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MUTABLE

Mobility Supply Analysis: Mittelsachsen, Germany

Regional Fact Sheets (D.1.1.1)

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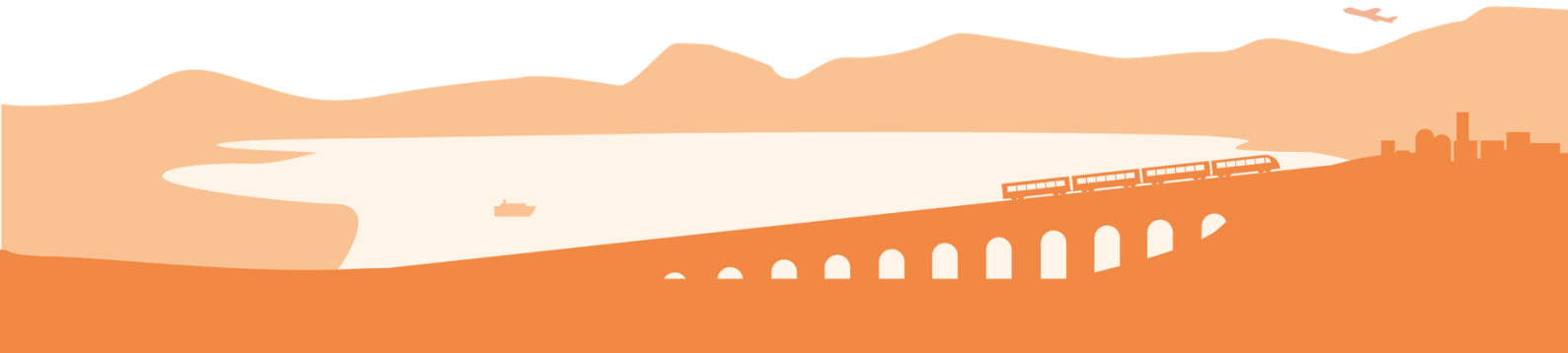

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A. Introduction

Public transport systems in the MUTABLE partner regions generally provide an adequate level of service to central locations and larger towns. However, accessibility, service frequency and coverage are often poorer in rural and peripheral areas. This creates structural mobility gaps, particularly affecting people without access to a private car, such as young people, older residents, those on low incomes and people with reduced mobility. Alternative mobility solutions to conventional public transport remain limited, while dispersed settlement patterns, demographic change and long travel distances further increase the need for flexible, inclusive mobility options.

Therefore, the challenge lies not only in providing transport services, but also in improving the coordination of infrastructure, information, funding, public transport planning and user needs across large and diverse territories. In this context, mobility management can play an important role by connecting existing services more effectively, promoting alternatives to private car use and supporting flexible, demand-responsive transport solutions. It can also make sustainable mobility options more visible and accessible for residents, commuters, businesses and visitors.

Across the partner regions, three Pilot Demonstration Sites (PD) aim to test innovative, demand-responsive approaches that are adapted to local and regional needs:

- PD1 Adapting Existing Public Transport Lines to Local Demand north of Chemnitz, Germany
- PD2 Capitalising on Synergies Between Public Mobility Services in Paks, Hungary
- PD3 Mainstreaming of Public On-Demand Mobility Services in Tišina, Slovenia

The goal is to make better use of existing operational capacities, improve service availability and strengthen the cooperation of administrative bodies, transport providers and other relevant stakeholders. To develop a shared understanding of regional public mobility systems and to serve as a basis for establishing a mobility management role, a Regional Fact Sheet (Deliverable 1.1.1) has been created for each area as part of a joint Mobility Supply Analysis (Activity 1.1). The fact sheets provide a concise analytical summary of the current regional mobility supply at administrative and provider levels, identifying key challenges and development needs.

They also support the identification of untapped potential for innovation and transnationally developed conclusions, thereby acting as a basis for the preparation of tests in the PDs. Furthermore, the fact sheets provide a transferable knowledge base that can support the replication and adaptation of mobility management measures in other regions facing similar challenges.

B. Regional Analysis

1. Overview of the Central Saxony region

The District of Central Saxony is a predominantly rural District in the Free State of Saxony. It was formed in August 2008 through the merger of three former Districts and today comprises 31 municipalities and 21 towns. With approximately 297,146 inhabitants in 2024 and an area of 2,116.84 km², the district is characterised by low population density, dispersed settlement structures and a polycentric network of medium-sized towns. From a spatial planning perspective, only about 10% of the district is classified as an urban agglomeration area, mainly the municipalities adjacent to the urban centre of Chemnitz. Around 37% of the district is classified as a more densely structured area within a rural region, including parts around Freiberg and southern parts of the former District of Döbeln. The remaining and largest part of the district is classified as rural area. This spatial structure strongly influences everyday mobility needs and the viability of public transport services.

