was also encouraged through the obligation to provide parking lots, if new buildings were constructed. Furthermore, during Nazi occupation, Vienna was amalgamated with surrounding districts, covering an area nearly five times greater than before 1938 – from 27,805 to 121,541 hectares – and including almost all of Lower Austria. Bus services were extended and car ownership was encouraged.

Reinventing the “modern city” in the post WWII era

During the immediate post WWII era, the primary goal of the city government was to rebuild the city, repair utilities and transport networks, and use vacant plots to rebuild the city. A large proportion of the city's housing stock and infrastructure had been destroyed. Reconstruction was delayed due to a number of constraining factors, also accounting for a slower uptake in car use than in other Western European and Northern American cities. First re-urbanization was quite slow and from the 1960s onward, suburbanization took up while population declined within the city's borders⁵². Furthermore, the economic development of the city was inhibited until 1955 because of the Soviet occupation and the uncertainty of Austria's status. Second, in the absence of an agreement on the city's precise border, the development of a coherent land use plan at city-level was stalled. Following the City's restoration into its pre-1938 borders, a decade-long process of negotiations with Lower Austria and those towns and areas located close to the capital started until the matter was effectively settled, and no progress could be made on implementing any of the dispositions enclosed in the Land use plan (Pirhofer & Stimmer, 2007).

The social-democratic party retook political leadership over the city in 1945 and kept it from then on. Drawing on pre-Nazi occupation priorities, urban planning was considered a symbol of regained independence and democracy as well as pressing necessity. Debates about urban planning highlighted the emergence of a new understanding of what was considered a “modern city”. The combination of war destruction was not to the extent it had been in German cities, and the concerted effort made in the post war year to recreate the historic city meant that Vienna still relied on a pre-war compact urban foot print and legacy transport infrastructure routes. Yet the goal of a modern city increasingly clashed with the urban structure created in the 19th century and with efforts to preserve the historical city scape and architecture. In this context, reconstructing the city offered an opportunity to make the vision of a modern – meaning functional, less dense – European capital come true, including developing an up-to-date housing stock and making increased space available for car traffic flows. The repair and reconstruction of damaged structures took place alongside the demolition and construction of new ones. These contradictions are visible in post-war urban and transport planning documents.

Making the “modern city” come true: housing and transport

In those years, housing was considered the top priority and very much at the centre of the first post WWII land use and urban development plan⁵³. Drawing on existing legislation, this document, entitled “8-point programme for social city building”, sought to ensure strong public leadership over land use and housing development. It was formally adopted in 1952 as the city's urban development plan and highlighted the two

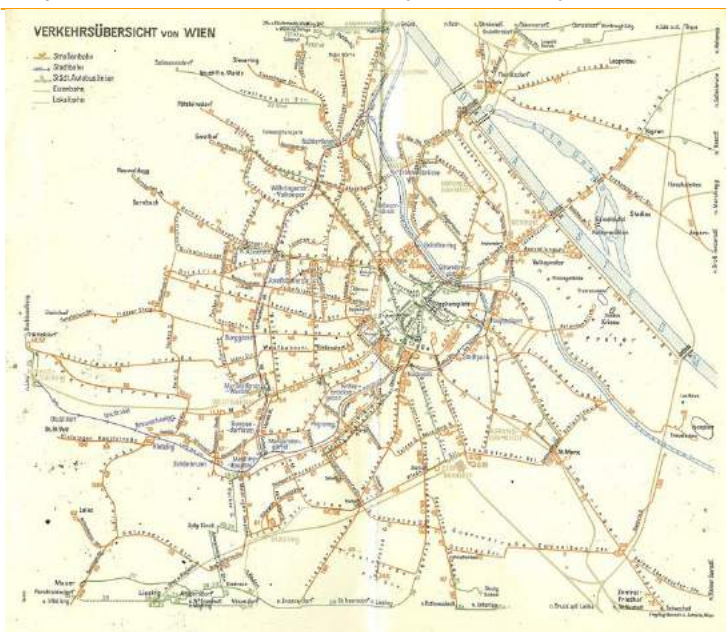
⁵² See Section 3

⁵³ Developed between 1948 and 1951 in relationship with the city planning department.

following priorities: all flats had to be equipped with a bathroom and the minimum size requirement⁵⁴. In order to do so, the plan suggested reducing residential density in the inner-city and developing new urban areas between 30 to 60.000 inhabitants in outer districts. Drawing on the pre-WWII urban growth model, the largest share of housing developments was undertaken by the city itself or through housing corporations in order to encourage private ownership. New urban residential settlements offered a vision of modern, lower density living (Pirhofer and Stimmer, 2007)⁵⁵.

The setting of new urban development priorities also had some implications for transport. At first, with the largest share of resources being allocated to reconstructing pre-war networks, little room for manoeuvre was left for implementing new ideas. Railway networks were reconstructed with the support of the federal government. Furthermore, local authorities encouraged the selective reconstruction of the pre-war transport network. By 1949, the war damage to the transport infrastructure bar one route had been repaired. Many segments and stations of the Stadtbahn network were not reconstructed due to financial constraints and to the city government's lack of autonomy⁵⁶. Utility companies (Gas, electricity, and transport) were consolidated as part of one single utility company, the Wiener Stadtwerke. **Nevertheless, the development of car-based city planning very much dominated urban discourses.** Local politicians, particularly within the SPÖ, associated the use of cycling, and to a lesser extent, that of public transport, as a transport mode with poverty and pre-modern city life⁵⁷. The expansion of the road network became the pillars of the city's master plan. A considerable share of public space was to be allocated to motorized transport, including the development of elevated highways without junctions (Hachleitner et al., 2013, 131). Yet, the plan's formal adoption was adjourned until the country recovered its autonomy in 1955 and was granted some financing support for reconstruction under the Marshall Plan. Furthermore, city-led population resettlement outside the inner-city area and the priority given to motorized transport met with some socio-political resistance at first.

Map 6a. Overview of Vienna's public transport network in 1953



Source : <http://www.deacedemic.de>

⁵⁴ In 1952, 15.5 per cent of the budget was spent on building new homes, and in the next two decades, thousands of flats were built every year according to these principles (see section 3).

⁵⁵ Opportunity areas were designated north of the Danube as well as in South Vienna along the Lager Berg in District 10. New buildings of significance were planned outside the inner-ring road, such as a conference centre for sports and culture in the 15th district.

⁵⁶ By 1951 the new Westbahnhof opened with the Südbahnhof following in 1953.

⁵⁷ Alongside public transport, cycling was commonly used as a transport mean in Vienna, mainly for short distance trips.

As Vienna entered a period of economic growth and prosperity, post-war thinking gained additional support and pro-car policies were introduced at full speed as part of the city's efforts to rebalance urbanization trends and transform the urban layout inherited from the 19th century. Together, these developments accelerated the shift away from the 19th century compact city model towards a more dispersed urban form with lower density levels and which development was facilitated by private motorization.

4.1.3 Car-based mobility: overview of major transport policies (1954-1979)

The principles laid out for city planning in 1952 and the search for lower densities shaped transport policy developments until the late 1970s. Successive generations of social-democrat leaders, technicians and policy-makers, pursued a strategy aimed at reducing pressure on the inner-city while at the same time containing low density urban development in the outer districts. Successive policy documents, including the 1961 zoning plan, confirmed the distinction made between the need to preserve the historic city centre and that of building the modern city. This was achieved by favouring polycentrism and strengthening new urban centres.

Rising travel demand and urban expansion

Transport policy solutions were discussed in a context of rising travel demand and urban expansion. At the time, Vienna was struggling to cope with the 140,000 cars already on the street and road network. By then, the effects of growing car traffic were noticeable, especially in terms of safety issues, and encouraged the development of added capacity and investment in order to accommodate car use. Within the city administration, the expectation was that car ownership and usage levels were set to increase, and the authorities thus planned for a vision of full motorisation with an anticipated 300,000 to 400,000 cars on Vienna's streets by 1975. A different approach was applied for road building. In a context of low demographic and economic growth, no inner-city demolitions were needed for road building and already existing large boulevards were rapidly transformed in order to accommodate traffic flows. The transport network in the densely populated inner core did not change much in comparison with the network inherited from the second half of the 19th century. Yet accommodating larger flows of car traffic also led to segregating road space uses from other transport modes. Moreover, the largest share of road building took place at the city fringes and in the wider metropolitan region. Car registration numbers exploded from 22.000 to just fewer than 400.000. **The automobile was now considered a dominant mode of transport and a symbol for overcoming the disaster of war times.** Pre-war policies were re-enacted in order to support the development of car use, including the priority given to the construction of roads and the development of parking places. An arterial road system including inner-city motorways was developed, with the first section of the inner-city motorway opened in 1970 (*Südosttangente*). This approach was consistent with transport policy priorities and existing plans at Federal level, as laid out in the proposed plan for Federal motorways published in 1971⁵⁸.

By contrast, the dominant role of the automobile proved detrimental to cycling, which was not of great importance to the city government and successive city planning documents until the 1980s⁵⁹. Cycle ownership and use was only encouraged as part of leisure activities and sports. This also applies to a lesser extent to public transport. As per an interviewee: *"The opinion was that public transport was a thing of the past and would be retired in due course"* (Interview transport expert 2, February 2016). As the urban public transport system was not able to meet this demand due to ageing rolling stock and infrastructure, many passengers chose to use the private car to meet their transport needs. Patronage numbers dropped in particular for commuting in Vienna's rapidly urbanizing suburbs on both sides of the city's borders.

Continued competition from alternative transport modes

In the absence of a coherent transport policy approach, the 1952 Urban Development plan gave sufficient room for manoeuvre to both pro-car and pro-public advocates to shape future policy initiatives. In practice, the largest share of resources and finances were devoted to road investments. Nevertheless, **the prevalence given to car-oriented policies (stage 1) did not lead to the complete dismantling of other**

⁵⁸ Formally adopted in Bundesgesetzblatt 286/71

⁵⁹ See also D3.2 Vienna report, p.24.

transport policy types. This first applied to the inner city, where some restrictions to car use were introduced in order to preserve its historic legacy: short-term parking zones were introduced in the 1st district in 1959, and progressively extended to other districts in stages. At that time, parking zones were limited to individual street segments and smaller areas (Magistrat der Stadt Wien, 2016b), according to levels of residents' complaints (Interviews transport experts 1 and 2, March 2016). Furthermore, following a trend observable at Federal level, traffic mitigation policies were increasingly framed in relationship to safety issues. Pedestrian crossings were installed but other ideas under discussion at this time, such as traffic speed reduction and giving priority to public transport that is, buses over cars in the inner centre, were not implemented. Similarly, as part of its strategy to strengthen public transport and ease access between public transport networks, the national rail company ÖBB actively reached an agreement on fares with the Viennese transport agency in 1961.

In other words, alternative transport modes were accommodated insofar as they were compatible with the rapid development of mass-transit. Little attempt was made to strengthen the urban dimension of public transport. Insufficient financing measures and subsidies led to the steady reduction in service provision, network coverage and service frequency, which triggered a vicious cycle of reduced public transport provision and increased popularity of the private car (Interview Transport expert 2, February 2016). Large segments of the tramway system were dismantled in order to allow sufficient road space for car traffic. Some tram routes were replaced with bus services, and in the case of other tram routes, it was suggested to transfer tram routes below the ground in order to allow car traffic to flow. Throughout this sequence, the idea of developing a metro system was regularly pushed on the urban political agenda by the Conservative Party, but systematically dismissed by the ruling majority as utopian⁶⁰.

Map 7. Overview of proposed Federal motorway network for Vienna in 1971



Source: MA 18, MA 48, Freytag & Berndt, available at: <https://www.wien.gv.at/stadtentwicklung/projekte/verkehrsplanung/strassen/bundesstrassen/bundesstrassen-1971.html> (last consulted, January 2018)

At the same time, the tram network was never completely dismantled. The resistance of residents and politicians prevented such a radical change taking place. Within the SPÖ itself, transport remained a hotly debated topic between pro-car and pro-public transport advocates. As explained during an interview with an expert: *“Given the SPÖ’s undisputed hegemony, one would expect a continuity in the political direction but that was not the case. The quarrel was played out within the party – which put on its own show in which the opposing*

⁶⁰ Proposals for a metro in Vienna can be traced back to the late 19th century. Concrete plans for a metro were articulated in 1910 but as WWI broke out, the project could not be financed.

transport ideologies played out. The push for creating a car-centric city was mellowed by the fact that much was still done for the public transport network” (Interview transport planning expert 1, March 2016, TbNB).

4.1.4 Concluding remarks, Stage 1

The diffusion of the car-oriented city model and that of the automobile emerged during the 1920s. In the post WWII context, it expanded as a result of both national and local policies. Some of the choices that were made during this first sequence have, since then, become a characteristic of Viennese transport policies. First, differentiated approaches were used in the urban core, where the historic legacy was meant to be preserved for patrimonial reasons, and in the rest of the city, where post-war reconstructions and urban growth agenda encouraged new residential and housing developments. Second, even though car-oriented policies emerged as the backbone of the city's post-war transport network, this didn't prevent the reconstruction of public transport networks with the support of the Federal state and in the context of cross-utility financing.

4.2 The art of non-decision: overground versus underground transport (1968-1991)

Under the joint pressure of macro-economic dynamics and federal legislation, transport policy priorities shifted away from a car-dominant approach towards a more integrated approach that offered some room for manoeuvre for developing public transport initiatives. This process was incremental and not without contradictions. It was mainly driven by shifting federal transport policy priorities and some concerns at city level due to increasing daily commuting traffic from adjacent municipalities. Throughout this transition period, car traffic growth in the city remained limited due to the city's isolated location a few kilometres away from the Iron curtain. Even though Vienna continued shrinking down to 1.5 million residents, public transport advocates at city level found new opportunities for pushing forward non-motorized transport solutions and renegotiating a status quo with pro-car advocates that was to last until the early 1990s.

4.2.1 The shift towards traffic mitigation at Federal level

Transport policy developments in Vienna did not take place in vacuum. During this second sequence, two major sources of external pressure account for increased concerns, at the local level, for car traffic mitigation (Stage 2 policies) and heated debates among politicians and practitioners.

In the context of the post oil crisis period, transport issues were increasingly addressed in relationship with the limited nature of fossil fuels, and towards the end of the period, with environmental issues such as noise and air pollution. Moreover, and even though the general consensus across political elites favoured car-based solutions, transport was instrumental in the political competition between the SPÖ and the ÖPV across levels of government. During this second sequence, the SPÖ gained a majority at the national level in 1970, and from 1983 onwards, it took the lead of a ruling coalition, first with the Freedom party (FPÖ) (1983-1986) and second, with the ÖPV (1986-2000). While not leading to a shift away from the car in major policy documents and the allocation of resources, traffic mitigation and “planning for people” policies (stage 2) were increasingly advocated in political discourses, and to a lesser extent, in policy documents and concrete measures, in order to increase accessibility and reduce congestion. A few symbolic, short-term restrictions for private car use were introduced country-wide in 1974, including the City of Vienna: every car owner had to declare a day of the week – with a sticker on the windscreen – during which car use would be banned. In this respect, **there was a growing disconnect between political discourses, that clearly marked a shift away from the car, and transport policy developments, that mainly favoured car-based solutions** (Emberger, 2017). A number of organizational solutions aimed at promoting a more integrated approach to transport were discussed: all transport modes were included in the first national transport strategy, and a reshuffling of ministerial portfolios was suggested – but only implemented three decades later – in order to better integrate road and rail policies.

Yet pro-car interest groups and a vast majority of subnational authorities resisted the attempts to effectively contain car growth and road construction. Throughout this sequence, motorized transport benefited from the largest share of resources and during this time period, the high-speed road network expanded considerably (see section 3).

Growing environmental concerns

Following the 1973 oil crisis, environmental awareness grew stronger at Federal level and contributed to the emergence of the Austrian environmental movement (Williams, 2000). Similarly to the situation observed in Western Germany, this new type of social demand emerged in the context of the dying forest phenomenon (*Waldsterben*), which was attributed to air pollution and acid rain. As environmental concern grew stronger, it sparked civil society initiatives and led to the Green Party being represented in the Austrian national parliament from 1986 onward⁶¹. In this rapidly evolving socio-political context, the car-oriented city model was challenged and its development was increasingly combined with traffic mitigation policies. A new set of emissions regulations were introduced across policy sectors (e.g., energy, housing, etc.) in order to reduce sulphur emissions (Emberger 2017). In transport, this resulted into supporting the use of sulphur-free fuels, renewing car fleet and later on, electric mobility⁶². Another set of traffic mitigation policies introduced at Federal level aimed at increasing road safety and a reform of the road traffic regulation (StVO) allows comprehensive short-term parking management schemes to be introduced from 1986 onward⁶³. Some programmes targeting daily commuting between low density/rural areas and urban agglomeration offered some limited funding and support to subnational levels of government to develop non-motorized transport alternatives, mainly per rail. This policy strengthened towards the end of the 1980s, as part of the federal government's efforts to reduce costs and levels of indebtedness. A number of motorway projects were abandoned, and subsidies available for road projects at subnational levels were reduced. These evolutions made new resources available for a larger range of transport policy developments across cities.