Figure 2: Location of the District of Central Saxony in Germany

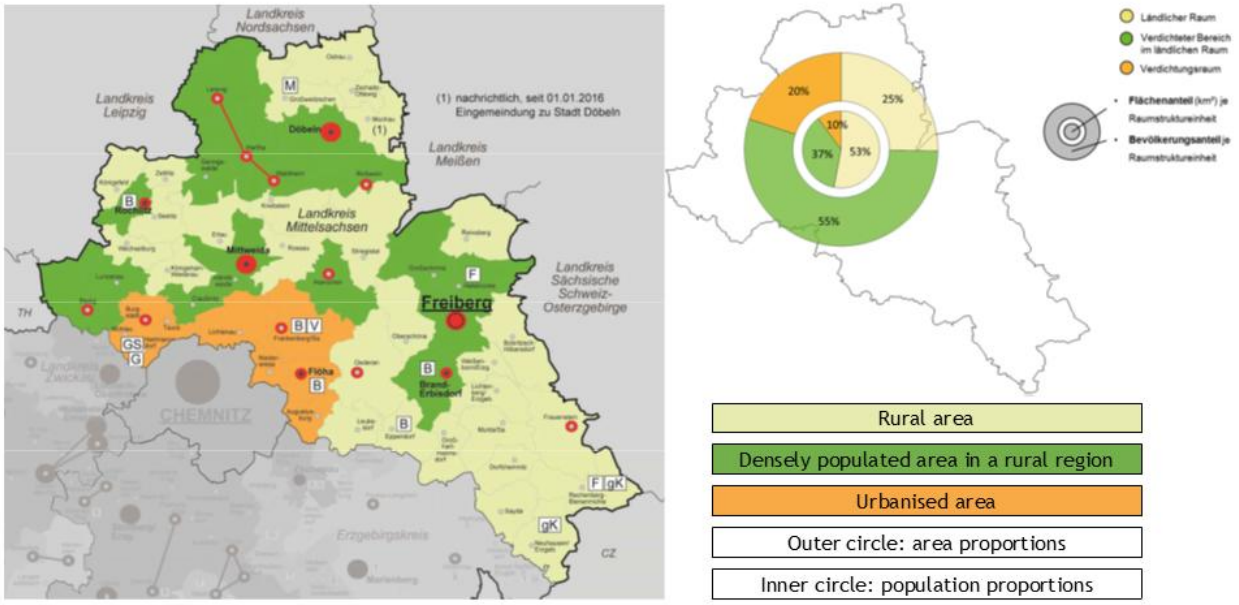

Figure 1: District Structure according to the Local Public Transport Plan

2. Existing Mobility Services and Stakeholders

Mobility is currently dominated by motorised individual transport with a modal split of around 60 % compared to around 8% for public transport. This reflects the settlement structure of the district, where many villages and smaller towns are difficult to serve with conventional high-frequency public transport. Approximately 75% of the working population are local commuters, while the district records more outbound than inbound commuting.