The Vienna region as a showcase for evolving Federal transport policies

The shift underway at Federal level was visible in Vienna as part of implementing national transport policies and regulations. The capital-city benefited from capacity investments in national transport infrastructures, which sought to increase its attractiveness vis-à-vis other major European cities (Buehler & Pucher, 2016). In this respect, pro-railways interests within the SPÖ and federal agencies, the ÖBB in particular, played a pivotal role in securing continued investment in rail-based networks, including those with a decisive urban dimension such as the metro. Their active role in shaping public transport networks and services at subnational level is to be understood in the context of the national federal system⁶⁴. Insofar as strategic decisions were now made at federal level and implemented in a hierarchical, top-down way, both the ÖBB and the SPÖ played a critical role in channelling the interests of, respectively, economic and political interests across levels of government. As part of its efforts to increase rail transport at provincial level, the ÖBB also selected the capital-city as a preferred location for experimenting with new forms of regional cooperation. It had made an agreement in 1961 with the Viennese transport agency in order to initiate a regional approach to transport management in the wider metropolitan area. Drawing on similar developments underway in Hamburg, a regional transport association was founded in 1974 – the VVO (see above) – and extended to local authorities in the adjacent province of Lower Austria. Yet it took another decade for the regional transport agency to start operating under the name of Verkehrsbund Ostregion (VOR), together with a single tariff zone and an integrated ticketing system. In cooperation with Wiener Linien at first, regional trains to the surrounding province were included in this joint platform with VOR's responsibilities extending within a perimeter of 50 kilometres beyond the city's border. Other public transport systems were incrementally included into the regional fare structure, including bus services in 1987.

Notwithstanding their critical role in fostering alternatives to car use, federal transport policies underestimated the specificity of transport congestion and pollution in urban areas (OECD, 2003). Moreover, they

⁶¹ Since then they enjoyed uninterrupted parliamentary record until 2013, see following section.

⁶² This resulted into a reduction in sulphur emissions from 350,000 tonnes a year in 1980 to 25,600 tonnes in 2007 (Umweltbundesamt, 2016). This shift also contributed to strengthening alternative transport solutions at Federal level, especially for the transport of goods, through rail- and waterways infrastructures.

⁶³ 13th StVO – Novelle. This opened new opportunities for cities to develop their own parking management schemes. In Vienna, it was developed as of 1993. For an overview of other cities in Austria, see Riedel (2013) and for a European overview, see (Technical committee on transport, 2005).

⁶⁴ See section 3 about the respective powers of Federal State and subnational authorities in the planning and provision of public transport services.

resulted into adding new policy layers rather than replacing pre-existing urban transport policies, thus leading to some contradictions and added room for manoeuvre at city level.

4.2.2 Transport and city planning as the two faces of the same medal

National debates shaped to limited extent only, the setting of transport policy priorities in Vienna. These were also reshuffled according to the urban dimension of transport issues that is, congestion, and in relationship with debates among practitioners and politicians about the selection of concrete transport solutions. Unlike discussions taking place at national level, it was mainly framed in relationship with city planning and congestion, due to the historical prominence of urban planners and architects over all city-related issues.

Congestion as a major policy priority

Traffic jams became a regular feature of city life in the inner centre of Vienna from the late 1960s onward, thus justifying the need to expand road space for car traffic and when possible, to relocate public transport below ground. Even though Vienna's population was further diminishing, increasing motorisation rates and daily incoming commuting traffic raised new concerns within the city's urban planning department about the transport network's capacity to accommodate travel demand. Indeed, and this constitutes a specificity of the Vienna case, debates about transport were continuously framed within a larger discussion on city planning, historical legacy and the need to preserve the appearance of the historic city. The urban planning administration and, more generally, the planning community, acknowledged the importance of transport for urban planning, and shared the idea that the existing transport system was ill suited to address travel demand. However, interventions to create a more car-centric road network were considered to impact the appearance of the historic city and risk harming the organic workings of the city.

First, this gave strength to the idea, still in force today, that the urban core of Vienna should benefit from tailor-made initiatives with the support of federal resources. A dedicated fund was created in order to cover the costs associated with the preservation of the inner-city area⁶⁵. Second, this contributed to highlighting some profound contradictions in the role attributed to transport as part of city planning objectives. The following quote from Otto Engelberger, city planner from 1972 onward, helps to understand how transport debates were framed during this period: *"The essence of a city is to offer residents and workers a healthy and liveable environment to live in. Transport plays a key role in it. Although its role should not be overstated, it is hard to imagine modern life without motorised traffic. Alone from these assertions it is apparent that the interests of different road users collide and restrict each other. To determine which road user interests are to be given priority, a measure of the optimal socio-political uses to society is to be used."* (Aufbau, 1969, TbNB). More fundamentally, this quote reflects the contradictions inherent to traffic mitigation policies (stage 2 policies): the aspiration of creating a modern city catering for the private car, whilst acknowledging the limited capacity of the road network and its inability to accommodate full motorisation rates.

The sentiment within the city planning department, the city administration as a whole and within the SPÖ, was that transport pressures could not be solely addressed by increasing public transport supply. This quote also captures the engineering approach to making this difficult political decision material. Within the city planning department, the conclusion was to assign demand for transport to the different modes that could meet that demand within the restrictions of a historic city. Where possible, such as for recent urban expansions, new transport connections were to be built. The 1969 and 1980 Transport Plans for Vienna (*Verkehrskonzept Wien*) very much reflect this consensus and it wasn't until the end of the second sequence, that some attempts were made to effectively strengthen the urban dimension of public transport and contain car use. Indeed, a number of transport initiatives introduced during this time period laid the ground for strengthening the urban dimension of public transport in later sequences.

⁶⁵ The decision was made in 1971 to preserve Vienna's urban core as part of the Preservation of Monuments Act and a Vienna-specific Protection Zones Act. This prefigured the decision to support this 371-ha area's inscription on the UNESCO World Heritage list, which was effective from 2001 onward.

Urban and transport planning as intrinsically linked policy issues

Insofar as transport planning and city planning were considered intrinsically linked, interrelated relationships between professionals, bureaucrats and politicians within the urban planning sphere were redefined accordingly. First, a series of organizational reforms introduced between 1969 and 1978, considerably enhanced expert knowledge within the city administration, that is MA18, as opposed to experts appointed in the academic sphere. By contrast to the previous sequence, during which expertise and knowledge about urban planning was mainly concentrated outside the city administration and embodied by the figure of the city planner, professionals within the city planning department gained increased control over the framing of city-related issues and the selection of preferred policy solutions⁶⁶. The main rationale was to increase in-house resources (e.g., human resources and finances) and allow for long-term planning. More precisely, city and land use planning, which had previously fallen under the jurisdiction of the appointed city planner, were transferred to MA18, the department for city planning within the municipal administration. Second, leadership over city planning was transferred to a politician, as opposed to a professional – architect, engineer or planner – and the MA18, the city planning department was taken out of the directorate for city building (*Stadtbauamtdirektion*) and made its own entity. This second organizational reform resulted into all city-related issues' increased visibility among elected representatives and the general public. By contrast to their predecessors who favoured housing and social welfare politics, new generations of SPÖ and ÖVP politicians considered transport and urban planning as major political priorities. In this context, within-SPÖ politics increasingly shaped the setting of urban and transport policy priorities in Vienna.

The controversies over two major large-scale projects that is, the development of the metro and flood protection, both resulted from and fostered this changed political and organizational context⁶⁷. More generally, these new political and administrative arrangements were – and still are – considered major enabling factors for long-term planning and carrying out large-scale urban development projects, including the development of a new public transport network.

4.2.3 A pragmatic division of tasks between over- and underground transport

Contradictions inherent to traffic mitigation policies were also reflected in the selection of concrete transport initiatives. In practice, a decision was made to distinguish between transport developments in the 1st district and in the rest of the city, and between the over-ground transport network in which the automobile was dominant, and the development of underground networks and infrastructures.

Reducing car use in relationship with heritage preservation

Tailor-made transport initiatives were introduced in the inner-city as part of the heritage preservation strategy. Due to the specificity of the urban fabric in this area of the city centre, place-making initiatives, drawing on urban design and traffic calming, were introduced in order to encourage alternative street uses, walking and tourism-related activities in these historic surroundings. They mainly concentrated in the 1st district with a focus on the surroundings of emblematic monuments and places, and to a lesser extent in the adjacent buffer zone. Specific attention was given to containing traffic congestion and reducing the impacts of car traffic, including its visual impact. Charges for short-term parking was introduced in designated zones, mainly close to shopping areas and as way to support tourist-related activities and small businesses. Pedestrianizing initiatives were also introduced from 1977 onwards, as well as reduced traffic speed limits. These measures offered an unprecedented opportunity to develop the urban dimension of transport policies in relationship with heritage preservation.

Priority given to car use on the over-ground network

Outside the inner-city, road investments still concentrated the largest share of transport investments over-ground. The cycling network was further reduced from 24 to 11 kilometres to accommodate motorised traffic

⁶⁶ See also section 3, about the local planning culture

⁶⁷ This refers to the development of the Danube Island project.

(Stadt Wien, 2013a). Remaining segments of the tramway system⁶⁸ were converted into underground tramlines, allowing the upgrade of road space in order to speed up traffic flows. Indeed, most transport investment during this sequence were meant to create more space for traffic flows. As explained during interviews: *“back then the tram network was still considered as obsolete – a relic of the past - that was to be phased out. It was envisioned that as the metro was extended the tram routes would be retired. This was discussed in length and a decision on the matter was perpetually postponed”* (Interview transport expert, March 2016). 3 new urban motorways were built outside the well-established urban core, in the outer urban areas between 1978 and 1989. Furthermore, increased grade separation was promoted between car traffic and all other road users. The most prominent success of this paradigm of thinking was the tunnelling of the Ringstrasse. Urban design and investments favoured underground or, alternatively, elevated, pedestrian crossings alongside major arterial roads in order to ensure both safety and speed. Meanwhile, implementing federal legislation on road safety led to the introduction of a 30 km/h speed limit on small segments of the road network, mainly in the urban core and as part of attempts to preserving the city's architectural heritage.

Re-examining underground public transport solutions

The conversion of the tramway system into underground tramlines also led to re-examining other public transport solutions. Meant for the benefit of car drivers, the development of underground tramlines took place without any significant investment in new interchanges and lighting. It altogether reduced the attractiveness of public transport and raised some discontent among users. The suggestion to build a metro resurfaced in the late 1960s in a context of increased political competition. At federal level, it contributed to the SPÖ's strategy to differentiate itself from its former coalition partner and get a majority in Parliament. The two main arguments were put forward in support of this initiative within SPÖ and pro- railways advocates, with ÖBB in particular favouring the greater centralization of all rail networks around a main station. First, Vienna needed such an infrastructure in order to compete with other world cities. Systematic references were made to the decision by the City of Munich to build a metro in the early 1960s, and repeatedly appealed to the SPÖ's historic role in prioritizing the aspiration to be a “modern city”.

Second, due to the growing realisation that the private car alone could not transport enough people and that the city needed high-capacity public transport. This approach gained growing support within MA18 and was mainly framed in a planning perspective. Within the local SPÖ however, there was no general agreement on the concrete solutions that were to be selected in order to improve the public transport supply. Historically, it had favoured alternative solutions to the metro against both the Conservative and the Communist Party. This preference was motivated due to the duration and costs of such a large infrastructure project, and the fear that it would weaken this party's leadership over local politics. As the political controversy about the Danube Island project led to increased ÖVP-SPÖ competition, the SPÖ revised its strategy in accordance with the solutions under discussions at a national level within the soon-to-be elected majority. Together with SPÖ figures and ÖBB, MA18 demonstrated its ability to champion this flagship project against, on the one hand, those favouring the development of new urban motorways and on the other hand, those advocating a strict economic appraisal of all proposed policy solutions⁶⁹. The decision to build the metro system was made in 1968 and both organizations successfully lobbied national government for half of the construction costs (some ÖS 2.4 billion).

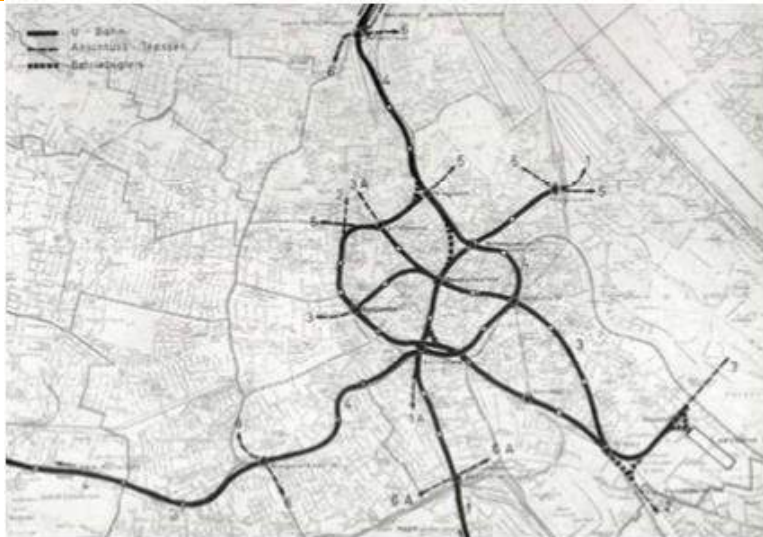
The decision reached in 1968 reflects the overlap, during this transition period, between two different approaches to transport planning: one that is car-dominated for surface transport, and one that favours high capacity rail-based systems for underground transport. Alongside the decision to plan new urban motorways, the political agreement gave the go ahead to planning underground transport infrastructures, with 3 lines at first, U1, U2 and U4, and a central station (Karlplatz). It drew on both transforming existing networks and building new infrastructures, as a way to address the issue of both duration and costs. Such an incremental process allowed the progressive opening of the system and building increased socio-political support for justifying the planning of new extensions. The first U-Bahn line, opened in 1976, resulted from both the transformation of existing inner-city railway lines, a section of an underground tram and one line totally new constructed. The former Stadtbahn system was dismantled in 1970 and from 1976 onwards, parts of it was integrated into the newly established U-Bahn system. Overall, the construction and continued extension of the U-Bahn system after 1978

⁶⁸ Two tram routes and ten stations in the urban core.

⁶⁹ This managerial approach was championed at the time by Felix Slavik, a major political figure within the national SPÖ and mayor of Vienna between 1970 and 1973.

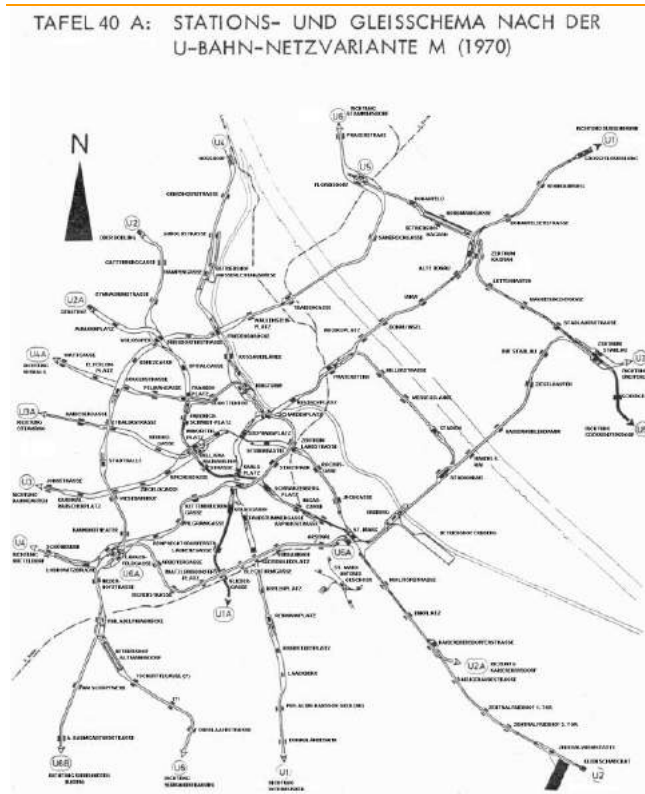
(U3 and U6 notably) contributed to rationalising remaining segments from pre-existing transport systems. It also opened some opportunities for measures aimed at strengthening the urban dimension of public transport, such as developing pedestrian zones in the vicinity of large U-Bahn stations in the inner-city area.

Map 6b. Plan for the U-bahn network, as of 1966



Source : 3. Jahrzehnte U-Bahn Bau, S. 20.

Map 6c. Overview of proposed U-Bahn network in Vienna in 1970



Source : <http://www.tramway.at/> (consulted January 2018)

The U-Bahn system as an alternative to the automobile

The metro system soon emerged as the backbone of the city's transport network, carrying the majority of passengers and shaping new urban developments in terms of both workplaces and housing. In addition to this large capacity investment, new transport innovations were experimented in the 1st district, including above-

mentioned pedestrianizing and reduced speed limits. Furthermore, the opening of this new public transport system fostered new interest among the public for public transport and enhanced those organizations – transport companies, city administration – in charge of its planning and daily operation. Holding responsibility for the provision of public transport services as part of the City's utilities company, Wiener Stadtwerke-Verkehrsbetriebe grew stronger as it benefited from regular resources for daily operation of the network. In those years, cross-utility financing allowed for electricity and gas rates to cover for the local transportation system. This did not, however, put an end to criticisms questioning the added value of this new infrastructure from a cost-benefit perspective and as part of continued debates about the profitability of public services. In line with a managerial approach to the selection of transport solutions, the burden public transport represented for the city's budget was regularly questioned from both the political opposition and from within SPÖ. Several options were explored in order to cover the operating deficit. Yet MA 18 and Wiener Linien were able to successfully resist expenditure reductions and budget cuts. This in turn confirmed the changed nature of public transport supply and its growing integration into Vienna's corporatist form of political clientelism, as demonstrated with decisions regarding the location of future metro extensions.

Since then, the metro system has benefited from uninterrupted support from the Federal state, which in turn justified its expansion at the local level. More generally, it was understood among local elites that efforts to reduce operating deficits were not to be achieved through the increase of fares or the reduction of services.

4.2.4 The emergence of an alternative urban planning model

All the changes resulting from these large scale urban developments were not welcomed and opponents criticized both the form of decision-making and the urban vision they represented. The city's wish to avoid land speculation and maintain a strong hold on urban planning and real estate development meant that projects were only made public at the latest possible stage. As new extensions were planned in close connection with urban regeneration and housing projects, this hierarchical form of decision-making was increasingly criticized.

The Conservative opposition denounced the instrumental use made by the ruling majority of public transport services and investments in order to maintain a high level of support from its traditional clienteles, mainly social groups and districts. Other criticisms stemming from civil society organizations advocated the need for another approach to urban planning.

Grassroots mobilizations and the idea of "gentle city regeneration"

Beyond criticism against the metro project, forms of urban governance and specific policies were increasingly opposed by grassroots mobilizations. Signs of greater civic engagement were visible among homeowners' and residents' associations. Together, they increasingly challenged specific urban development projects and more generally, forms of urban governance and policy-making⁷⁰. By strategically using their right – since 1973 – to call for a referendum, civil society organizations gained additional opportunities to intervene in urban politics⁷¹, as demonstrated with Mayor Slavik's proposed extension of the university campus (1973) or the SPÖ-led suggestion that Vienna should host the 1995 world's exhibition (Pelinka, Rosenberger 2007: 87). In addition to neighbourhood and homeowners' associations, **environmental concern grew stronger within the local population, with an increased focus on air quality and nature preservation**. In Vienna, social demands and environmental mobilizations rapidly expanded beyond concerns for the dying forest, with a number of issues linked to city life, including the negative externalities associated with car use, the quality of housing (*Vollwertwohnen*) and the overall rational of urban development principles. Following mobilizations against the university campus extension, students and green movements advocated the use of cycling for everyday travel as part of dedicated organizations, and a working group for environmental-friendly, i.e. ARGUS⁷², urban transport was created in 1979 (Hachleitner et al., 2013, 140-141). The idea of "gentle city regeneration" was opposed to

⁷⁰ One of the most emblematic campaigns opposed the extension of the Zoological Institute of the University of Vienna, which would have led to privatising a parcell of the *Sternwartepark*. The campaign benefited from substantial press coverage from the local newspaper Kronenzeitung, and a referendum was held in 1973. Following the failed referendum in 1973, Mayor Slavik resigned.

⁷¹ Even if the result of a referendum is not legally binding, so far hardly a representative body has ignored the result of a referendum.

⁷² Arbeitsgemeinschaft umweltfreundlicher Stadtverkehr (ARGUS)

large-scale urban developments and a number of demonstrations and public events were organized about developments underway as part of the DonauCity project.

These demands for alternative urban planning solutions met with a growing concern for the city's level of indebtedness. Revenues from local taxes were stagnating. As federal housing regulations and organizations were being reorganized in line with a liberalization reform agenda, the local SPÖ sought to alleviate restructuring costs in the local welfare state regime through a series of adjustments. Social mobilizations eventually led into new Guidelines for city development⁷³, which reflected the diffusion of a new thinking within the city administration. Whilst the main focus was on social and housing regeneration in historical working-class areas, **environmental planning was introduced progressively and mainstreamed across policy sectors in order to ensure the creation of liveable and sustainable communities**. City planning was increasingly considered integral to environmental planning in order to ensure both quality of life and resilience to natural catastrophes⁷⁴. On the one hand, new planning bodies were created for specific projects and policies, such as the DonauCity project, in order to reach out to private investors⁷⁵, while on the other hand, the city – and the SPÖ – remained owner of municipal companies and maintained a stronghold on the provision of public and social services, including housing and transport. To some extent, these adjustments led to redefining relationships with civil society organizations in combination with the traditional clientelist model (Becker and Novy, 2001). Increased attention was given, as part of this changed urban planning model within MA18, to consulting the general public. City planning was not restricted anymore to political and practitioners' forums. Yet these organizational reforms did not put an end to the old bureaucratic model and strengthened the role of informal networks linking central bureaucracy, autonomous bodies and (semi-public) businesses in a number of sectors.

Changed local political context, shifting transport priorities at federal level: a turning point in urban transport policy priorities

In this changed political context, more radical transport solutions were being considered, mainly as part of increased political competition with the ÖVP and within SPÖ itself⁷⁶. Unlike the large majority of politicians who pursued a long-term political career, Mayor Zilk (elected in 1984) came from the media industry. He relied upon alternative policy solutions in order to differentiate himself from traditional SPÖ politics and seek extended support among both the student and the green movements. Some of the new urban motorways planned in parallel to the metro system were suspended temporarily in the city's inner core. Furthermore, Vienna's share in transfers from the federal government was declining and pressure to reduce costs, especially in public services, increased. This reform agenda met with changes underway in the federal road policy, with new projects being abandoned and subsidies available for urban motorways being suspended or reallocated to other transport projects (e.g., non-motorized transport, traffic mitigation, etc.) under the growing pressure of the Green Party. This led to a second revision at city level, resulting in several road projects being abandoned for good in the inner-city districts, where they faced strongest citizen's resistance. In addition, the new city administration suggested converting arterial road network's nodes into multilevel junctions in order to make some space available for other transport modes. Non-motorized transport initiatives were also encouraged. A bus nightline network was introduced in 1986. Cycling was granted unprecedented levels of attention from the ruling majority, as part of its attempts to address – and co-opt – new social and environmental demands.

Until then, transport planning documents mainly framed cycling in relationship with leisure activities. The 1980 Transport master plan stipulates that "*Cycling lanes should be developed especially in recreation areas and on the city's outskirts. In a later phase, a bike lane could also be created alongside the Ringstrasse*" (Wiener Verkehrskonzept, 1980, p.9, TbCH)⁷⁷ (see Map 6d). A shift was observed from 1986 onward, as noticed by an interviewee: "*He decided from one day to next to push cycling. Probably because he unusually joined politics from the media industry. He was looking for new ideas, new allies*" (Interview transport expert 3, March 2016). Pro-

⁷³ Leitlinien für die Stadtentwicklung

⁷⁴ See also meetings at MA 22 about environmental protection in Vienna, Sciences Po, STU study trip to Vienna-Bratislava (November 2013).

⁷⁵ See the role of the WED (section 3).

⁷⁶ See also Kurz (1981).

⁷⁷ TbCH stands for Translated by Charlotte Halpern

cycling organizations were formally recognized as stakeholders in discussions about transport planning. Cycling was increasingly framed into transport policies, resulting in a series of measures, such as traffic exemptions for cyclists, the building of cycling paths and laying the foundations for a cycling ring road project in 1985. Bicycles were allowed on the metro and the regional train networks, and ARGUS benefited from the Mayor's office support for opening cycling offices and establishing a first map for cycling routes. These initiatives were mainly developed in those areas where grassroots organizations were best represented (4th and 7th districts) or where environmental protests challenged new urban projects (Donau Island). Yet in 1991, its mode shift added to 1.5 per cent of trips (Stadt Wien, 2002).

Map 7. Cycle path network as of 1982



Source : retrieved from Magistrat der Stadt Wien (2002), p.5

Together, these changes outlined a new vision for urban and transport planning, **but its implementation was postponed for another decade** due to a change in demographic context and to major socio-political controversies. To be sure, it resulted in stopping remaining road construction projects. Yet beyond small-scale, symbolic initiatives, the effective development of on-street cycling measures (Stage 3 policies) met with resistances from the public transport company and the pro-car lobby. The proposed cycling ring project was only built in parts and introducing shared traffic on bus lanes led to lengthy negotiations with the transport company. The urban dimension of public transport remained limited and restricted to ensuring greater accessibility to, from and within the city centre (stage 2 policies).

4.2.5 Concluding remarks, Stage 2

As rail-based networks expanded and captured a growing share of resources, policy attention also shifted from accommodating private car growth and trying to meet demand by expanding the road network, to an attempt to meet the demand by building rail-based public transport solutions. Pro-public transport interests grew stronger and accumulated new policy resources. Yet apart from some symbolic decisions, such as the weekly ban on car use, the political consensus within the social-democratic party favoured the status quo that had contributed to a division of tasks between over- and underground transport.

Overall, such transport developments reflect the contradictions inherent to the shift from 'car-oriented city planning' and the 'planning for people' approach. In Vienna, the choices made in the late 1960s to distinguish between over and underground transport led to a continued encroachment between Stage 1 and Stage 2 policies. In this context, the urban dimension of public transport remained limited and restricted to ensuring greater accessibility to, from and within the city centre (stage 2 policies). Under the pressure of the students and the green movement, small-scale cycling initiatives were introduced (stage 3 policies) in those areas where protests were most developed.

4.3 Limiting car traffic through the integrated transport approach (1991-2011)

Following the fall of the Iron curtain in 1989, and in the context of pre-accession negotiations to the EU in 1995 and preparatory works for the 2004 enlargement, transport policies evolved rapidly in Vienna. An integrated transport approach to transport was developed at both federal and city levels, which sought to make public transport attractive and to reduce car traffic externalities. In Vienna, city planning priorities were defined in a new generation of spatial planning documents – STEP 1994 and STEP 2005 – and regularly updated in order to accommodate demographic and urban growth. The mainstreaming of these spatial planning goals across policy domains was incremental, reflecting a number of barriers such as social resistance and organizational reforms

Focusing on transport policy developments, this section examines the disconnect between, on the one hand, the shift observed in policy objectives from traffic restrictions for accessibility (stage 2) towards traffic restrictions for the liveable city (stage 3), and on the other hand, the stability of urban and regional transport policy instruments (stage 2), which combine improvements brought to public transport both in terms of capacity and in terms of quality, together with measures to reduce car use through parking management. Such ambivalence is explained by transport politics and the need for Dr. M. Häuptl, who was elected mayor in 1994 and has remained in post ever since, and the SPÖ to accommodate his traditional supporters.

4.3.1 The emergence of an integrated transport approach at the Federal level

Evolving constraints and opportunities in federal transport politics and policies shaped transport policy developments at city level. In the context of the 1995 accession to the EU and the 2004 enlargement, the political reorganization that had been launched in the late 1980s was consolidated in connection with liberalization reforms. In spite of the increased political competition from the Green Party and the FPÖ, the role of neo-corporatist institutions was redefined in order to enhance international competitiveness and reach out to the private sector. In this context, most efforts were devoted to strengthening Vienna's central location as a major European hub and that of Austria within an enlarged Europe.

Priority given to accessibility, traffic mitigation *versus* the Green Party's "gentle mobility approach"

As part of the consensus-seeking approach to decision-making⁷⁸, the general orientation reflected in the Federal transport master plans and infrastructure plans until 2013 was to improve economic growth through construction works and the modernization of transport infrastructures (Emberger, 2017, 13). This overarching goal did not, however, reverse the slowdown in road and motorway investment that had been observed since the mid-1980s. In the context of pre-accession negotiations, road traffic mitigation objectives were introduced in order to reduce road-traffic-related emissions, improve air quality and increase safety. During subsequent negotiations at EU level about road safety, air pollution and emissions, Austria sought to achieve a "frontrunner" position in its attempts to promote its integrated approach to traffic mitigation (Knill, Liefferink 2001). The Green Party was instrumental in pushing for a more sustainable transport policy agenda at national level. In the context of the Austrian model of consensual democracy, they never participated in Federal governments but enjoyed an uninterrupted parliamentary record until 2013 and gained a strong governing experience at subnational level (regions and cities) (Buzogany, Scherhauer, 2018). Within parliamentary opposition, they actively sought to regulate the negative externalities associated with car use and **to support the development of an alternative approach to transport and mobility**. This agenda now extended to cycling and is linked up with a large range of cycling organizations. ARGUS had transformed into a large, federal organization with a number of local offices across the country, and together with other cycling organizations in Austria, they regrouped as part of a joint lobbying platform (*Radlobby Österreich*). Together with a new generation of urban planners and transport experts, they promoted a "gentle mobility approach" (*sanfte Mobilität*) that relied upon greater segregation between transport modes as a way to enhance the role of cycling as a transport mode. To this end, they pushed for new

⁷⁸ A government coalition between ÖVP and FPÖ took over between 2000 and 2007, followed, between 2007 and 2017, by a return to a SPÖ – ÖVP ruling coalition.

road traffic regulations⁷⁹. Towards the end of the sequence, they also advocated the rapid transposition of EU cycling initiatives, such as encounter zones⁸⁰.

Strategically using the EU as a constraint to change, successive ruling coalitions supported the emergence of an integrated approach to transport planning and policy-making, as well as the implementation of solutions that had been under discussion for some three decades. Intermodal transport masterplans were introduced from 1991 onwards and following the election of the ÖVP-FPÖ coalition in 2000, to the creation of a joint ministry for roads and rail was introduced in order to foster greater integration between transport modes⁸¹. Both railways and roads sectors were profoundly reorganized. A series of reforms in the management and funding of motorways was introduced in line with the concept of true costs in the transport sector, including public-private partnerships, road pricing for private cars on motorways (1997) and a distance based heavy goods vehicle road pricing system (2004). Alongside efforts to regulate freight traffic, “making public transport attractive” was considered another major Federal transport policy priority. The railway sector – and ÖBB in particular – was also reorganized in order to separate infrastructure planning from operation on the one hand, and to transform it into a competitive alternative for both passengers and the transport of goods.

Some attention was also given to local public transport as part of the 1999 Federal law⁸², which confirmed the division of tasks between levels of government and the role of subnational levels of government in transposing national principles and goals into concrete policy measures⁸³. Two major goals were set at a federal level as part of the integrated transport approach: first, to reduce the need for travel through land use measures and second, to optimize existing infrastructure and develop new ones. The development of park-and-ride facilities was actively supported throughout the country in order to encourage the shift from private car use to public transport. Yet in this case, the Federal state mainly depended on subnational authorities at implementation stage.

Strengthening Vienna's strategic position in an enlarged EU

Together, the changes taking place at the federal and the EU levels had some direct and indirect impacts on urban and regional transport in Vienna. The strengthening of the capital-city as a major European hub led to a investment in strategic transport infrastructure and networks, including the extension of the airport, the development of a new main train station (*Bahnhof Wien Europa Mitte*). Major railways and highways were planned in order to reconnect the city with regions across the border, while at the same time, offering new opportunities to plan added capacity and modernize existing networks. EU policies and funding were also instrumental in developing cross-border relations and networks as part of the Danube Region strategy and the CENTROPE project⁸⁴. Towards the end of the period, the Federal state's smart city agenda incentivized local authorities to promote increased integration across sectors and to reshuffle urban policy priorities. Furthermore, shifting priorities at federal level also meant that funding was available for subnational governments in order to fund public transport initiatives, including capacity investments in regional railways and metros. In the case of Vienna, the Federal State continues to fund 50 per cent of underground metro extensions. The ÖBB's rail network in Vienna also benefited from continued support and capacity investment, resulting in this network accounting for some 25 per cent of the overall performance of the city's public transport system.

All in all, and similarly to the dynamics observed during the previous period, federal politics and transport policies exerted a pivotal role as a driver for transport policy change and **shaped the access to funding opportunities and the general framework within which Vienna's transport policy developed**. Yet in a number of issues, Vienna also went beyond the choices made at Federal level in order to further constrain car traffic.

⁷⁹ Strassenverkehrsverordnung, StVO

⁸⁰ This agenda was also supported by pedestrian organizations at Federal level (Interview Mobility Agency, February 2016).

⁸¹ See above, section 3. Bundesministerium für Verkehr, Innovation und Technologie (BMVIT).

⁸² This piece of legislation also takes into account changes underway at EU level in the regulation of public services.

⁸³ See Section 3

⁸⁴ See section 3

4.3.2 Reframing urban transport policy objectives and resources in a context of regional growth

In a changed socio-economic and political context, car traffic reduction emerged as a major priority in transport planning policies. The STEP 1994 reflects these new concerns and highlights the necessity for Vienna's repositioning in a new Europe. By contrast to pre-1989 spatial planning objectives, according to which the city – and the country – sought to develop relationships across its Western and Southern borders, it now sought to become an anchor point in a new Central Europe. STEP 1994 also emphasised the need to plan for a city that now for the first time in decades was one with a growing population again, and in this changed context, to maintain high levels of quality of life through the reorganization of public spaces, high environmental protection standards and traffic safety measures. A decade later, STEP 2005 confirmed the priority given to public transport, and reframed transport policy objectives in a regional context.

Prioritizing public transport as part of STEP 1994

In transport, and similarly to the situation observed during previous decades, the aim was to ensure accessibility to workplaces and leisure activities while at the same time limit congestion and road-traffic related emissions. Its operationalization was, however, differentiated according to three types of urban areas. In line with the city's commitment to ensure the inner-city's inscription on the UNESCO World heritage list, a large-scale regeneration programme was designed for the city centre (Wien-Mitte project) (De Frantz, 2001), in which specific attention was devoted to car traffic restrictions⁸⁵. Mainly aimed at dismantling off-street parking and at reducing the impact of traffic pollution on historical facades, the local authorities searched for a compromise between the need to preserve the inner city's distinctive heritage while at the same time coping with the opposition from residents and shop-owners to reduce accessibility. As part of its attempts to strengthening activities linked to tourism and culture, the urban dimension of transport, which had been developed from the late 1950s onwards and in relationship with the introduction of the metro system, was further strengthened in order to enhance the quality of public spaces. Discussions about STEP 1994 also highlighted the need to examine developments taking place in outer districts and across the city's borders. In this context, they focussed more particularly on congestion reduction. Following four decades of urban growth outside the city's borders in combination with city-led efforts to relocate workplaces and housing in outer districts, travel demand was increasingly defined in a metropolitan context and highlighted the need to revise the city's transport strategy accordingly. The metropolitan wide transport alliance VOR proved instrumental for developing joint public transport initiatives with adjacent local authorities in Lower Austria and across public transport companies.