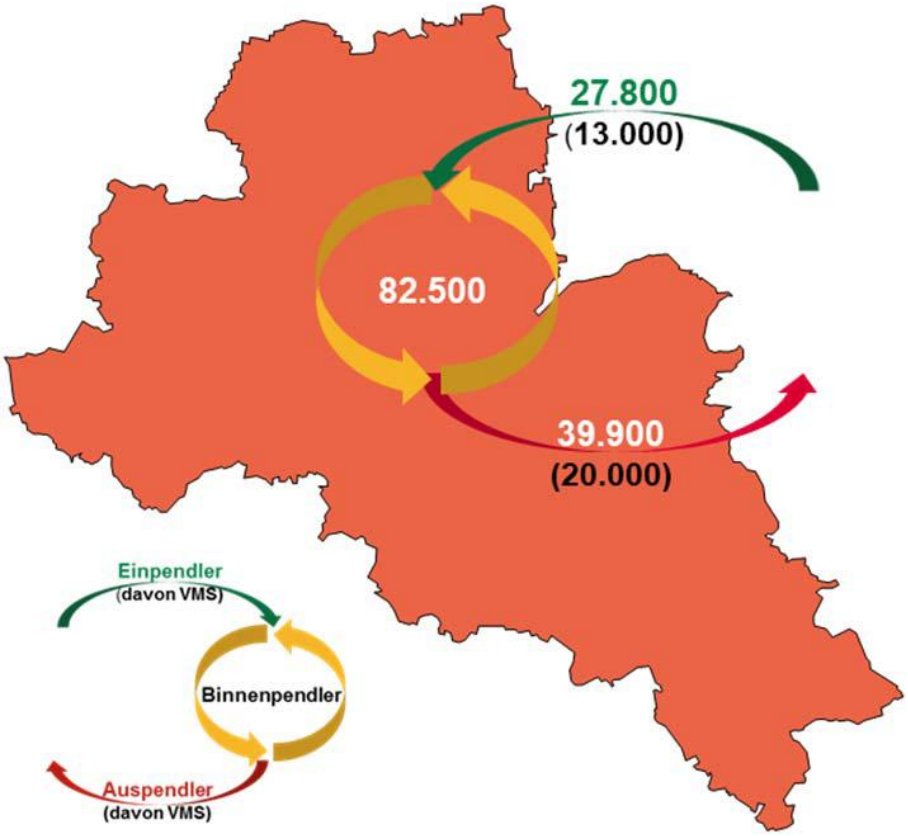

Figure 3: Commuting Patterns in the District of Central Saxony. Red: Commuting out of the Area. Green: Commuting in the Area. (Local Public Transport Plan)

A key institutional actor is the Public Transport Association of Central Saxony (Verkehrsverbund Mittelsachsen, VMS). A public transport association is a regional coordination body that integrates public transport services across several administrative areas, usually through common tariffs, coordinated timetables and planning frameworks. It covers a wider regional area and is formed by the City of Chemnitz, the City of Zwickau, the District of Central Saxony, the District of Zwickau, and the Erzgebirge District.

At District level, the main public transport operator is REGIOBUS Central Saxony (REGIOBUS Mittelsachsen GmbH), which is owned by the District of Central Saxony. It operates around 90% of the public transport lines within the district and mainly provides bus services with a fleet of 228 vehicles. In 2018, approximately 13 million passengers were transported. The district has more than 1,500 public bus stops and 24 defined interchange hubs. Rail-based public transport depends on actors outside the direct responsibility of the district. In addition, there are no long-distance rail connections within the district. This makes the coordination between bus and rail services particularly important, especially at interchange hubs and in relation to regional commuting flows.

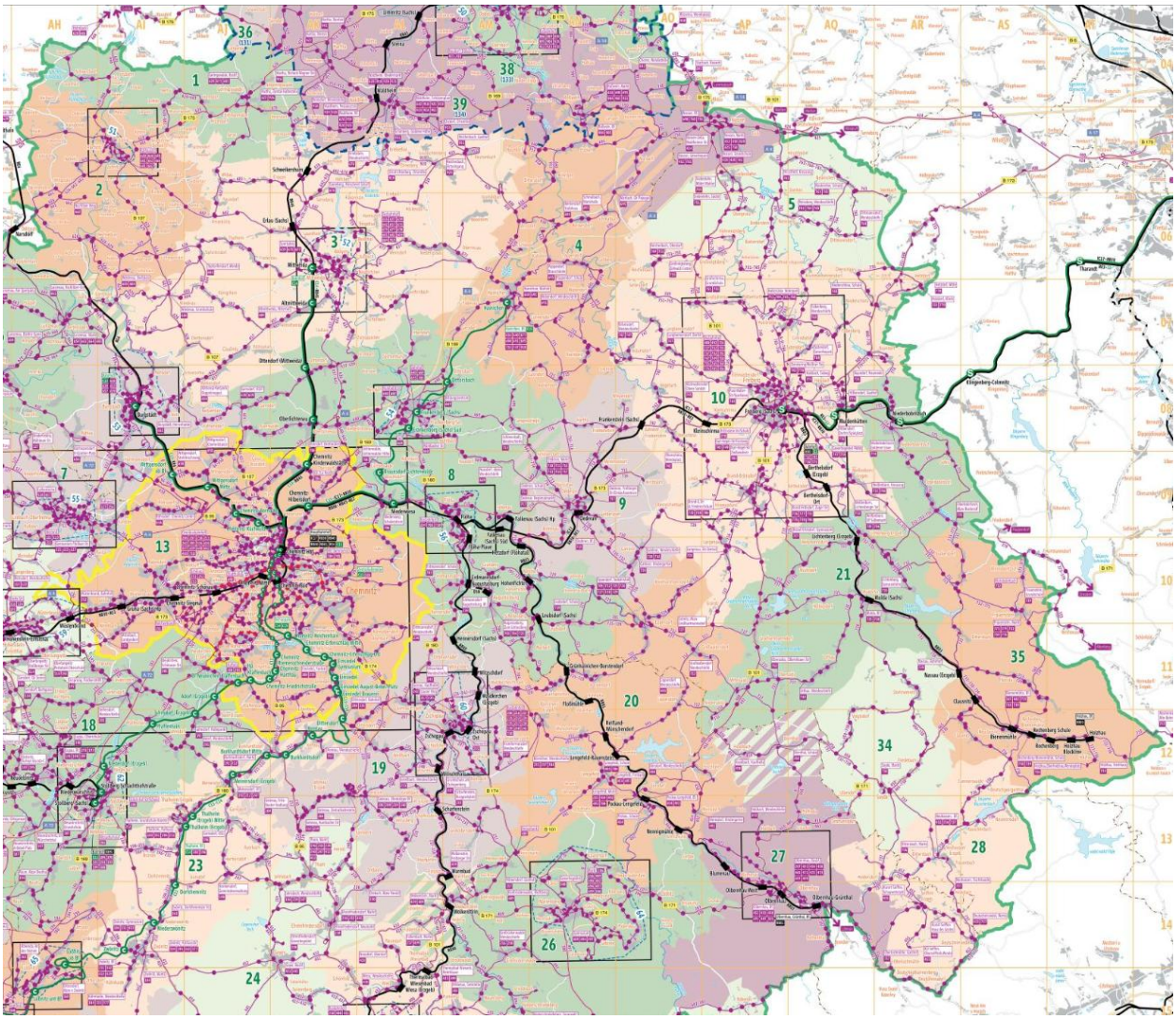

Figure 4: Overview of the Line Network Plan. Purple: Bus Routes. Black: Regional Train Line. Yellow: City of Chemnitz. The District of Central Saxony covers the Northern and Western parts of the graphic. (www.vms.de/zoomable/verbundliniennetzplan)

3. Legal and Financial Framework

The central planning document is the Local Public Transport Plan for the Chemnitz/Zwickau public transport area (Nahverkehrsplan für den Nahverkehrsraum Chemnitz/Zwickau), currently in its fourth edition from 18 June 2021. A local public transport plan defines the strategic framework for public transport services in a specific public transport area. It describes the required service level, infrastructure needs, coordination principles, quality standards and future development priorities. It also forms the basis for service contracts with transport providers.

The planning objectives emphasise that public transport should be secured and further developed as a comprehensive service, even under changing demographic conditions. Public transport authorities are expected to optimise services as a competitive alternative to motorised individual transport, while taking economic constraints into account. In rural areas, a basic level of public transport service must be ensured in all municipalities, including flexible and complementary service forms.

The Local Public Transport Plan is rooted in regional law and wider mobility strategies. Spatial planning objectives are based on the Federal Spatial Planning Act (Raumordnungsgesetz, ROG), the Saxon Spatial Planning and State Planning Act (Gesetz zur Raumordnung und Landesplanung des Freistaats Sachsen, SächsLPlG) and the State Development Plan of the Free State of Saxony 2013 (Landesentwicklungsplan des Freistaats Sachsen, LEP).

At regional level, the district is still influenced by two regional plans: the Chemnitz-Erzgebirge Regional Plan (Regionalplan Chemnitz-Erzgebirge 2008) for the former Districts of Freiberg and Mittweida, and the West Saxony Regional Plan (Regionalplan Westsachsen 2008) for the former District of Döbeln. A new integrated Regional Plan for the Chemnitz Region (Regionalplan Region Chemnitz) is currently being prepared for the merged regional planning association.

The financing of public transport is organised through several funding sources. These include regionalisation funds under the Saxon public transport financing regulation (ÖPNVFinVO des Freistaates Sachsen), investment funds from the public transport state investment programme of the Free State of Saxony (ÖPNV-Landesinvestitionsprogramm des Freistaates Sachsen), compensation payments for reduced student and trainee fares under the Saxon Public Transport Financing Compensation Act (ÖPNVFinAusG des Freistaates Sachsen), contributions from the Erzgebirge District, the District of Zwickau and the District of Central Saxony for school transport, association levies, and state funds for narrow-gauge railways.

4. Ongoing Efforts and Challenges

The District of Central Saxony faces several overlapping mobility challenges. Projected Demographic change and declining population in the rural areas are expected to lead to stagnating or declining demand for public transport. At the same time, urbanisation may increase the public transport modal share in more urbanised parts of the district. Environmental awareness is growing, but the existing mobility culture remains strongly car oriented.

A major challenge is to maintain an adequate public transport offer while using public funds efficiently. Considering the ongoing trend, expanding conventional fixed-route services alone is unlikely to be financially sustainable in areas with low demand. For this reason, the district increasingly focuses on innovative demand-responsive approaches, such as stronger main corridors and regular-interval bus services (PlusBus lines and TaktBus lines), combined with the call-a-bus service (“Rufbus”). Another ongoing priority is the strengthening of 24 interchange hubs defined by the district, which are important for coordinating and connecting bus routes and rail services. According to regional planning, parallel services between rail-based and road-based public transport should be avoided where possible, while connections and transfer options should be improved.

There is also a need to strengthen the data basis for mobility planning. Although the District has more than 1,500 public bus stops, there is currently no central database. This limits the ability to systematically analyse accessibility, infrastructure quality, barrier-free access and the spatial relationship between stops, residential areas, workplaces and leisure destinations. Finally, the tourism potential of the UNESCO Ore Mountains/Krušnohoří Mining Region creates opportunities for sustainable mobility in the VMS. Improved public transport connections and better information services could support tourism while reducing car dependency in sensitive rural and heritage areas.