Transport policy objectives were redefined according to these new city planning objectives. Preparatory to the 1994 Transport strategy (*Wiener Verkehrskonzept*), different pathways were examined. During the election campaign resulting into Dr. Häupl being elected as mayor in 1994⁸⁶, transport was singled out as a hotly debated topic within SPÖ and between political parties, and more generally, between pro-car and pro-public transport advocates (Interview Transport expert 2, March 2016). On the one hand, the ruling majority needed to ensure support from voters in outer districts, which were considered more car dependent due to their own individual preferences – in the case of wealthier social groups in low density areas – as well as to the unequal distribution of public transport supply which proved detrimental to lower-income social groups. On the other hand, negotiations were also underway in a changed regulatory context in order to reduce operating costs in public transport while at the same time ensuring the SPÖ's commitment not to increase fares or reduce the quantity and the quality of services. Political discussions within SPÖ resulted in enhancing the attractiveness and the performance of public transport. The city proposed achieving these goals by combining increased public transport supply – network expansions and higher frequency of service – with price-based parking management. The goal was to reach 45 per cent public transport trips by 2010. One of our interviewees summarized the compromise reached in 1994 between different transport modes and in view of the differences between areas in the city as follow: “*It is a recognition of the traffic issues and there is an agreement to expand the metro network and a few tram routes.*”

⁸⁵ The preservation of this area's “architectural and urban qualities and layout” now draws on a combination of protection requirements and management resources. Furthermore, a 462-ha buffer zone protects the immediate setting of the inscribed property. See description on the UNESCO World heritage website: <https://whc.unesco.org/en/list/1033> (last consulted, January 2018).

⁸⁶ Preliminary works drew on diversified sources of expertise and gave increased attention to values and attitudes linked to transport behaviors. We are grateful to the grey literature and archives provided by SozialData GmBH.

Measures to reduce the attractiveness of private travel are introduced. The centre of the city is at capacity and the traffic is always a background issue” (Interview transport expert 1, March 2016, TbNB).

Framing city planning goals in a regional context: STEP 2005

These traffic mitigation objectives were confirmed a decade later as part of STEP 2005 and the strategic role of public transport as the city's transport network was further strengthened. This spatial planning document reiterated the aim to develop and strengthen Vienna as a leading metropolis in Central Europe (Stadtentwicklung Wien, MA18, 2005). It highlighted the growing insertion of Vienna within European and global dynamics, the prospect of new opportunities attached with the 2004 enlargement, as well as increased competition with neighbouring cities to attract foreign investment, commuting patterns, shopping and tourism flows. Mirroring some of the concerns expressed in Federal policy documents regarding the national economy's attractiveness, a number of present and future threats to Vienna's economic growth were identified in relationship with developments underway in new member States and in Munich, the Austrian capital-city's historic rival. To some extent, STEP 2005 confirmed and strengthened the choices made a decade earlier. But inasmuch as it framed urban and regional planning in a metropolitan context, it also opened some opportunities for regional cooperation across a number of policy areas, including transport, and beyond the VOR context. The following quote from STEP 2005 reflects the shift away, in city planning, from inward-driven planning objectives: *“The City of Vienna, which in its spatial form was so influenced by the city's development in the 19th century, now needs to look beyond the city's jurisdictional boundary and work with the region”* (Ibid., TbNB). Drawing on EU policies and funding for cross-borders' initiatives, Vienna and the adjacent province of Lower Austria linked up with Bratislava to create a joint economic and development strategy for what was now labelled as the two-headed metropolis. According to a prominent figure in this process, the shift towards a cooperative regional alliance from the earliest stage on was also meant among political and administrative elites in Vienna as a way to prevent alternative strategies that would have been detrimental to the capital-city and to draw on its extensive technical and financial resources in order to maintain a strong hold on both the spatial planning process and the implementation of joint initiatives⁸⁷.

City planning goals were also reframed in a regional context. The aim was to strengthen economic growth within the city's boundaries while at the same time, safeguard existing green space and develop new ones. Drawing on the city's historic approach to urban planning, it suggested reverting to a strategic use of land-use regulations in order to separate areas opened for new developments – both residential and commercial – from those within which leisure activities, agricultural land and production, and green spaces would be protected. Explicitly referring to the 19th city planning principles, STEP 2005 highlighted the need to safeguard the city's green belt (Wienerwald) and calls for densifying areas located alongside existing and planned public transport infrastructures and services. **The main difference lies in the city planning model to which these principles refer, sustainable urban development having replaced the ideal of the modern city.** Similarly to the objectives introduced in the post WWII era, these newly defined spatial planning goals confirm the preference given to developing outer districts alongside future rapid transit road and rail infrastructure. Yet a significant shift took place regarding the role attributed to public transport as opposed to private motorization: expanded and upgraded public transport networks are to unlock new areas for development in the region and within the city's borders. New urban development areas are identified on the Danube Island (DonauCity) and towards the East (Seestadt Aspern) as part of this continuum between city and regional planning.

Overall, the emergence and development of an integrated approach to transport increasingly shaped policy developments in Vienna. A set of measures was introduced during this sequence, in order to meet with above-mentioned city-planning and transport policy goals. In addition to the profound reorganization of the public transport sector (see below), they proposed combining two flagship policy measures in order to ensure accessibility and reduce congestion: parking management and prioritizing public transport (stage 2). Other approaches, such as those discussed as part of the “Gentle mobility approach”, suggested combining awareness raising with the reduction of road space available to cars, the development of active transport modes and the strengthening of land use regulation. Those were either marginalized or paid lip service in policy discourses and documents without being allocated sufficient resources (Interview Transport expert 3, March 2016).

⁸⁷ See meetings during the Sciences Po STU Master programme's Study trip to Vienna and Bratislava in November 2013.

4.3.3 Mitigating the impact of car traffic through parking management and public transport

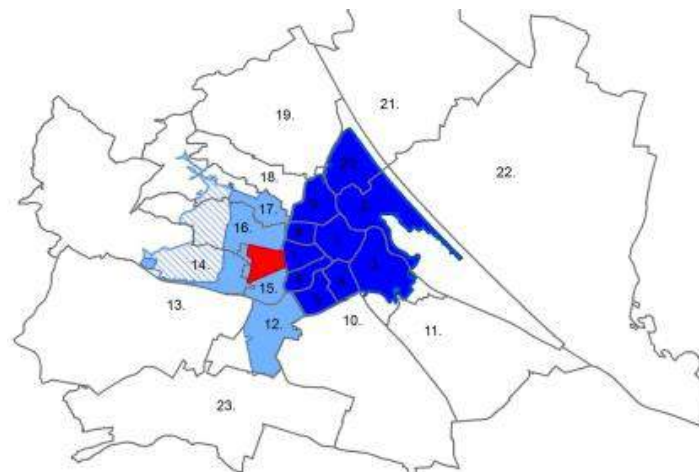
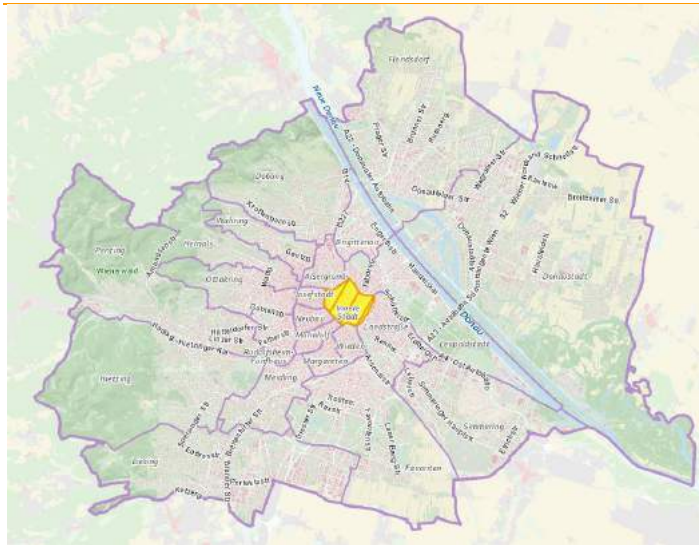
This section examines the introduction of parking management initiatives and the strengthening of public transport from 1991 onward. It argues that both policy tools were singled out at city level as flagship transport policy measures. Unlike traffic mitigation measures advocated at Federal level, they allowed local politicians to make the specificity of the Viennese approach visible. Indeed, the “Viennese model of public transport” (*Modellstadt für öffentlichen Verkehr*) and the parking management system became the trademark for the city’s efforts to market itself as the EU capital-city with the highest quality of life. Yet as implementation unfolded, some concerns were raised regarding their contribution to strengthening the urban dimension of transport as well as their weak environmental dimension. This is discussed in more details in the following paragraphs.

Parking management as a trademark for the Viennese approach to traffic reduction

As of 1993, a more systematic approach to parking management was introduced. This initiative built on past initiatives: parking restrictions already existed since 1959 (see above), parking charges had been introduced in 1975, with an initial cost of ÖS 4 an hour in 1975 up to ÖS 12 an hour in 1986, and at federal level, the changed road traffic regulation offered new opportunities to develop a comprehensive parking management scheme at the local level (Rieder, 2013). Instead of covering specified street segments and smaller areas, the parking management initiative planned to introduce short-term parking charges for the whole city. The entire first district was turned into a short-term parking zone in 1993. Initially meant as a pilot project aimed at reducing car traffic, this first experiment and its impacts – on travel behaviour, but also economic and political – were carefully examined prior to any decision for further expansions. A commission responsible for parking regulation was installed in order to draw lessons from this experiment and to work on specific rules and exemptions prior to its full implementation. In the inner-city centre, the introduction of parking charges since 1975 had generated some discontent among residents, shop-keepers and other daily users. District representatives and municipalities outside Vienna were concerned with this measure’s impact on accessibility to the inner-centre for daily commuters. The commission on parking regulation engaged with a large range of stakeholders, including interest group representatives, technical experts, local government representatives, and voices from industry. Residents were also consulted and several opinion polls were commissioned in order to assess the population’s feelings towards proposed changes. **As a result of this consultation process, greater differentiation was accommodated according to target groups’ demands and as part of district-based extensions.** Furthermore, additional objectives were assigned to the parking management initiative, alongside car traffic reduction, namely improving parking conditions for residents, small shops costumers and owners. This evolution was meant as an encouragement for other districts to join the scheme and to reduce criticism amongst residents and shop owners.

The policy was first introduced in the inner-city area and progressively extended towards the outer districts. Whilst the final decision regarding parking management is made at district level, it needed to fit within the framework set at city-level notwithstanding some exemptions. Between 1993 and the early 2000s, additional districts joined the parking management schemes. As summarized during interviews: *“Within 5-10 years the initial scheme introduced in one borough is expanded to more boroughs in inner Vienna. This makes the use of public transport more attractive and also quality of life as it reduced the number of cars searching for parking in the urban core, as few can now park”* (Interview transport expert 1, March 2016, TbNB). Another incentive for joining the scheme was related to increased parking demand in adjacent districts (Institut für Verkehrswissenschaften, 2013). In those districts that joined the scheme, residents were allowed to buy a permit for long-term parking whereas non-residents were only allowed short-term parking. The introduction of parking management was done in combination with the development of car parking facilities for residents and visitors. A large share of parking facilities, including park-and-ride, was developed by Wipark, a 100 per cent-owned subsidiary company from Wiener Holding that was created in 1960, together with the first parking fees in the inner-city. Revenues generated from parking fees were meant to cover for these investments and introduce sustainable transport measures in the city (Dorner et al., 1997). Until 2002, parking charges remained below the € 0.80 per hour threshold.

Map 8a & 8b. The expansion of parking management in Vienna, 1993 vs. 2013 compared.



NB: The map outlines the dates when district-wide short-term parking regulations were introduced.

Where	When	What
District 1	July 1993	Parking duration: 2 hours – Mo-Fr 9 AM to 10 PM
Districts 6-9	September 1995	Parking duration: 3 hours – Mo-Fr 9 AM to 7 PM
Districts 4 & 5	June 1997	Parking duration: 2 hours – Mo-Fr 9 AM to 22 PM, Sa, Su & holidays 6-10 PM.
Districts 2 & 20	March 1999	Parking duration: Mo-Fr 9 AM to 22 PM, 9 AM-7 PM.
District 3	November 1999	
District 15, Stadthalle neighborhood	September 2005	
Parts of Districts 12, 14, 15, 16 and 17	October 2012	

Source : Magistrat der Stadt Wien, 2016a. Table elaborated from various sources.

Conflicting views about the parking management's impact on car use reduction

A number of transport experts highlighted the impact of parking management on individual preferences through a price signal on the one hand, and awareness raising on the other hand. In the words of an interviewee: *"The incentive to shift from car use to public transport or active modes comes from parking charges creating a greater awareness of the costs of private motorised transport. As a tool, parking management tends to monetise some of the private car use's externalities and to imposes a greater share of this financial burden to car users as opposed to taxpayers"* (Interview transport expert 3, March 2016). Yet parking management was also considered among transport experts as a source of ambiguity in terms of the signal sent to car users both within and outside parking management ones: the price incentive was not considered high enough to deter car users and insufficient to cover the cost of negative externalities. More precisely, residents were given a greater number of options, but not encouraged to sell their cars, while at the same time, car drivers outside parking management zones who

could afford parking prices or enjoyed free parking spaces in their workplaces were not sufficiently incentivized to use alternative transport modes (Interview transport expert 2, March 2016). Between 1997 and 2005, the number of public parking lots in garages accessible to the public increased by 73 per cent (Stadt Wien, 2013b). The significant reduction of off-street parking was particularly marked in the inner-city centre and supported the city's application to the UNESCO World Heritage list, which became effective in 2001: "*Parking cars have been completely eliminated from a number of historic squares (Franziskanerplatz, Josefsplatz, etc.) within the historic city center*"⁸⁸. Insofar as a large share of parking facilities were developed by a city-owned company, including some 45 per cent of park-and-ride facilities, parking management was also used in order to make on-street space available for other activities, including "green spaces, playgrounds, pedestrian areas and revitalized historic places"⁸⁹. Furthermore, the amount of parking fees was not considered high enough to support sustainable transport measures beyond necessary accompanying measures. This altogether justified the scheme's strengthening after 2006.

Greening the parking management initiative

The greening of the parking management initiative was achieved by adjusting the scheme itself and by enhancing it through traffic mitigation measures. In a context of increased pressure from the Green Party (see Section 3)⁹⁰, the overall system was strengthened as of 2006. By 2012 some small-scale adjustments were made to the price structure and accompanying measures. By then, parking management was explicitly charged with two additional overall objectives, alongside improving the parking situation for residents and commercial uses (e.g., deliveries, shop-owners) and the reduction of motorized traffic: generating more income for sustainable transport measures and a positive environmental impact. As a result, parking management now pursues two sets of objectives (Institut für Verkehrswissenschaften, 2013):

- Transport planning objectives, including 1) Incentivising short stays, 2) Increasing the turnover of parking spaces, 3) Reducing parking space occupation rates, 4) Reducing traffic searching for parking spaces, 5) Reducing double parking and parking in undesignated spaces
- Wider environmental objectives, including: 1) Reducing pollution (including noise pollution, emissions and particulate pollution), 2) Improving public realm and experience of public realm, 3) Improving life quality for residents, 4) Incentivising the modal shift from private motorised car to public transport

Adjustments were also brought to the initial scheme in order to strengthen its impact. First, the cost for a one-hour parking ticket rose from € 0.80 per hour – already considered among the highest in European cities with on-street parking charges (Transport committee on transport, 2005, 44) – to € 1.20/hour in 2006 and up to 2 € in 2012. Since then, residents of the districts with parking management can purchase an annual long-term parking ticket. Between 2006 and 2012, regular assessments have confirmed that the measure's main impact was the reduction of demand for parking spaces by 1/3rd, of parking space load and of traffic searching for parking space (Sammler et al., 2012). Second, modal shift between 2006 and 2012 justified the city's continued efforts to support public transport. Among non-residents trips towards areas where parking management was introduced, 49 per cent shifted to public transport or active modes, 22 per cent looked for their parking space in a district/area not charging for parking, 15 per cent parked in a garage and 11 per cent started carpooling (Ibid.)⁹¹. In the meantime, 56 per cent of non-residents trips towards these areas are now made by public transport (Ibid.). These results justified introducing accompanying measures, such as the dismantling of on-street parking and urban design initiatives, as part of the city's continued efforts to support public transport. More precisely, these measures aimed at prioritizing public transport, reducing traffic speed and enlarging sidewalks. This was particularly the case at intersections.

Furthermore, the city drew on federal legislation aimed at mitigating the impact of car traffic. This intensified after 2006: traffic speed limits were lowered on arterial roads from 60 or 70km/h down to 50km/h, and

⁸⁸ See description on the UNESCO World heritage website (op.cit.).

⁸⁹ Wipark website: <https://www.wipark.at/eportal3/> (last consulted January 2018)

⁹⁰ For the Green Party's traditional strongholds, see above (section 3, politics in Vienna).

⁹¹ See below about the regulation of carsharing services.

in 2006, a city-wide traffic limit of 50km/h was imposed (D3.2 Vienna report). Whilst a 30 km/h speed limit had been introduced on some 33km of the total road network by 1987 and remained primarily concentrated in the urban core, low speed restriction zones were systematically introduced following the adoption of STEP 1994. In 2013, this amounted to 1,502 kilometres that is, 58 per cent of the road network. Alongside speed limits, traffic calming measures were achieved through a series of urban design initiatives, including widening sidewalks reassigning road space for pedestrian use and establishing bus lanes. As summarized by an interviewee: *“Traffic calming measures were introduced. Road space was narrowed and safer intersections were built by taking away off-street parking spaces at intersections. A speed limit of 30km/h was introduced across the board barring the arterial roads”* (Interview Transport expert 1, March 2016, TbNB). The urban dimension of transport was continuously strengthened by the use of the parking management scheme as a backbone for a large set of initiatives to contain car traffic over ground. As confirmed during discussions in the CREATE project: *“During those years in Vienna, public transport was not a stand-alone measure. But high levels of public subsidies became an argument for other policies to be introduced, from the parking management to pedestrian areas”* (Presentation at CREATE workshop, Paris, April 2017).

Strengthening public transport through successive organizational reforms

Alongside the city's efforts to reduce congestion through parking management, public transport emerged as Vienna's major transport priority. This shift was first achieved through significant organizational reforms and the search for additional funding sources. This approach was briefly introduced as follows by Rudi Schicker, a prominent SPÖ figure, also one of the architects and promoters of the “Viennese public transport model”, during a talk⁹²: *“Ensuring the availability of public transport is one of the most important tasks for cities in the field of infrastructures. Therefore, Vienna is committed to have the Wiener Linien remain public and not privatized. This ensures mobility for all people in Vienna”* (translated from SPÖ Klub, 2011, TbCH).

The ruling majority found it increasingly difficult to justify high levels of debts in the context of shrinking fiscal room for manoeuvre. The Wiener Stadtwerke was split off from the city administration and transferred to a newly-established, joint-stock company in 1999. New subsidiary companies were created, including Wiener Linien, who took responsibility for public transport in 2001, and the respective roles of the city, acting as public transport authority, and the Wiener Linien, was incrementally redefined: whilst the former played a key role in setting long-term transport policy objectives, the latter gained increased autonomy over its effective implementation that is, route planning and speed, timetables, intervals, etc. From the city's perspective, the decision was also made to increase the use of public transport through higher levels of public subsidies. Rather than reducing the existing costs and services, the ruling majority sought to increase the city's general revenues and secure alternative funding. In exchange for continued support to public transport (and Wiener Linien), the 2001-2016 contracting period also introduced a series of measures aimed at ensuring greater accountability as well as to increase user friendliness. From the newly enterprise's perspective, this changed status fostered its reinvention as an integrated transport operator. An organizational public transport model seeking to bring benefits for travelers as well as economic benefits for the company was introduced. There again, the change was incremental and considerably increased after STEP 2005. From then on, efforts to increase mode shift also relied upon a marketing strategy that combined the development of information tools, with public engagement, advertising and enhanced customer service.

In parallel to these organizational changes, transport planning and capacity investment initiatives were combined to strengthen public transport supply. The aim was for the public transport network to cover the whole built-up area and to ensure that the entire Viennese population should be residing or working at a walking distance (less than 500 meters) of the nearest public transport stop. Rail-based networks were considered the backbone of the city's transport networks, and both regional railways and the metro benefited from continued investment and extensions (see Table 3). In the case of the metro, two main funding sources contributed to the funding of increased capacity investment: local payroll taxes were introduced in order to levy additional revenues at city level, and the Federal government also contributed to 50 per cent of the costs through its car tax system and fuel taxes. Existing metro lines were extended between 1993 and 2008 to offer city-wide direct access to all districts, and all underground lines started operating on weekends in 2010. As of 2005, planned developments

⁹² Rudi Schicker was City councillor for urban planning and transport between 2001 and 2010, and chairman of the SPÖ group in the Vienna Parliament.

across the Danube justified additional extensions to the public transport system, including towards the outer districts.

Table 3. Metro extensions between 1993 and 2008

1969	Start of underground construction work
1978	Completion of the core network for the metro line U1
1980	Completion of the first branch of metro line U2 to Schottenring
1981	Completion of the first branch of metro line U4
1993	Extension of the metro line U3 from Volkstheater to Westbahnhof
1994	Extension of the metro line U3 from Westbahnhof to Johnstraße
1995	Completion of the first branch of metro line U6 to Siebenhirten
1996	Extension of the metro line U6 to Floridsdorf interchange Handelkai with the commuter rail S45
1998	Completion of the first branch of metro line U3 to Ottakring
2000	Electrification of the route Sopron to Deutschkreutz
2000	Extension of the metro line U3 to Simmering
2006	Extension of the metro line U1 to Leopoldau
2008	Extension of the metroline U2 to Ernst Happel Stadion
2010	Extension of the metroline U2 to Aspernstrasse
2013	Extension of the metroline U2 to Seestadt

Source : Compiled from Verkehrsverbund Ost-Region, 2016.

Yet the division of tasks between over and underground transport was also redefined as a result of Wiener Linien's own evolution. Since its creation in 2001, this transport company self-defined its role as an integrated transport provider. A comprehensive set of measures aimed at making buses and trams attractive again. Capacity investment varied according to levels of density and estimated growth by 2010. In those areas where no metro extensions were planned, bus services were reorganised and increased by 31 per cent. Tram lines extension remained limited. Traffic speed and public transport reliability was mainly increased by prioritizing public transport over motorized traffic. This was particularly the case at intersections and investment was made in order to segregate road space from public transport routes where possible. A dynamic automated traffic signalling system was introduced as a test bed in 1995 and by 2010, the system was extended to the entire surface transport network. Higher frequencies were introduced, including during off-peak hours and the night bus lines network was reorganized. The development of surface public transport networks was particularly pronounced outside the city centre, in order to increase accessibility in outer districts. Following the introduction of STEP 2005, attention shifted away from quantity towards greater comfort and environmental impact. A large share of the bus fleet was switched to natural gas in 2003 and also increasingly addressed accessibility issues. In addition to these adjustments, increased efforts were made to strengthen the regional dimension of public transport. There again, the role of federal organizations and legislation was instrumental in providing increased resources and opportunities. Following the creation of an integrated Federal ministry in 2001, local authorities were incentivized to enlarge and strengthen the regional transport association in support of public transport initiatives. There again, the capital-city region acted as a frontrunner with the VOR's reach being extended to the adjacent province of Burgenland. It took over the management responsibilities of the Verkehrsverbund Niederösterreich Burgenland (VVNB) and aimed at *"providing a more integrated transport offer and fare structure for the 3.7 million residents in the region"* (BMVIT, 2016).

Assessing the city's strategy from a governance perspective

Together, these initiatives fostered the emergence of the "Viennese approach to public transport" (Kostal et al., 2012). They considerably enhanced the attractiveness of public transport in Vienna. Between 1993 and 2010, the public transport supply increased from 11,8 to 12,4 million seat-kilometres. Towards the end of the period, the modal split for trips by public transport had risen by 20 per cent between 1991 and 2010. In 1991, on an average weekday the share of trips taken by public transport was 29 per cent this rose to 35 per cent by 2010. Within this metropolitan-wide system, the Wiener Linien network rapidly emerged as the backbone of the regional transport association and now transports up to 90 per cent of annual passengers' journeys. The number of passengers using the VOR regional public transport system rose by 22 per cent between 1990 and 2012 (Bühler et al., 2017). From a governance perspective, both policy tools – parking management and public transport reform – were instrumental as part of the SPÖ's strategy to redefine its political leadership in a rapidly evolving socioeconomic environment. In view of the Green Party's continued push for a sustainable approach to urban transport, the combination of both tools offered some opportunities to incrementally integrate their demands. Furthermore, the parking management initiative primarily drew on the city's political resources and ability to impose this transformative measure across districts and social groups, the strengthening of public transport mainly drew on financial resources and the ability to maintain political leadership over the pro-public transport

community. As summarized from a critical point of view in the following quote: *“The good old public transport approach triumphed. There is nothing really innovative about it, nothing about awareness raising for example. And at the same time, the parking management system allowed traffic to flow”* (Interview Transport expert 3, March 2016).

4.3.4 Recurring transport controversies as a challenge to the post-1991 consensus

Regardless of the results achieved in promoting mode shift and taking cars off the streets, the ruling majority's transport strategy met with a growing variety of criticisms. This is partly resulted from transport issues being instrumental in a context of unprecedented levels of political competition. Yet these claims also highlighted the contradictions inherent to the city's strategy, which are very much captured in the following quote: *“the idea was – and still is – that congestion at peak hour is acceptable, otherwise, that road would not have been built. The policy follows a simple idea: if you want to take a car, you have to be able to travel quickly. But then the city also needs to offer strong alternatives”* (Presentation at CREATE workshop, op.cit.). Representing the interests of a large variety of stakeholders, they confirmed the growing salience of transport politics and highlighted the ruling majority's growing difficulties to integrate this large variety of claims through existing forms of governance.

Is it worth the cost, is it worth the effort? A large number of disconnected demands

Criticisms against the post-1991 consensus led, towards the end of the period, to a growing number of claims related to the city's strategy or its impacts. These demands, originating from a variety of stakeholders, culminated during the 2010 municipal election campaign.

First, commuting traffic from across the city's border was now considered to be a major source of political and social concern. As the region benefited from an increased influx of population from the rest of Austria and neighbouring countries, the existing public transport and road network in Vienna under growing pressure. The City of Vienna – and more particularly, the inner-city districts – were criticized for shifting congestion and other negative externalities of car use towards the outer districts and the neighbouring province of Lower Austria. In the absence of effective land-use regulation on both sides of the city's fringes, additional feed-in routes or park-and-ride facilities were needed. Local authorities adjacent to Vienna regularly highlighted the city's insufficient efforts to develop park-and-ride facilities – 14 were developed between 1994 and 2014, with some 9.035 parking lots⁹³ – which in turn resulted to shifting the burden outside the city's borders. By contrast, a number of stakeholders in Vienna raised their concerns about the long-term impact of the city's strategy on congestion and constraining car use in the absence of a city- and metropolitan-wide strategy.

This discussion also linked with on-going discussions about the efficiency of parking management as a tool. It was often depicted in public debates and expert inputs as a catch-all policy instrument, whose own effects disconnected from all other transport measures adopted in public transport since 1993, were almost impossible to assess (Interviews City administration, February 2016 and Transport expert 2, April 2016). It was widely acknowledged as a tool aimed at addressing road congestion, but its effect on car use reduction and mode shift towards non-motorized transport was questioned. This was further confirmed during discussions within the CREATE project: *“It is primarily meant as a tool to reduce congestion. And in effect, traffic flows freely in Vienna, with no excessive delays”* (Paris, March 2017). The amount and uses of parking revenues only contributed to a limited extent to financing public transport and sustainable modes. More fundamentally, the scheme did not lead to significant reallocation of road space to other users, with the exception of the 1st district. Furthermore, the design of the parking management scheme and its implementation in a consensus-seeking political environment, increased opportunities for stakeholders at district level to resist its further expansion or to successfully negotiate exemptions. The evolution of the overall car parking demand and supply was regularly highlighted in order to exemplify the tool's limitations: car parking demand continued rising within the city as a whole, as did investment in public- and private-owned garages and park-and-rides: the number of off-street public parking lots in garages accessible to the public grew from 39,625 in 1997 to over 90.000 parking lots divided between 272 garages in 2014 (D3.2 Vienna report).

⁹³ See D3.2 Vienna report, Graph p.19.

A third series of criticisms relates to the effective capability of the city administration to monitor the work achieved by Wiener Linien was also regularly questioned. Organizational reforms did not lead to increased transparency in the daily operation of the public transport system and the selection of preferred options (e.g., route planning, frequencies, etc.). More than ever, Wiener Linien – and more generally, the Wiener Stadtwerke – was compared to a “state in a state”, which increasingly sought to pursue its own interests. In effect, differentiated forms of decision-making derived from these organizational reforms: on the one hand, increased efforts to engage a wider range of stakeholders and the public in the setting of policy goals, and on the other hand, a perpetuation of the former corporatist form of policy-making at implementation stage, with the city administration linking through its utilities companies, with economic interest groups (Chamber of Trade and Industry), workers’ representatives (Federal Chamber of Labour, Wiener Linien’s works council) and users groups. Resistances from the public transport sector were regularly mentioned in order to account for the limited development of cycling facilities and for the difficulties encountered in implementing shared space principles. Pro-cycling organizations were particularly critical of the post-1991 consensus, which offered very limited scope for developing cycling. In spite of Mayor Häupl’s efforts to accommodate their demands through small-scale adjustments to forms of transport decision-making and the range of cycling initiatives, their effective ability to strengthen the role of cycling in the city’s transport system remained limited. By contrast, a series of flagship measures were introduced, such as a bike sharing system in 2003 and a citywide car sharing system⁹⁴. In this context cycling organizations still relied on attention-seeking forms of mobilizations in order to channel their demands.

Transport controversies: ÖVP and the Green Party as policy entrepreneurs

Drawing on these criticisms, political parties in the opposition took the opportunity of the 2010 municipal election campaign to promote alternative transport policy solutions. Two major transport policy controversies shaped the 2010 municipal electoral campaign and contributed to the politicization of transport issues: about the night traffic on the U-Bahn and about the city-wide congestion charge.

First, an ÖVP-led proposal, championed by the Young Conservatives’ leader, aimed at introducing night traffic on the U-Bahn in order to lower emissions. Night traffic had already been introduced in 1986 through bus services, and thoroughly reorganized and extended in 1995. The Conservatives received the support from the Green Party on this issue, who argued the cost of running the service represented a good investment. By contrast, the City, together with Wiener Linien and police forces, argued that night bus services sufficed and highlighted that the costs of night traffic on the U-Bahn would be significantly higher. Last but not least, the FPÖ suggested finding a middle way in order to extend the operational hours of the U-Bahn to 2am while using the budget to densify the public transport supply on the edges of the city (Wiener Zeitung, 2009; Heute news 2010). Discussions were framed around the issues of costs, security and performance of the public transport network. In the end, the ruling majority resorted to using a referendum in order to seek citizen’s opinion, and the night traffic on the U-Bahn was accepted with a majority of 54 per cent (Heute News, 2010). Its implementation was delayed due to staff’s resistances within Wiener Linien and police forces, as this initiative implied a profound reorganization of the extensive night bus network. As of now, it offers extensive mobility options at night-time on weekends for a total cost of some €10.7 million per year from the city’s budget (Die Presse, 2010)⁹⁵.

A second proposal stemmed from the Green Party. Although they did not aggregate all demands about transport, the Greens joined together with ecologist and pro-cycling organizations in order to promote an alternative to the post-1991 consensus. Together, they pushed for a comprehensive, citywide sustainable urban transport agenda. This included both strengthening restrictions on car traffic and increased support to public transport. Cycling organizations advocated the city’s cycling policy objectives or “Cycling 2000” to be effectively implemented through added investment and repeatedly highlighted the number of opportunities offered in the context of the post 1991 consensus. Highlighting the benefits of the parking management system for increased fluidity in traffic flows, they recommended targeting cyclists through dedicated investments on road space aimed at enhancing traffic fluidity for cyclists, through traffic signalling, new road traffic regulations and a seamless cycling network. They also shared their concern for the limited benefits gained from urban design initiatives on major streets in the inner-city. Drawing on initiatives underway in Paris and Copenhagen, they promoted the idea of “car-free neighbourhoods” in order to ensure maximum levels of safety and foster alternative street-uses. This

⁹⁴ Today the four most important car-sharing operators are DriveNow, Car2go, Zipcar and Flinkster.

⁹⁵ As opposed to €7 million for running night bus services prior to the referendum.

approach drew, to some extent, on the work achieved at Federal level within the cycling lobby in order to promote a “gentle mobility” approach that included reframing cycling – and to a lesser extent, walking – as transport modes, reducing road space devoted to car uses, and strengthening the urban dimension of transport through urban design initiatives.

With respect to restrictions on car use, ecologist groups and the Green party drew on policies implemented elsewhere in Europe, such as low emission zoning in Berlin, in order to highlight an alternative strategy to the one pursued in Vienna. One of our interviewees summarized this view as follows: “*There was also an awareness early on that whilst this policy did reduce the attractiveness of the private car, it did not address the environmental friendliness of the car, meaning that it did not encourage the uptake of more environmentally friendly transport modes or technologies*” (Interview Transport expert 3, March 2016). In the context of the 2010 municipal election campaign, they suggested introducing a congestion charge (*CityMaut project*) in order to further reduce car traffic and ensure greater revenues in support of sustainable urban transport measures (Furst, Dieplinger, 2014). In this case, it received no support from other political parties and was discarded as a “false good idea” in a number of expert interviews⁹⁶. There again, a referendum was organized, leading to the initiative being rejected by over 75 per cent of the electorate (out of a voter turnout of 36 per cent) (Die Presse, 18/01/2010). During the rest of the campaign, the Green Party continued singling out transport in their manifesto. They advocated an expansion of the parking management scheme towards outer districts, the development of fast trams into the surrounding areas and a public transport reform with cheaper ticket prices. These transport controversies highlighted the growing difficulty of SPÖ, the City administration and the pro-public transport coalition to contain demands stemming from those advocating a more sustainable approach to urban transport.

4.3.5 Concluding remarks, integrated approach

Transport policies underwent profound changes between 1991 and 2010 and somewhat contributed to strengthening the urban and regional dimension of transport. Mainly framed into debates about congestion and accessibility, these initiatives combined car use initiatives together with massive efforts in support of public transport. Another distinctive characteristic of transport policy developments in Vienna lies with the need to preserve the urban core’s historic heritage while at the same time, strengthening the city’s central location as a European hub. Debates about the parking management initiative and successive adjustments brought to the initial scheme capture the contradictions inherent to these city planning goals and the ways through which local elites are pushed to develop innovative strategies in order to overcome political and social resistance. When considered in the framework of the CREATE transport policy cycle evolution, these developments confirm the dominant role of stage 2 thinking throughout this third sequence and the role of multiple barriers against the emergence of a sustainable urban transport agenda (stage 3). Yet at the same time, and when focusing on travel behaviours in Vienna only, there was a continued mode shift away from car use.

Throughout this sequence, the overall urban governance system was increasingly challenged, and in transport, this led to continued issue salience. There was raising concern regarding this urban growth model’s unsustainability. More specifically, the idea that combining added public transport capacity and parking management would not be sufficient in order to maintain high quality services and urban life found a growing echo among the local population and political party system.