One approach to tackle the challenges is the Chemnitz Model (Chemnitzer Modell). Its main objective is to connect neighbouring medium-sized towns directly with the urban centre of Chemnitz without requiring passengers to change trains. The concept combines existing tram and railway infrastructure into one integrated public transport system and is complemented by links to regional bus routes, enabling shorter transfer distances and better multimodal accessibility. The initial idea developed in 1992 is being implemented in several stages and includes infrastructure upgrades, interconnections with existing lines,

barrier-reduced vehicles and platforms, and citizen participation. Key stakeholders include national and federal government bodies, the VMS, the Municipality of Chemnitz, infrastructure providers such as DB InfraGO AG, Regio Infra Service Sachsen GmbH, DB RegioNetz Infrastruktur GmbH, Erzgebirgsbahn and Chemnitzer Verkehrs-AG, as well as transport operators, planning offices and construction companies.

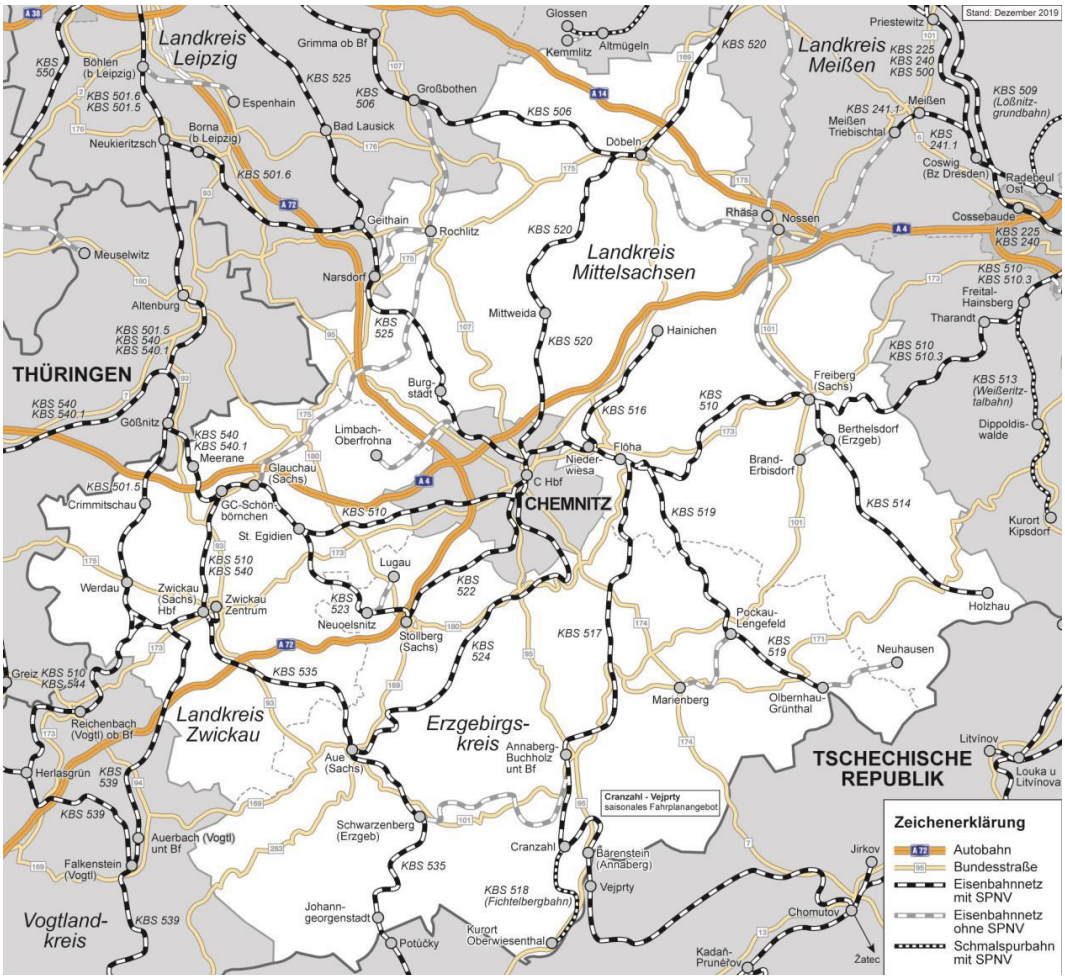

Figure 5: City of Chemnitz as interregional Mobility Hub.