4.4 Current challenges and future perspectives: towards a sustainable transport agenda

Unlike previous sequences, recent transport policy developments in Vienna have been primarily shaped by debates and controversies taking place at city level and less so by Federal transport politics. At Federal level, transport priorities still focus on a pro-growth agenda and the strengthening of traffic mitigation measures, whereas at city level, the urban dimension of transport was incrementally strengthened in the context of increased political competition. Following the 2010 elections, the Green Party became a coalition partner in the ruling majority and Maria Vassilikou, head of the local Greens, was nominated vice-mayor and deputy mayor for urban development, transport, energy and citizen participation. Since then the Green Party has been pushing for

⁹⁶ See for example an interview of H. Knoflacher, one of Vienna’s leading transport expert at the Technical University: “*In reality, we already have a form of city toll, just not in the way that electronics companies would like it be. Of course, they have the greatest interest in promoting their things*” (Die Presse, 11/01/2010, TbCH).

greening existing policies and introducing a comprehensive sustainable transport agenda (stage 3). This will be successively addressed in the following section.

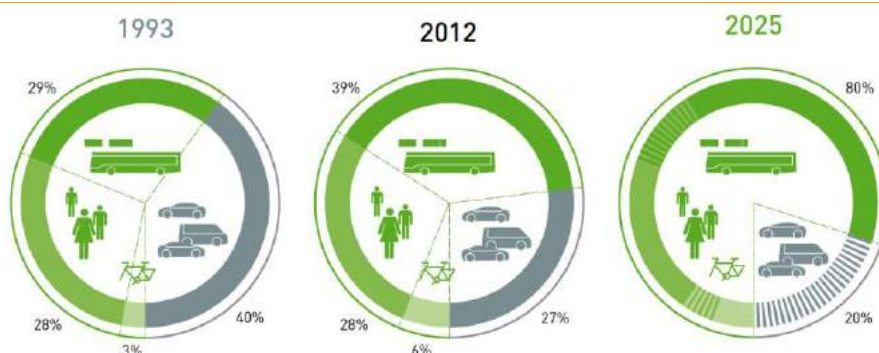
4.4.1 The implications of the Smart City agenda for transport planning

The latest urban development plan, the Stadtentwicklungsplan 2025 (STEP 2015), was adopted in 2014. Drawing on the expertise gathered during preparatory works, it identifies the key drivers shaping urban growth in Vienna as well as the region's resources to address new challenges. Two major sources of constraints are considered in this policy document in order to justify a changed approach to city planning and those policy areas pertaining to the federal state's smart city agenda. First, it confirms population growth estimates – a total of 1,8 million in 2012, 2 million expected sometime between 2024 and 2029 – and highlights the need to adapt city planning principles in order to maintain high levels for quality of life. More precisely, the city plans with a yearly increase of 25.000 people and 10.000 housing units. This justifies the introduction of the liveable city agenda and as part of it, specific targets related to the protection of green spaces, attracting businesses, housing developments and last but not least, mobility management. Whilst the need to protect the Wienerwald and ensure sufficient access to green spaces, a few urban development areas are singled out in this policy document, among which the main station (Hauptbahnhof), Aspern Seestadt and the Danube City. In terms of the concrete tools brought forward in order to achieve these ambitious goals, the policy document suggests combining new technologies – or smart city solutions – together with land-use regulation – or densification strategy. Furthermore, it also indicates a shift in policy processes, with the city now going beyond its role as rule-maker in order to actively oversee implementation: “set a framework mainly through rules, principles and processes” (Stratil-Sauer, 2015, 6).

The Urban Mobility Plan Vienna (or Vienna's SUMP)

This spatial planning document also sets out an action plan for mobility, adopted a year later in 2015, which specifies the role transport plays in achieving these objectives. In regards with transport issues, this policy document results from a new compromise between, on the one hand, the Green Party and the SPÖ, and on the other hand, between representatives of three transport policy coalitions – pro-car, pro-public transport and pro-cycling. First, the document suggests replacing the integrated transport approach with an integrated mobility management approach. New transport policy objectives are introduced, aimed at further reducing the role of the car and strengthening the “Green alliance” (Umweltverbund). For the first time, the city's transport strategy clearly states that building new roads is not a priority anymore. Furthermore, the focus is not solely on public transport as the main alternative to car use, but on strengthening cooperation between all three sustainable transport modes: together, public transport, walking and cycling amounted to some 72 per cent of the modal shift in 2014 and this policy document sets an objective to reach a mode shift of 80/20 by 2025 (see Figure 2a). In order to do so, the Urban Mobility Plan highlights the need for new ways to negotiate effective implementation by district administrations and the Wiener Linien. This is justified as follow in the case of the public transport company: “like any other stage 3 city in CREATE, we are struggling a lot as a city, we see that. They don't like cycling, walking and all these soft measures. But they make their own goals now, they don't take our goals as such. ... We need to do it with them, together, and sell mobility choices in one hand. We cannot do it without public transport” (CREATE workshop, Paris, April 2017). The notion of “partnership control” (*partnerschaftliche Steuerung*) captures this evolution and echoes the above-mentioned concern for the city's changed role at implementation level (Stratil-Sauer, 2015, 18-22).

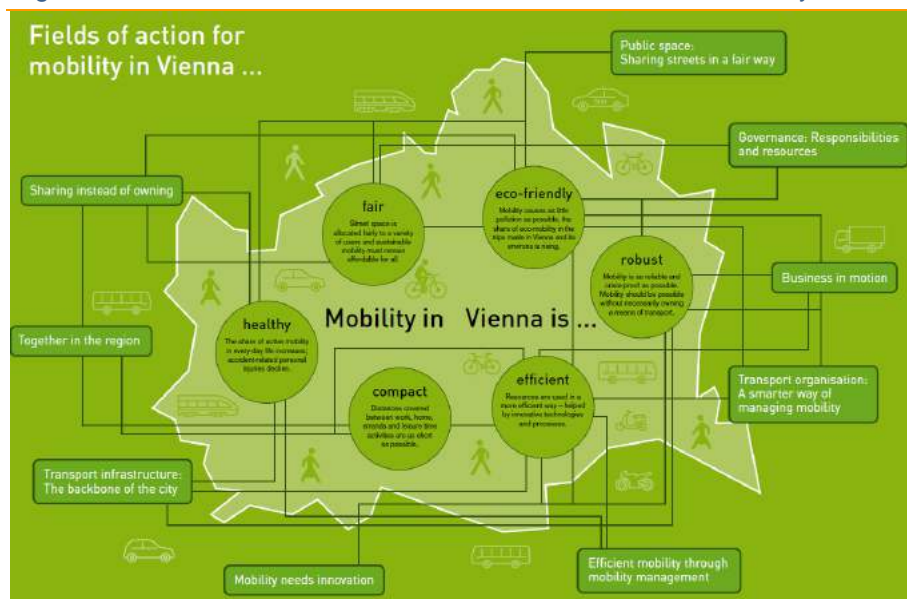
Figure 2a. Modal shift goals by 2025: The Green alliance



Source: retrieved from Urban Mobility Plan Vienna, 2015, p.6.

In order to achieve this goal, Vienna's Urban Mobility Plan relies upon different strategies or "fields of action" (see Figure 2b): first to contain car use and congestion through parking management and reduce its negative externalities; introduce technology-led optimising solutions on the existing network as part of Vienna's smart city's agenda; strengthen the urban dimension of transport policies citywide, and not only in the urban core, through the development of urban design initiatives. More precisely, it includes some 50 measures and seeks to strengthen sustainable mobility policies across transport modes and users' groups. From a political perspective, this document highlights the need for a new compromise between private motorization and sustainable modes, thus suggesting using the city as a laboratory in order to experiment between 2010 and 2014 – a period corresponding to the Green-SPÖ's first term as a coalition government – before expanding and systematising those that have proved effective. In other words, tools aimed at reallocating road space to other users and dismantling parking spaces are yet to be invented, financed and enforced.

Figures 2b. Fields of action as identified in the Urban Mobility Plan Vienna published in 2015



Source : retrieved from Urban Mobility Plan Vienna, 2015, p.6.

Regional travel demand as the new frontier

STEP 2025 also confirms the regional dimension of spatial planning objectives. Developments underway in the outer districts and outside the city's borders are considered a source of concern. Similarly to other cities under study in WP4, the modal shift for Vienna and for commuting traffic from surrounding areas are the opposite of one another: 28 per cent for motorized individual transport versus 72 per cent for sustainable modes (walking, cycling and public transport), whereas, 79, per cent of daily commuters travel per car as opposed to 21 per cent for public transport. Furthermore, this commuting traffic is rapidly growing, with an increase of 14 per cent since STEP 2003. Taking a long-term view, STEP 2025 frames transport issues in a regional perspective. Some urbanization trends result from new economic and employment centres, which were built within Vienna's borders. As part of post-2008 pro-business and -growth agendas, land use regulations have been weakly effective. This, in turn, encourages low density, car friendly developments at the city's fringes. As specified by our interviewees: *"The economic interests are discouraging the politicians from intervening. There are strong links between politicians at the city and state level, and industry... These out of town employment centres are not that well connected by public transport, more easily reached by private car and often have parking on offer for free"*. (Interview public transport expert 1, March 2016, TbNB). Indeed, increased incoming commuting traffic is also explained in relationship with low-density urban developments and demographic change in surrounding localities⁹⁷.

⁹⁷ For an overview of developments taking place in the metropolitan region across a number of issues (demographics, transport, economic development etc.), see the online information tool provided by the city-regions' website: <https://www.stadtregionen.at/wien> (last consulted February 2018)

Even though some efforts were made outside Vienna to designate urban development areas and densify existing settlements, suburban settlements are increasingly car dependent and existing public transport supply often fails to provide a strong alternative in low-density settlement areas. Several factors account for this: higher levels of car ownership, the large spread of company cars and scarcer public transport access. This is further illustrated in the following quote: *“For example in Mödling, located South of Vienna in the surrounding province of Lower Austria, car ownership levels are twice as high as in Vienna. This causes serious problems for commuting traffic. Work and educational commuting car travel takes on twice the mode share that public transport does and when considering remaining travel, such as leisure, shopping, etc., there is gap of 10 to 1. ... On the city’s borders, the overall distribution is of 4 to 1”, (Ibid.).* Although most areas within 30km around Vienna have good public transport access from their respective urban core, this does not incentivize them enough to shift to public transport. Our interviewee continues: *“The problem lies in the details: even when residents can access the public transport network, this may not be that direct a connection with their final destination in urban Vienna. The financial backdrop also factors into suburban travel patterns. Nearly half of the car fleet are company cars, so that commuters travel cheaply by private motorised transport. It doesn’t cost them anything. When commuters need to cover for their travel choices, they tend to favour public transport options in high numbers”* (Ibid.). In regards with commuting traffic, STEP 2025 recommends increased public transport offer and reducing travel demand within the metropolitan area through land-use regulations. A transport strategy was developed in 2015 at the metropolitan scale (Stadtregion +) together with the federal state, the 3 provinces, VOR, ÖBB and ASFINAG (primary road network operator). Several options are currently under study in order to strengthen public transport networks, including regional railways, developing light rail lines or tramway lines and in low density/rural areas, increase “last mile” connections through bus lines, cycling and car-sharing.

The implementation of STEP 2025 and the 2015 Action mobility plan is underway, but analysing the selection of concrete tools through which the red-green majority proposes achieving these goals helps understand the shift towards City for life type of policies (stage 3). A key policy has been the reduction in the annual public transport ticket price alongside the continued expansion of parking charging and a target effort to improve the city for cycling and walking through the establishment of the Mobility Agency. By contrast to the previous sequence, transport controversies were more pronounced and highlighted the new ruling coalition’s attempts to openly challenge the role of the car through flagship measures rather than seeking for a compromise.

4.4.2 Greening existing transport policies: old wine in new bottles?

In the context of the liveable city agenda, pre-existing transport policy tools were continued but in combination with a bundle of sustainable and technical-led initiatives aimed at strengthening the urban and environmental dimensions of transport. Public transport and parking management are successively addressed in the following paragraphs.

Strengthening public transport: combining supply and demand factors

In line with policies pursued since the early 1990s, the priority given to public transport was confirmed even though it was combined with new efforts to combine its developments with active modes. The political target set for the mode shift was to reach a 40 per cent mode split for public transport by the end of the electoral period, which was in 2015. The base line in 2012 was 36 per cent. Increased support to public transport was critical to both coalition partners, and instrumental in order to ensure Wiener Linien’s support in order to develop active modes. To this end, Wiener Linien further expanded and strengthened a number of initiatives, among which was prioritizing public transport at intersections. This policy principle was made operational by strategically tapping into the resources made available for the smart city agenda and with the support of MA53, who now played a significant role within the city administration for all transport related issues. Prioritizing public transport at crossroads was achieved through citywide extension of traffic lighting technologies, which now concerned both tram and bus networks (Magistratsabteilung 53, 2015). Other initiatives included expanding existing public transport systems through new infrastructures and systematically draw on new technologies in order to optimise existing systems and develop new services citywide. Further investments were made in order to increase the number of segregated public transport lines. Together, these initiatives resulted in higher travel speeds and the network’s overall reliability.

Strengthening public transport supply was not, however, considered sufficient to achieve mode shift away from car use and **the red-green majority embarked on a strategy aimed at incentivizing demand through the fare policy.** The most visible – and hotly debated – change in public transport since 2011 concerns the fares structure and the city’s increased financial commitment to support public transport. The Green Party had

been supporting the reduction of the season ticket price for some time, as a preferred way to incentivise a mode shift towards public transport (Der Standard 2011). A “€ 1 per day” annual ticket was introduced in 2012 that is, at an overall cost of €365 per year for unlimited access to public transport. This represented a significant reduction from the previous price⁹⁸. A number of observers highlighted this decision’s political nature. As commented during discussions about the Vienna case in the CREATE project: *“They made a promise. If we are elected, we will reduce the price of the Public Transport annual ticket price. They did it, and just like that, they increased the shift towards public transport. They did a huge promotion campaign around it. This also was unprecedented. And then, they did it. Wiener Linien just had to cope with this: the financial impact and unexpected increase of passengers”* (CREATE workshop, Paris, April 2017). This price is indeed disconnected from operating costs. It is also significantly lower than the price for season tickets in Swiss or German cities (Buehler et al., 2017)⁹⁹. In regards to this initiative’s financial dimension, this policy’s cost was estimated at €25m to €30m. It was not funded by higher parking charges but instead by higher subsidies from the City of Vienna, which now subsidizes public transport operation by 40 per cent, that is some € 500 million per year. By contrast, only 55 per cent of the operating costs of the city’s public transport operator Wiener Linien are covered by passenger fares (Kostal et al., 2014). From a political point of view, a high subsidy cost of providing public transport to the city and the individual via the low-price tag of the annual ticket to the user was to be taken as a clear indication of the value the City of Vienna ascribes to a high public transport mode share and providing frequent, comprehensive public transport. Albeit being advocated as part of the Green Party’s agenda, this measure was also consistent with the traditional SPÖ-ÖVP approach for enhancing public services, including public transport, through the local welfare state. Yet, some concerns were voiced by advocates of a more managerial approach to the management of public services, highlighting the city’s entire transport strategy being dependent on its future ability to maintain such levels of subsidies¹⁰⁰.

Furthermore, maintaining lowest possible fares was considered counter-productive in terms of reducing the overall travel demand on the one hand, and on the other hand, ensuring compliance from transport companies to commit with the city’s demands. Apart from being a hotly debated political issue among political parties, this initiative was not welcomed by Wiener Linien. It was often used as an argument in negotiations with the city for justifying its inability to meet with requirements in terms of transport supply and quality standards (Interview City administration, February 2016). As part of preliminary negotiations on the 2017-2030 service contract, Wiener Linien had been advocating for increases in all fare categories. Discussions with Wiener Linien prior to the €1 per day ticket led to a number of adjustments that confirm the pivotal role of public transport in securing support from various social groups and political clienteles in the context of rapidly evolving urban politics. The fare structure strictly differentiates between residents and short-term visitors (e.g., tourists, business trips, commuters etc.), with increased fares for shorter-term tickets such as the daily pass or weekly pass. (Der Standard, 2011). By contrast, specific age groups, such as senior citizens, among which the mode shift is particularly encouraged now benefit from additional discounts with the support from both local and federal subsidies. Furthermore, higher penalties of €100 (previously €70) for using the public transport network without a valid ticket were also introduced alongside the reduced annual and monthly passes.

During the 2015 municipal elections campaign, a number of transport debates focused on assessing this measure’s impact, thus **highlighting again the instrumental use of transport policy measures in political and experts’ debates**. The Green Party positively assessed it as a consequence of the public transport’s attractiveness: *“Measured by the uptake in annual pass holders the fare reduction has been as success. The number of annual pass holders has risen from 350,000 to 650,000 today”*. (Vassilakou, 2015). Policy evaluations showed that only four years after this policy was introduced, 368 out of 1000 Vienna residents had purchased an annual pass, a rapid increase that contrasted with the steady yet low increase in annual pass uptake between 1995 and 2010. This was confirmed as part of the work done in WP3 in the CREATE project. In 1995, only 15.5 per cent of Vienna’s residents had an annual season ticket for the public transport service. Until 2010, the annual pass ownership base grew steadily by 2.4 per cent. In 2011, 21.9 per cent owned a yearly ticket and since then,

⁹⁸ €449 per year or €458 if paid in monthly instalments.

⁹⁹ These authors further highlighted the disconnect, from GDP per capita: 0.8 per cent of GDP per capita in Vienna versus 1.1 per cent in Munich or 2.5 per cent in Berlin (Ibid.)

¹⁰⁰ Without such high levels of subsidies, the price of the annual public transport ticket would probably double (Interview, City administration, op.cit.)

its share has increased regularly¹⁰¹. Yet within the red-green majority, there also was some criticism regarding the limited impact of the €1 per day ticket on the overall travel demand and the promotion of active modes. A number of experts highlighted the fact that most assessments were produced in-house and that more diversified expertise was needed (Interview City administration, February 2016).

Discussions within Vienna about this demand-oriented strategy have recently gained a regional dimension. As of July 2016, a new, in places significantly more expensive, fare structure was introduced in replacement of the zonal fare structure that had been in place since 1984 within the VOR jurisdiction¹⁰². By contrast, the Green Party suggested extending the reach of the €1 per day ticket to the wider metropolitan region in order to develop strong sustainable transport alternatives for those commuting to Vienna¹⁰³. In this respect, it actively seeks to lobby stakeholders in the VOR and Federal administrations and agencies, among which is ÖBB, in order for the annual ticket to be valid for the rail network beyond Vienna. This proposed scheme met with recurring opposition from the Conservative Party (ÖVP) as part of their strategy to position themselves at the pro-automobile lobby's champion. Following a slightly different argument, the FPÖ, who gained significant vote shares in the region since 2015, focuses on the interests of those living at the fringes of the city, on both sides of the border. During the federal legislative and presidential campaign, the City's insular strategy was further criticized in political discourses and the media. This quote from the national daily Newspaper *Der Standard* exemplifies this trend¹⁰⁴: *"The ÖVP claim the Green Party are attacking the motorists and their necessary trips and dreaming about the possibility to meet transport demand and needs with public transport"*. (Der Standard, 2016) Furthermore, their national representatives increasingly questioned the viability of the € 1 per day ticket from an economic perspective, highlighting the capital-city's expensive policies in contrast with what neighbouring provinces could afford to cover for. Whilst repeatedly highlighting the regional transport alliance's benefits for Vienna in terms of congestion reduction, political discourses outside Vienna questioned the rationale for adjacent provinces to subsidize the reduced annual ticket.

Mixed results in attempts to strengthen and expand the parking management scheme

Strengthening the parking management scheme and efforts to expand its reach proved altogether more controversial for the red-green majority and met with a number of setbacks. On the one hand, the new majority drew on past debates about parking revenues in order to further link the parking management scheme with the urban sustainable transport agenda. The existing scheme was strengthened, with the one-hour parking ticket price increasing from € 2 in 2012 up to €2,10 in 2017. These adjustments have led, over time, to a significant increase from parking revenues, from € 66 million in 2010 to €110 million in 2015. When adding, respectively, €34 million and €62 million for penalties, this resulted into increased revenues for sustainable transport measures that are divided between public transport – some €117 million for Wiener Linien in 2015, and the rest between projects aimed at promoting safety, cycling or building new garages and parking (Der Kurier, 01/02/2016). On the other hand, adjustments brought to the parking management scheme also aimed at addressing residents' demands. Exclusive residential parking lots were introduced from 2014 onwards in order to ensure a vacant parking lot for residents in those areas, where the demand for short-term parking is too high and in view of increased car ownership. This in turn confirms the parking management tool's dependency to political forms of micro-management at district level as well as its limited impact on car use and ownership restrictions.

Meanwhile, the possible extension of the parking management scheme towards outer districts has been under discussion. Due to strong political and social resistances against the introduction of the "Parkpickerl"¹⁰⁵, its extension took place incrementally and gave way to further forms of micro-management at district, and sometimes neighbourhood, levels. In 2012, parts of Districts 12, 14, 15, 16 and 17 joined the scheme (see map 7b above). In order to overcome local resistance, an idea was to propose implementing only a parking charge for short-term parking that is, for 1.5 hours, in specific segments. The process was carefully monitored from within

¹⁰¹ See also D3.2 Vienna report, p.31.

¹⁰² See section 3. More precisely, passengers now pay for a multimodal fare from their start point to their destination, which is calculated based on a combination of the route, distance and jurisdictional boundary.

¹⁰³ The price tag that the Green Party estimates for this new fare structure is €9-15m per year. (Vassilakou, 2015).

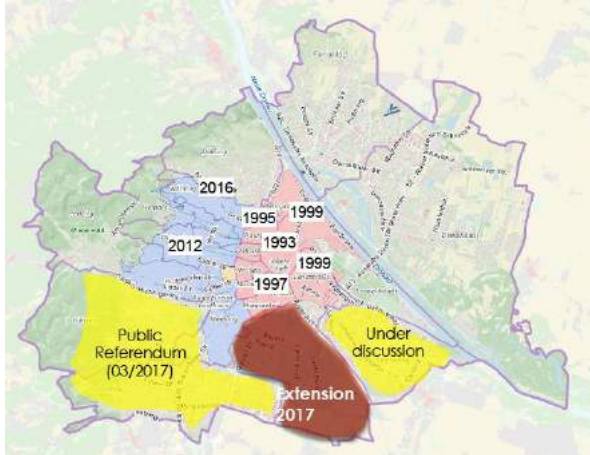
¹⁰⁴ It is usually considered to reflect social-liberal views.

¹⁰⁵ This is the colloquial name for *Parkraumbewirtschaftung*.

the city administration in order to assess the impact of parking regulation and identify possible extensions to the rest of the districts or to other outer districts. A basis was provided by a study produced in 2013, which showed that the parking provision and general traffic situation had significantly improved in those areas. (Magistrat der Stadt Wien, 2016a). Similar to the changes observed in other districts, this study recorded a reduction in the demand for parking spaces, a modal shift from car to bus and rail, and a reduction in car numbers by approximately 8,000 on weekdays. This was particularly the case among non-residents: before the introduction of the charge, a fifth of parking spaces were occupied by cars without Viennese registration plates. Since the parking is charged this figure has dropped to 3 per cent. (Magistrat der Stadt Wien, 2016d). Drawing on these findings, a commission of experts developed a new parking management scheme better suited for travel demand in outer districts.

Yet further expansions have raised some resistance in the ÖPV's traditional strongholds (e.g., districts of Hietzing, Währing und Döbling) and among the Austrian Automobile club (ÖAMTC) on both sides of the city's borders (see also Bühler et al., 2017). Whilst the former's views diverged regarding which accompanying measures should be introduced – parking lots for residents, park-and-ride facilities etc. – the latter recommended introducing a “green zone” in areas located outside the Wienerwald, in which parking costs would be introduced but not on a short-term basis. In the inner city and the Josefstadt, also in the hands of ÖPV, a demand for a 50-per cent quota for parking spaces for residents was successfully submitted to the commission on parking regulation. Public referenda held in 2017 led to mixed results (Map 7c), and as of now, the city administration proposes extending the scheme city-wide as an experiment and seeking for ex-post approval in those districts (per public referendum or decision within the district council), provided specific demands are taken into account through small-scale management. Following the district council's decision, respectively in May and December 2017, future extensions will take place in June 2018 in Hetzendorf, which is part of the 12th district (Meidling), and Döbling (19th district). By contrast in Simmering (11th district), also an area where housing prices are lowest, the decision was made by referendum (held in early 2018) and led to adopting the parking management scheme in the district's urban core, while rejecting it in new urban developments. More generally, these examples highlight the difficulties attached to extending this policy tool. As of today, it has been introduced in 17 districts out of 23 districts. **Among practitioners, subsequent adjustments and the growing number of exemptions raise some concerns regarding this policy's overall coherence at city-level.**

Map 8c. Current debates about parking management extensions (as of April 2017)



Source: Roeder & Klemensitz, presentation prepared for CREATE worksop, Paris, April 2017.

Regulating mobility services as part of Vienna's strategy for the sharing economy¹⁰⁶

As part of the changes brought on by the Urban Mobility Plan, the City also strengthened its regulatory role in the context of rapidly developing new mobility services, including initiatives stemming from the private sector. Additional costs of owning and using a private car did not necessarily imply a reduction in car use as such. Studies assessing the impact of parking management on car use showed that some 11% of car users started

¹⁰⁶ These paragraphs draw on research input provided by Gabriela Neves da Lima, during her internship at Sciences Po, CEE, during the Spring semester 2016.

carpooling (Sammler et al., op.cit.). As of 2018, a number of car-sharing companies operate in Vienna, mainly stemming from the German car industry¹⁰⁷, and have been promoting hassle-free parking and fuel efficient vehicles in order to attract new customers. Yet the arrival of Uber led the City to strengthen its regulatory role. In view of rising protest from the taxi industry, which maintains close tie with the SPÖ's, the Department for Transport in the Vienna Chamber of Commerce and the chairman of the taxi and car rental section in the Social Democratic Trade Union Association of Vienna led negotiations on Vienna's future Strategy for the Sharing Economy. Positioning itself halfway between the Berlin approach (ban) and the Amsterdam approach (cooperation), the City developed the concept of "private accommodation provision" in order to ensure some level of cooperation between the taxi industry and new platform providers such as Uber¹⁰⁸. A set of Operating Regulations for Taxis, Chauffeur Services and Guest Transfers was eventually introduced in order to regulate access through the setting of quality, safety and traffic requirements¹⁰⁹. In spite of developing a highly institutionalized framework, protest and legal actions against Uber services have continued.¹¹⁰

By incrementally adjusting pre-existing policy tools to new issues and new entrants, the Viennese approach to the reduction of car use confirmed its robustness. Governance arrangements confirm the role of transport in reinventing corporatist form of local clientelism and consensus-oriented politics in a new political context¹¹¹. Yet following the election of the red-green majority, increased efforts were also made to improve the city for cycling and walking.

4.4.3 The city as a laboratory: experimenting with sustainable transport initiatives (Stage 3)

Drawing on the ecologist movement's traditional action repertoire¹¹², the Green Party has also considerably enhanced the role of "City for life" types of policies in Vienna (stage 3 policies), which, until then, remained marginal. In order to do so, they relied upon an altogether more radical approach, which sought to increase the policy resources available for sustainable transport policy initiatives on the one hand, and to make these initiatives more visible on the other hand.

Enhancing public spaces through flagship urban design initiatives

Preparatory works for the new spatial planning document (STEP 2025, adopted in 2014) offered a first opportunity to mobilize resources within the city administration while at the same time, introducing extended consultation procedures among a large variety of stakeholders. First, public transport extensions were increasingly coupled with urban design initiatives. This started prior to the arrival of the red-green coalition, but it was considerably enhanced after 2010 and made more visible through flagship initiatives.

¹⁰⁷ This is the case of DriveNow and Car2Go. The former is a subsidiary of BMW, which operates in Vienna since 2014 and relies on a fleet for 700 cars. The latter is a subsidiary of Daimler AG, that provides car-sharing services across European cities, as well as cities in China and Northern-America. It started operating in Vienna in 2011 and in 2018, it claims to have 138.000 costumers registered (Car2Go Press release, February 5, 2018): <https://www.car2go.com/media/data/na/press/releases/3memberbarelease.pdf> (last consulted on March 18, 2018).

¹⁰⁸ As of now, Uber operates in a highly institutionalized framework and offers three services, uberX, uberBLACK and uberVAN with comparatively high minimum fares (€3, €9, €9 respectively) and cancellation fees (€8, €10, €10).

¹⁰⁹ After considering quality, safety and traffic requirements, the City of Vienna does not have any objections in principle that taxi or chauffeur service companies accept assignments via internet platforms.

¹¹⁰ See recent court ruling, April 25, 2018.

¹¹¹ This is also the case in housing, with measures aimed at regulating tourist accommodation in conjunction with the arrival of Airbnb in Vienna.

¹¹² This notion refers, in the social movement theory (Tilly, 1986, 2), to the whole set of means [a group, a movement] has for making claims.

Until then, the opening of pedestrian zones was mainly combined with major underground investments and restricted to the historic city centre. A new bundle of policy resources and measures aimed at strengthening the urban dimension of transport was introduced as part of the city's "fair streetshare" policy (2011)¹¹³. In this respect, the Green Party sought to highlight the close interdependence between transport modes and the need to extend the integrated approach to active modes. As mentioned during interviews: *"Active travel and public transport are dependent on each other: high quality, extensive and affordable public transport offers the means by which those walking and cycling can travel longer journeys without being dependent on the car; equally, public transport depends on walking as this is how most public transport passengers access the station or stop"* (Interview Mobility Agency 2, March 2016, TbNB). In line with this new thinking, infrastructure investments were planned in favour of pedestrians and cyclists. There again, changes in the federal legislation offered a timely opportunity to experiment with new urban design initiatives in the vicinity to public transport nodes. As of 2013, the Austrian traffic code made the development of "encounter zones" (*Begegnungszonen*) or shared-uses possible that is, *"roads, which are intended to be shared by vehicles and pedestrians"* (StVO, § 2, TbCH). More specifically, this implies the reorganization of designated areas through urban design initiatives, 20km/h speed limit, prioritizing pedestrians, protecting vulnerable road users (pedestrians and cyclists), and limited parking spaces.

In Vienna, the decision was made to pedestrianize and open the Mariahilferstrasse to cyclists, a large, emblematic shopping street behind the newly redeveloped museum quarter. The decision itself followed a 3-year-long consultation period and was reached by referendum in 2014, among residents from both districts and thanks to a small majority of 53,2 per cent of votes. Led between 2013 and 2015, this project launched a major political controversy and strong opposition from the local and the national press. The shared space concept was also extended to adjacent streets, in order to reduce car use. Traffic calming measures, including a maximum 20 km/h speed limit in directly adjacent streets and 30 km/h speed limit in other through traffic and access routes, were applied in these areas to both car drivers and public transport. Lower speed limits were not, however, restricted to the inner city and adjacent districts, but following the election of the Green-SPÖ majority in 2010, another push was given to the city-wide expansion of speed restrictions under the policy objective of road safety with a particular focus around major transport nodes and in the vicinity of public spaces (Die Presse 2014).

There again, the selection of an emblematic road – the Herrengasse, located in the 1st district – gave visibility to this measure and offered an opportunity to draw on new financing sources. The Herrengasse was reorganized into an encounter zone in which walking was prioritized and all other transport modes, including cycling, being limited to a 20 kilometres per hour speed limit. Property owners alongside the street collectively committed to cover for the costs, estimated at € 6 million, while the City of Vienna undertook the refurbishment of underground networks (ORF, 01/12/2016). To this date, 6 encounter zones have been developed in Vienna, among which 5 are in inner-city districts (1st, 4th and 5th) and 1 in the 12th district¹¹⁴. Albeit the attention associated with such flagship project, it also highlighted the limits of small-scale initiatives in the absence of a more comprehensive, city-wide walking strategy as well as the lack, at Federal level, of policy resources and regulatory tools aimed at effectively prioritizing pedestrians. In this case, the Viennese approach was systematically compared, to its detriment, to experiences in French, Belgian, Swiss and Dutch cities (Interview Mobility Agency 1, February 2016)¹¹⁵.

Last but not least, specific emphasis was put on the development of cycling as transport mode, which remained low in terms of modal share, even though many inhabitants own a bike and use it for recreational purposes. To this end, the new red-green administration acknowledged the need for added policy capacity before engaging in city-wide policy initiatives.

¹¹³ *Strasse fair teilen*, Magistrat der Stadt Wien, 2011.

¹¹⁴ For an overview, see the dedicated website for Austria: www.begegnungszonen.or.at/bezo.php?sort=Gemeinde_ASC (last consulted February 2018)

¹¹⁵ See also the website of the Austrian Association for Pedestrians (Walk Space) : <http://www.walk-space.at/index.php> (last consulted January 2018) and Andreas Lidinger's analysis on the Viennecouver Blog : <https://www.viennecouver.com> (last consulted December 2017)

Organizational reforms and increased policy resources

As part of their agenda for sustainable transport, the Green Party and the ecologist movement also prioritized the need to foster increased policy resources – knowledge, expertise, funding, awareness-raising among practitioners and politicians, etc. – as a necessary step before reframing transport policy objectives. In this respect, they focused on the city administration, the weak development of alternative policy measures also being attributed to the city planning and transport planning culture within MA 18, MA 28, MA 46.

The creation of the Mobility agency in 2011 offered new opportunities for added capacity building in support of cycling and walking. It was initially established as the cycling agency, and extensively drew on resources accumulated over time as part of ARGUS in order to promote cycling. In the following year, walking was added to the agency's remit and it was renamed *Mobilitätsagentur Wien*. The agency was established as part of M128, which is responsible for the planning, construction, maintenance and general administration of the public road network, and it enjoys a semi-autonomous status. The decision that led to establish it as part of MA28 – as opposed to MA18 – confirms the agency's operational dimension and a clear political mandate to foster practical, concrete initiatives aimed at increasing the role of and space dedicated to active modes on the road network. It benefits from relatively small scale funding and administrative resources. Yet its semi-autonomous status also offers enlarged room for manoeuvre to promote active modes outside the range of classic policy tools. It is intended to act at the intersection between government institutions and the general public and incrementally self-defined its role as a think tank in the business of developing innovative ideas and as a provider of sustainable mobility solutions. This was further specified during interviews: *"The agency, which is not part of the city administrative and governance structure, acts as a go between, transmitter and negotiator between the general public, civil service and politicians with the specific remit for walking and cycling"* (Interview Mobility Agency 1, February 2016, TbNB). In its former capacity, it works with the technical staff in the city government – MA 28, MA 46 and MA 18 – in order to develop new idea on shifting mobility to the use of sustainable modes. More precisely, as explained in the following quote: *"the overall objective is to work on making cycling and walking in Vienna easier, more comfortable and safer"* (Ibid.). In view of the modal shift structure – 40 per cent public transport, 27 per cent car use and 29 per cent walking – cycling (6 per cent) was increasingly considered a strategic transport alternative.