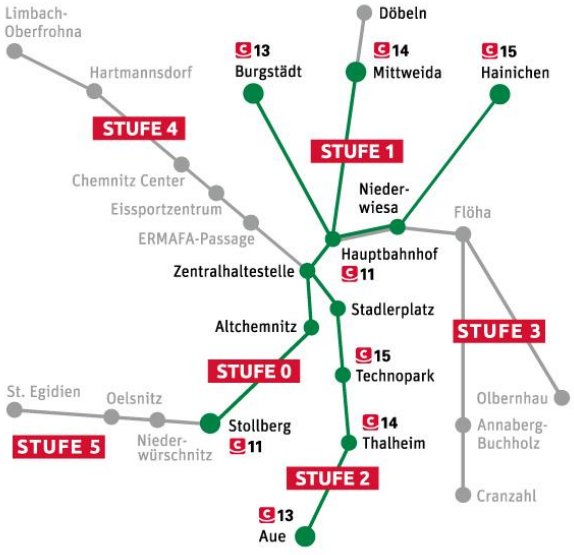

Figure 6: Planned Connections (Green) and Implementation Phases of the Chemnitz Model

C. Mobility Management in the Regional Context

1. Introduction of the Mobility Manager role

A recent step towards addressing the challenges was the feasibility study "New Mobility in the District of Central Saxony" ("Neue Mobilität im Landkreis Mittelsachsen"). It was carried out from 01.09.2023 to 30.09.2025 within the framework of the automotive-led innovation cluster ITAS (Initiative Transformation der Automobilregion Südwestsachsen) and funded by the Federal Ministry for Economic Affairs and Climate Protection (Bundesministerium für Wirtschaft und Klimaschutz). Its objective was to deduce ways to improve the mobility situation in the District of Central Saxony, particularly in areas that are insufficiently served by public transport.

Firstly, nine study areas in the District of Central Saxony with no or insufficient access to scheduled public transport were assessed according to number of residents, commuter flows and connections to regular public transport services and other indicators. Based on this, the study area "Northern Chemnitz Area I" was selected as the service area for a new mobility offer. This 19,5 km² area comprises parts of the municipalities of Burgstädt, Mühlau and Penig and includes approximately 2,500 residents.

Secondly, a transport concept was developed. It included two proposed routes, connections to existing regular bus and rail services, and draft timetables. The service was designed as a demand-responsive scheduled taxi service, known as ALiTa (Anruflinientaxi), which can be integrated into the existing structures.

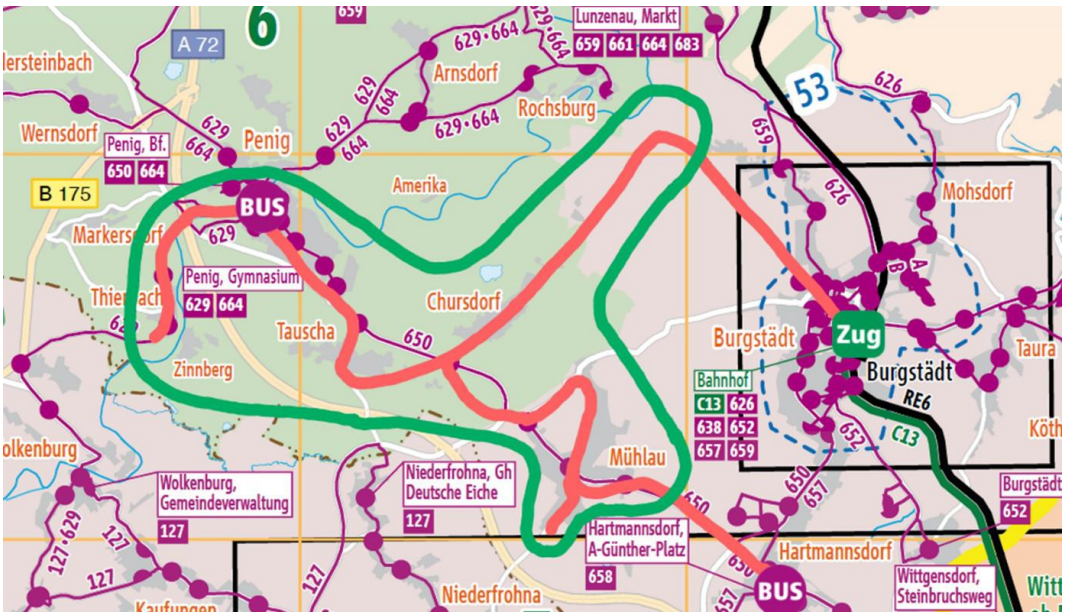

Figure 7: Green: Northern Chemnitz Area I; Red: proposed Routes (final Report of the ITAS Project)

Demand and other key indicators were calculated using the "Toolbox ÖPNV", which had been developed as part of a former research project. In addition, a survey on public transport use was conducted in the service area. The survey collected information on current mobility behaviour, intended use of the proposed new lines and further relevant criteria. A total of 157 participants from the service area took part in the survey, out of 171 respondents overall. The recommendation for a trial operation on proposed Line 1 instead of proposed Line 2 was based on several quantitative indicators, as it would newly connect 1,262 residents, has lower monthly costs and a lower subsidy requirement.