In its latter capacity, the agency draws on the ecologist movement's action repertoire in order to give increased visibility to active modes through the organization and facilitation of advocacy campaigns, flagship initiatives and awareness raising (Blum, 2015). It also seeks to reach out to a distinct set of mobility experts in the academic sphere and to foster the emergence of broad issue network whose support could be mobilized during discussions with the city administration and traditional transport expertise. Through increased communication tools, the agency also highlighted the specific urban dimension of walking and cycling through events such as the Streetlife festival or "festival for urbanites" (since 2014) or framing these transport modes into the smart city agenda as part of the cycling year (2013)¹¹⁶ and the walking year (2015). In reference to the work done in Amsterdam, Copenhagen and other cities worldwide, the agency also drew on international networks and organizations, such as hosting the Walk 21 conference (2015), in order to use walking and cycling as an opportunity to strengthen Vienna's international profile and in doing so, reaching out to business actors by contributing to the city's place-making strategy. This also helped reaching out towards a large variety of stakeholders, with a specific focus on the general public, which constitutes one of its main targets.

Regular interactions with the public were also instrumental in identifying users' needs and prioritizing those policy initiatives and investments that would help increase the mode share of walking and cycling. As explained in the following interview: *"we went to the public and encouraged them to voice their concerns and ideas... We concluded that two things were needed: good and safe infrastructure as well as awareness of walking and cycling as a viable transport mode. And then of course, there were things we could do on our own, very simple things, but others we couldn't due to our limited resources."* (Interview Mobility Agency 1, February 2016, TbCH). More precisely, the agency developed a wide-range of information and communication tools aimed at transforming the general public's view on active modes and support their framing into proper transport alternatives. The regular production of reports and assessment for cycling also contributed to the agency's efforts to strengthen both the knowledge and capacity in support of active modes. The behaviour of cyclists was increasingly studied and added to the idea that these forms of mobility were to be included in transport policy

¹¹⁶ Following the organization of the Velo-City conference in 2013? A cycling manifesto was produced, including 8 strategies that would help transform the city into the "cycling city Vienna" (Dvorak, 2013).

objectives. In the case of cycling, the city's sharing system now amounts to 500.000 registered users, 118 stations and over 1.400 bikes. This demonstrated the continued increase in modal share from 2 per cent in 2002 to 6 per cent in 2011 (Mobility Agency, 2012). A similar strategy was applied to walking since 2015, with a first report published in 2015 that showed a 25 per cent modal split for walking and analysed the Vienna results in an international perspective. This first analysis clearly identified car traffic, urban design and the limited share of road space allocated to pedestrians as major barriers to the development of walking. By bringing together the information produced across various administrative departments and publicly reporting on progress made, the agency contributed to the framing of active modes as transport modes, and incrementally raised awareness among bureaucrats and planners the need to produce information, data and more generally, knowledge. Since then, there has been an increased effort within the city administration to measure these modes' respective mode share and to revise the location and amount of measuring points beyond traditional commercial and leisure areas.

The uncertain future of active modes in Vienna's transport strategy

Together, the combination between new transport policy initiatives and building policy capacity favoured the city's – and the red-green majority's – efforts to make the sustainable urban transport agenda come true. The knowledge and resources accumulated by the agency were instrumental during preparatory works for STEP 2025 and the thematic concept "Urban Mobility Plan Vienna", and since their adoption, at implementation stage, to support active modes and strengthen the urban dimension of transport. This included developing a comprehensive cycling programme, with yearly investment and a new range of services (e.g., apps, air pump stations, etc.). The following sets of arguments were instrumental in shaping the adoption of pro-active modes measures as part of the Urban Mobility Plan Vienna: increased safety, better health, support the economy and increased public space¹¹⁷. Indeed, when it comes to urban design initiatives, significant investment or changes in existing road traffic regulations, the agency still depends on their ability to negotiate with Wiener Linien and technicians within the city administration (MA28 and MA46).

Insofar as it was related to massive investments in public transport as part of the fares policy and the smart city agenda, some of Wiener Linien's reservations against measures having an impact in the operation of the surface network could be overcome. As of now, discussions focus on the ways through which larger flows of cyclists will be accommodated on the road network. Despite recurring demands from the Green Party and cycling groups, Wiener Linien continuously opposed the idea of transporting a bicycle on the public transport network free of additional costs and it still requires buying a special ticket (ibid.). Following the SPÖ-Green coalition's re-election in 2015, a regulation system based on a combination of incentives and penalties was introduced in 2017 in order to ensure compliance with levels of transport supply and quality criteria such as customer satisfaction, accessibility, cleanliness and safety.

4.4.4 Concluding remarks, stage 3

Over this last period, transport policy initiatives have resulted into increasingly visible and transformative changes in Vienna. The combination includes greening initiatives, aimed at adjusting pre-existing policy tools, policy experiments in order to strengthen the urban dimension of transport, and innovations in governance has resulted into an effective shift away from car-oriented policies. To be sure, these developments are more marked in the urban core and when related to heritage protection initiatives, yet they are being extended incrementally towards the rest of the inner-city, including inner-boroughs. They built on previous investment and initiatives aimed at strengthening public transport and reducing car dependency. Similarly to other cities under study in WP4, they also result from added policy capacity at city level to promote a sustainable urban transport agenda within the city administration, the political system, the transport sector and citizen.

Yet when considering the main drivers to policy change and the way through which policy processes unfolded, the Viennese approach also highlights old and new challenges. Political competition and high levels of politicization increased the potential influence of micro-level political management at the implementation stage, opening a large avenue for influence-seeking groups to obtain exemptions and maximise their own benefits. The number of transport controversies is also expected to increase, thus offering new opportunities for pro-car interests. This is currently the case with the Lobautunnel project, which would provide a rapid underground

¹¹⁷ See reports published since 2011, available on the Mobility agency's website <https://www.mobilitaetsagentur.at/publikationen-und-studien/> (consulted on January 2018).

motorway connection between the existing A4 motorway, under the Donau Island, to Seestadt Aspern and Bratislava (Wiener Zeitung, 02/02/2018). Last but not least, estimates for demographic growth and commuting travel demand also highlight the need to reframe Vienna's mobility policy goals in a regional and national context, and within the city's borders, to increase the level of constraint for car uses and low-density developments.

5 Conclusion

A major transformation has been observed in travel behaviour in Vienna since 1970 (D3.2 Vienna report). The share of car trips dropped to 26 per cent, and is particularly marked in the inner-city area. It can be measured by looking at the modal shift, the level of stress onto the road network, reduced numbers of highly polluting vehicles, and reduced numbers of accidents. Vienna has also seen a clear growth in non-motorized transport alternatives, with a 39 per cent share in public transport, and as of recent, in cycling (7 per cent) and walking (25 per cent).

Analysing transport policy developments in Vienna during the past 60 years helps to make sense of these changes. First, the analysis done in WP4 confirms the overall transformation of transport policies in Vienna and the shift away from car-oriented policies. Between 1954 and 2017, transport policies shifted progressively from planning for the automobile city (stage 1) towards planning for people (stage 2), which is still dominant in federal transport policies and to some extent, in transport policies at the city level as well, and planning for city life policies (stage 3), which have been incrementally introduced during the 2010s. Second, similarly to the situation observed in other WP4 cities, this evolution is not evenly spread in the city, with some strong differences between the historic city centre, and the inner and the outer suburbs. Beyond the city's borders, the role of the car remains largely dominant and fuels commuting traffic flows. Third, as observed in Copenhagen and Berlin, the incremental nature of policy change in Vienna contributes to exacerbating the overlap between the three policy types and for the transition being neither unidirectional nor evenly spread in the region. Similarly to the Berlin case, the Viennese model primarily draws on public transport in order to promote mode shift, which in turn accounts for the late development of an urban dimension to transport. In this respect, Vienna's historic urban core still benefits from tailor-made transport policy initiatives, including urban design and pedestrianizing initiatives.

Today, the three policy types coexist with one another, each benefiting from their own champions within the city administration, the political spectrum and the transport policy community at large.

The analysis done in WP4 also helps highlight the singularity of the Vienna case. This is further explained by examining governance-led explanations and how, together with macro-trends, these drivers shaped transport policy developments over time.

Robust forms of urban governance

A first explanation lies in robust forms of urban governance, which contrasts with other cases under study in WP4: the city enjoys extended powers in the context of the Austrian federal State and benefited from continued support – financial, regulatory, political – throughout the period considered in this report. Political stability and the SPÖ's hegemony over local politics accounts for the city's ability to incrementally adapt transport policy objectives and measures in relationship with unexpected events and new social demands. As part of the party's ability to maintain and transform a deeply rooted corporatist form of policy-making, SPÖ elites were able, together with the City administration and the city's utilities company to negotiate effective implementation with transport organizations, economic interest groups, workers' representatives, district administrations and residents' associations. By shaping opportunities for new entrants into the transport sector, it progressively integrated social demands into the local policy-making community. In this context, the main drivers for stage 3 policies result from the pressure exerted by ecologist groups and cycling organizations, the election of a red-green majority in 2010 and increased policy capabilities within the City administration and the transport planning community. Last but not least, the city also benefited from continued input from the transport and city planning community, acting within academia or in specialized consultancy offices, in order to conceptualize what the city's future might be, to critically examine various policy options, and to ensure the international visibility of the Viennese approach to transport.

Since the mid-2000s, these forms of governance have been challenged in a number of ways through the growing fragmentation of the local political party system, the end of SPÖ's absolute majority and growing debates, at national level, regarding the city's financial and fiscal situation. The growing politicization of transport issues manifests itself in two different ways: first, the growing number of transport controversies, which accounts for high level of attention among the media and the public; and second, new opportunities for those external to the local transport policy-community – grassroots' movements, international experts and consultancy firms, etc. – to promote new ideas and solutions, including private-owned and/or financed initiatives.

A highly adaptable public transport model

Furthermore, and this is a second explanation for the singularity of the Vienna case, a specific approach to transport was developed, which became known as the “Viennese public transport model”. The model’s premises are strongly embedded in the transport infrastructure, the built environment and to a lesser extent the policy capabilities that have been inherited from the 19th century and the 1920s. Current efforts to promote the compact city model build on this legacy and on the city’s singular political and economic trajectory during the Cold war period. The interventionist approach to urban development and land-use regulations also account for population density, notably lower motorisation rates than per capital GDP would suggest and the historical use of public transport. Yet the strength of the “Viennese public transport model” also lies in its adaptability to changed circumstances and technological changes. A first example can be found in the compromise reached in the late 1960s with pro-car advocates, at a time when political discourses and planning documents favoured private motorization. As resources became more scarce for public transport, elements of pre-existing networks were dismantled until a consensus was reached about the respective role of motorized transport (overground) and public transport (underground). Yet these systems never completely disappeared, as observed in the case of other cities in WP4: the Stadtbahn and the tram systems were dismantled and transformed into bus lines, and in a more original way, they were transformed into an underground metro system. Since then, this status quo has been incrementally redefined in order to prioritize public transport through high levels of subsidies, new technologies and car traffic containment initiatives.

A second example of the Viennese model’s adaptability lies in the decision, taken in the 1990s, to formally single out public transport as the backbone of the city’s transport system. In this case, the most remarkable sign of the model’s adaptability is less to be found in the transport infrastructures and systems, but in the changes brought to its organization and business model following the creation of the Wiener Linien. Public transport is now fully integrated in the local welfare policy system and benefits from continued financial support from the federal state through capacity funding in the metro system. More precisely, its central status has been ensured through organizational reforms, major investment in infrastructures and services, high levels of public subsidies and region-wide fare agreements with a wide range of transport operators. As of today, public transport is heavily subsidized in order to ensure the lowest possible prices while at the same time seeking to attract new passengers through high levels of supply and service quality. Last but not least, the model once again demonstrated its adaptability following the arrival of a red-green coalition in 2010. Interestingly, this major political change both strengthened and upgraded the Viennese model by developing demand-oriented services through the tariff structure, and by extending the reach of the integrated approach to other non-motorized modes. In spite of this policy’s fiscal and financial implications for the city’s budget and, to a lesser extent, to the Wiener Linien, it contributed to enriching public transport through sustainable transport initiatives as part of the “Green alliance” concept, and through a wide-range of new technologies (e.g., information and communication systems, etc.) as part of the smart city agenda. With the support of the local transport policy-making community, the red-green majority has been able to maintain a stronghold on the selection and integration of above-mentioned new ideas and solutions, and to reject those that threatened the long-term viability of the Viennese model. This was further exemplified in the latest transport strategy in 2015 as part of the city’s efforts to promote multimodal travel services.

The Viennese public transport model as a driver for car use reduction

In return, this collective choice justified continued attempts to limit car use. In this respect, the city traditionally relies upon federal and EU legislation in order to introduce car traffic mitigation measures aimed at reducing emissions and noise, as well as speed reductions justified by road safety concerns. As of today, this traffic mitigation agenda also encourages car-sharing as well as electromobility. Funding available for road projects declined, even though the city’s changed situation after the fall of the Iron curtain and new urban developments across the Danube recently justified new road projects at both federal and local levels, and an opportunity to generally increase road capacity. Since the early 1990s, the city also developed its own tool in order to restrict car use: the parking management system. Originally stemming from an attempt to protect the urban core without antagonizing its users (residents, workers, shopkeepers, etc.), this type of economic and fiscal policy instrument was incrementally systematised and extended up until it reached some 16 districts in early 2018. In spite of criticisms highlighting its limited environmental impact and its submission to political micro-management imperatives, it remains the city’s major tool to fostering car use reduction and dismantling off-street parking. Among those advocating a stricter approach to car use restrictions in the city at large, the parking management’s long-term effects – reduce congestion or restrict car use – is being questioned. The number of

parking spaces has continued to increase, and the mode share in commuting traffic remained constant. Since the late 2000s and in a context of growing concerns for increasing flows of commuting traffic, transport policy debates have highlighted the need to foster new region-wide coordination mechanisms and justified attempts to combine parking management with a congestion charge alongside the city's borders or with increased levels of subsidies for public transport.

Another long-term effect of the transport policy choices made in Vienna lies in the limited role of active modes and urban design initiatives until the early 2010s, to the exception of situation observed in the urban core for heritage preservation purposes. Since an early stage, a number of initiatives aimed at limiting car traffic and supporting walking were introduced, such as short-term parking restrictions, pedestrianising main roads and encouraging a diversity of street uses. By contrast, cycling was mainly advocated for leisure activities until the early 1980s and incrementally reframed into a significant transport mode under the pressure of cycling organizations. Conversely to the situation observed in Copenhagen at that time, where cycling filled a void in the absence of public transport supply and in a context of economic decline, the strong position of public transport relegated cycling to a subaltern role, which in turn accounts for its instrumental role within the ecologist and the student movements in order to promote new forms of policy-making and urban social practices. Since the early 2000s, the Green Party, together with cycling organizations, have continuously pushed for a more comprehensive cycling agenda, first as part of the municipal opposition and later, as part of the ruling coalition. There again, this transport mode's growing role – 1,5 per cent in 1984, 7 per cent today of mode share – relies upon the reallocation of financial resources and road space for cycling as well as upon increased policy capabilities at city level.

Current and future challenges in transport policy developments in Vienna

Notwithstanding the massive transformation achieved in Vienna over the past decades, whether or not the combination of parking management with strong public transport is sufficient in a context of increased population growth and commuting traffic flows remains an open question. In this regard, the Vienna case very much resembles other cities in WP4 in facing new challenges and the weakening of the main drivers that supported the introduction and development of car use reduction policies in the first place. Considering the rapid evolution in the country's political outlook, whether or not similar levels of resources will remain available for public transport in the near future is an open question. More precisely, in addition to levels of subsidies and financial support, this also extends to future relationships with the Wiener Linien. More optimizing through smart city solutions and technologies is possible, as are initiatives to promote cycling and walking as part of the Green alliance. The public transport network will also have to accommodate changed travel behaviours among younger generations, including lower driving licence holding, car ownership and use.

But there also might be a need for a more comprehensive re-appraisal of priorities for the road network. The city's "fair road share" strategy constitutes a first step in this direction, but both the Marienhilferstrasse and the Herrengasse projects highlighted the costs and the amount of policy resources needed to effectively implement small-scale streets sharing initiatives. Moreover, the further away from the urban core, the more pro-car advocates have been able to resist and shape the extension of the parking management scheme and the traffic mitigation agenda. At the city's fringes, local uses of land-use regulations have resulted into the emergence of new economic centres that are poorly integrated into existent public transport networks. At the local level the politicization of transport policy issues in a context of increased political competition weakens consensus-seeking forms of policy-making and opportunities to foster new compromises. Similar tendencies are observed within the automobile lobby with the emergence of challengers to the ÖAMTC at national level and their interest in seeking for highly visible results in the capital-city region. As of recent years, the Conservative Party, and to a lesser extent the FPÖ, have strategically positioned themselves as champions for car drivers and relied upon their electoral strongholds among the population and on both sides of the city's borders to challenge the Viennese model and denounce its insularity. More precisely, when observed at regional and national level, the growing role of the FPÖ has also contributed to the increased salience of transport issues among right-wing parties and electorates, as well as to the strengthening of the automobile lobby at national level and in the neighbouring provinces.

In Vienna, as in other cities in WP4, population growth estimates, rapidly evolving political outlooks and uncertainties related to resources available for public transport in the future question the long-term viability of those policy choices that made the shift to stage 3 possible.

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- Transport planning expert 1, BOKU, 16/03/2016
- Politician, SPÖ, 17/03/2016
- Transport planning expert, TU Wien, 17/03/2016

Contributions from outside the CREATE project

Master STU Sciences Po, Study trip to a European metropolis: Vienna-Bratislava, 12-17 November, 2013. The following meetings were relevant in providing some background context information for this study:

- Visit Aspern IQ, Die Seestadt Wiens, 12/11/2013
- EuropaForum Wien, Presentation about the Centropo project, 12/11/2013
- Municipal Department 18, Vienna City Administration, Presentation about Smart City Vienna, 13/11/2013
- OIR, Presentation about STEP 05 and progress report 2010, 13/11/2013
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