The ITAS study also compared investment costs, operating costs and total costs of vehicle models, and the use of a battery-electric bus was recommended. Furthermore, available dispatching software solutions were assessed. It concluded with recommendations for a proposed trial operation to capitalise on the results of the analysis (a.o. securing financing, integration in existing procedures, accompanying public relations activities). To build on the results of the ITAS study, the district administration made efforts to strengthen mobility management capacities, but a former application for funding a mobility manager position under the regional FR Regio Saxony funding guideline failed.

MUTABLE can draw on those earlier initiatives and expand the scope with its transnational character. That is why Pilot Demonstration Site 1 (PD1) will take the Northern Chemnitz Area I into account, which offers a suitable real-world environment, as the area combines clear accessibility deficits with a realistic potential for operational testing. The previous work has already identified concrete mobility deficits, prepared operational options and assessed institutional, technical and financial requirements.

2. Expected added value to the regional context

Introducing the role of a Mobility Manger is designed to connect strategic planning objectives with practical implementation at regional and local level. The added value lies primarily in closing coordination and information gaps in the current regional mobility framework. Rural areas often face fragmented responsibilities, changing mobility demand and accessibility deficits, particularly in peripheral areas. Therefore, the aim is to establish a new organisational basis at district level, enabling mobility needs, planning requirements and implementation measures to be coordinated more systematically.

Another important contribution is the strengthening of intermunicipal cooperation and regional networks. The Mobility Manager can act as an interface between institutions involved in mobility planning and implementation as well as establish a practical structure at District level for addressing mobility challenges linked to demographic change. This is especially important for demand-responsive transport, whose success depends on effective cooperation, clear communication, user activation and continuous monitoring of service acceptance.

The role can also support the development of new mobility options, including flexible public transport services, demand-responsive transport, intermodal connections and sustainable pilot offers. The amendment of the federal Passenger Transport Act (Personenbeförderungsgesetz, PBefG) has created a legal framework for on-demand services in public transport, which are especially suitable for low-demand areas. Although such services currently often face challenges regarding cost recovery, automation and digitalisation could improve their economic viability and support more financially sustainable rural mobility services. Here, the Mobility Manager can ensure that such modernisation initiatives are oriented on the actual use cases in the area, thus increasing the efficiency of the system.

Finally, the Mobility Manager can help ensure that new mobility offers are not perceived as isolated services, but as part of an integrated regional mobility system. This requires targeted public information, marketing and communication, especially towards groups that have not regularly used public transport so far. By involving citizens, municipalities, service providers and regional actors, the project can increase acceptance, generate synergies and strengthen identification with the region.

3. Responsibilities and Opportunities

The Mobility Manager should combine strategic coordination with the preparation of practical implementation measures to help translate strategic planning objectives into concrete mobility-related actions. Therefore, an anticipated key responsibility is the systematic assessment of existing mobility services, local mobility needs, and relevant planning frameworks. This includes the relevant Local Public Transport Plan, as well as the relevant regional plans, the objectives of the Saxon State Development Plan 2013, and the Sustainability Strategy of Central Saxony. Building on the model region Northern Chemnitz Area I introduced by the former ITAS project, the Mobility Manager can analyse development potential by dividing adjacent areas into clusters according to the existing methodology. This approach allows mobility solutions to be tested in a defined area, developed further in line with local needs and subsequently transferred to other parts of the district.

The Mobility Manager should be responsible for preparing a milestone-based implementation strategy in line with the general planning objectives. Clearly defining individual projects and pilot actions is particularly important for increasing acceptance of mobility management in the region. In this context, the role can explore flexible public transport services, demand-responsive transport, innovative mobility concepts, intermodal connections and sustainable pilot offers. These options are particularly relevant in peripheral, sparsely populated and structurally weaker areas, where conventional public transport may not fully meet local needs. Another focus should be improving connections between different modes of transport, including motorised individual transport, long-distance public transport, local public transport and cycling, by identifying relevant transfer points and gaps in the existing system.

It is also important to strengthen stakeholder cooperation between the district, the VMS Transport Association, municipalities, transport providers, regional actors and citizens. This reflects the broader regional planning objective of supporting development initiatives through cooperation between regional and supra-regional actors. Additionally, the Mobility Manager could examine links with neighbouring districts, municipalities and regional cooperation, such as LEADER regions. By connecting initiatives with existing regional strategies and development concepts, synergies can be created and successful approaches can be made transferable beyond the initial model region.

Finally, public relations and citizen involvement should be integral to the role. New mobility services especially need to be accompanied by targeted communication and marketing activities by the district, the transport provider Regiobus and the transport association VMS. These activities should also address groups that have not regularly used public transport so far. The success of flexible and demand-responsive services depends not only on their technical and operational design, but also on raising awareness of them, building trust in them and gaining acceptance of them among potential users.

D. Transferability and Synergies

The conclusions gathered in the MUTABLE mobility supply analysis across Central Saxony in Germany, Tolna County in Hungary and the Pomurje Region in Slovenia show that rural and less densely populated regions face remarkably similar mobility challenges, even though their institutional frameworks, service models and implementation capacities differ. Across all three regions, private car use remains dominant and continues to shape everyday mobility patterns, reflecting dispersed settlement structures and limited alternatives.

At the same time, buses remain the basic public mobility offer and are therefore central to any strategy that aims to improve accessibility, reduce car dependency and strengthen social inclusion. However, the usability of bus services is often limited by reduced service levels outside peak hours, especially in the evenings, at weekends and during holidays. This limits the usability of public transport for daily life, not only for commuting. Therefore, the MUTABLE supply analysis confirms that mobility planning in rural regions must be closely linked to accessibility and social inclusion, rather than being understood solely as the provision of transport services.

Despite these shared challenges, significant differences can be observed in the maturity of policy frameworks, institutional structures and service models. Germany and Slovenia already show more advanced legal or strategic frameworks to support mobility planning, including funding mechanisms. Slovenia, in particular, is developing structured instruments such as Regional Mobility Centres, supported by national and European funding. In the Tolna County, the focus is linked to the practical integration of existing transport resources, f.e. the connection between employer-based transport and municipal public transport.

Governance emerges as a decisive factor to translate mobility objectives into concrete instruments, responsibilities and investment priorities. All three regions point to the need for stronger regional coordination, because mobility patterns do not stop at municipal borders. Mobility management requires a regional perspective, even when services are delivered locally.

The three regions also demonstrate that the approach does not necessarily lie in creating entirely new systems, but connecting existing services more effectively, closing operational gaps and making better use of existing resources. This applies both to operational integration, such as better connections between buses, rail and local services, and to institutional integration, including cooperation between municipalities, counties, transport operators, employers, civil society actors and, where relevant, national institutions.

Several best practice examples have been identified in the MUTABLE partner regions, demonstrating that rural mobility management can develop from different starting points and offering inspiration:

- In Central Saxony, the **Chemnitz Model** demonstrates the value of an integrated multimodal transport system by linking tram, rail and regional bus services into a coordinated network. The relevance of this model lies not only in the infrastructure itself, but in the principle of integration: services become more attractive when passengers experience them as one system rather than as separate modes.
- This principle is also reflected in the **call-a-bus service ("Rufbus")**, which operates within the regular line-based transport infrastructure in Central Saxony. Although the current model still has clear limitations, including the absence of a digital booking option and restricted service times, its integration into the existing public transport framework makes it a practical basis for further development.
- In the Tolna County, the **integration of employee transport for the Paks Nuclear Power Plant** into the municipal bus network shows how employer-based mobility can contribute to public transport efficiency, higher vehicle utilisation and reduced car dependency. Employer-based transport is often treated as a separate system, but it can become a

strategic asset for the wider region. The example is particularly relevant for regions with major employers, industrial sites or large institutions that already generate regular transport demand.

- In the Pomurje region, the **Prostofer service** for vulnerable groups shows the potential of community-based mobility solutions. By organising on-demand transport for vulnerable groups with the involvement of local citizens, the model addresses accessibility gaps that conventional public transport cannot always cover. Its value lies in combining mobility provision with local engagement and social support.
- In addition, Slovenia's network of **Regional Mobility Centres**, supported by national government and European funding, demonstrates how strategic capacity for mobility management can be institutionalised at regional level through specific policy instruments.

The transferability of these examples lies less in copying one specific model and more in adapting the underlying principles:

- Public transport should be planned as part of a wider accessibility strategy, not only as a transport service.
- Particularly for vulnerable groups or low-demand periods, flexible and on-demand solutions can complement regular public transport.
- Employers, municipalities and civil society should be considered active partners in mobility management rather than external stakeholders.
- Particular attention should be given to people who are at risk of mobility poverty, including older people, young people, people without access to a car and other vulnerable groups.

Concluding the joint MUTABLE mobility supply analysis, this underlines the need to move beyond a narrow focus on school and commuter transport and to understand mobility as a basic condition for independent living and equal access to essential services. Rural mobility improvement depends less on one single solution than on the ability to combine different instruments into a coherent system. Progress is possible when mobility is treated as a shared regional task and when existing structures are connected more effectively. A future-oriented mobility management approach should therefore focus on coordination, integration and accessibility, with the explicit goal of enabling participation for all population groups while reducing unnecessary dependence on the private car.

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