

## General context

Mannheim (325,691 inhabitants) is the second-largest city in the German state of Baden-Württemberg, after the state capital of Stuttgart. The city is the cultural and economic centre of the Rhine-Neckar Metropolitan Region, Germany's seventh-largest metropolitan region.

## Modal share

According to the latest statistics from 2018, the modal share of domestic traffic in the city is as follows: 34% of trips are made by walking, 20% by cycling, 33% by car, and 13% by public transport. This shows that most people prefer active modes of travel, which have positive impacts on health, environment, and social cohesion. However, there is still room for improvement in reducing car dependency and increasing public transport usage, which could contribute to the reduction of the congestion, pollution, and greenhouse gas emissions.

## Mobility offer

Mannheim offers a diverse range of mobility services. The city has an extensive public transportation system which includes buses, trams, and trains, operating at the city and regional level by public companies: Rhein-Neckar-Verkehr GmbH (buses, trams), Deutsche Bahn AG (suburban and regional trains) and Busverkehr Rhein-Neckar (regional buses). Tickets can be purchased through various means, including automated machines, online platforms, or dedicated smartphone applications.

Car sharing service is provided by private operators (Stadtmobil Rhein-Neckar (GmbH)) and the car booking can be made by mobile app. Taxi services are offered by various providers who hold licenses issued by the city administration and operate within both urban and suburban areas. Uber provides a ride-hailing service; however, it should be noted that this particular service is not formally licensed.

The provision of on-demand services is facilitated by Rhein-Neckar-Verkehr GmbH, a public transport operator. Since its latest extension in July 2023, the service covers about half of the city area and offers a city wide night service on weekends. E-scooter services are supplied by private companies such as Lime, Bolt, and TIER, and are run on a city scale. The bike sharing service is operated by Nextbike (TIER) and receives financial support from the city. It is accessible for use within both urban and suburban areas.

Mannheim is working on a unified payment system for public transport, on-demand service, and bike-sharing. Users can then pay for all these services with a single card or app, called MyVRN. This app can be used as well for real time information and travel planning.

The development of a MaaS application is planned and several actions in this regard have been made, such as meeting with public transport providers, transport association, external companies. The main issues raised in developing such a solution are related to the regulatory aspects, data flow, equipment.

Germany has established a national framework for low emission zones. Excluding motorcycles, the LEZ applies to all types of motor vehicles. For compliance with this regulation, Mannheim has set up a LEZ in the city centre.

In Mannheim, there are several options for last mile delivery services. Some of the most common last mile delivery services are courier services that offer fast and flexible delivery of small to medium-sized parcels. They use bikes, motorcycles, cars, or vans to transport the goods. Additionally, parcel lockers are also used; they are usually located in convenient places such as train stations, supermarkets, or gas stations.

## Transport data collection and integration

In Mannheim there are several traffic/transport data collection systems in place that monitor various aspects of mobility, such as general traffic, public transport, and alternative mobility services. However, currently the data collection is not organised in a coherent way, as each organisation manages its own data without sharing or integrating it with others. But the Transport Authority are working on a platform to integrate public transport, scooter and bike-sharing data.

There are several ITS platforms and the entities that operate them. The city is the main entity that operates traffic flow management platform to monitors and controls the city traffic. Public transport management platform and automated fare collection systems platform are mainly operated by the transport operating company - RNV in collaboration with other public entities.

Finally, parking management platforms are operated by the City Authority, with the assistance of other public entities.

## Consideration on public transport service

The public transport system in Mannheim offers many advantages to its users. Some of the **strengths** of the system are:

- **Availability** - public transport service operates 24 hours a day, seven days a week, ensuring that people can travel at any time of the day or night.
- **Coverage/network density** - public transport network covers a large area of the city and its surroundings, connecting different neighbourhoods, districts, and suburbs with each other. The network consists of trams, buses, and regional trains, offering a variety of options for different travel needs. The network density is high, meaning that there are many stops and stations within walking distance from most locations in the city.
- **Accessibility** - public transport service is aiming at being accessible for everyone, regardless of their age, ability, or situation. Most stops and stations are easy to reach by walking, cycling, or using other modes of transport. The vehicles are comfortable and most of them fully accessible, equipped with low-floor entrances, ramps, audio-visual announcements, and priority seats for people with disabilities, seniors, pregnant women, and families with children.
- **Frequency** - the public transport service in Mannheim runs frequently throughout the day and offers designated night services, reducing waiting times and increasing convenience for passengers. The average headway (time between vehicles) is 10 minutes or less during peak hours and 15 minutes or less during off-peak hours. The frequency is adjusted according to demand and special events, ensuring that there is always enough capacity and service quality for everyone.

The public transport system in Mannheim also faces some **challenges** and **weaknesses** that need to be addressed:

- **Reliability** - especially during peak hours. The main causes of unreliability are traffic congestion, road works, and staff shortages.
- **Travel time** – the public transport system has comparably long travel times, especially for longer distances and cross-city trips. The possible factors that affect travel time are the frequency and speed.
- **Integration** - the public transport services are well integrated among each other, but less to other modes such as sharing modes, impeding intermodal transfers and multimodal trips.
- **Price** - the public transport system has a complex structure, especially for occasional and non-regular users. The impact of the recent introduction of a Germany wide PT-pass has yet to be evaluated.
- **Information provision** – in order to raise the modal share of public transport, there is a need for improvement of information system and to integrate information with diverse mobility providers.

## Relation between major mobility stakeholders

In Mannheim, there are several operators that provide different types of mobility services, such as public transport, car sharing, bike sharing, e-scooters, and ride hailing. These operators have different relations with the local authority, depending on the nature and scope of their service.

Public transport is the most widely used mobility service in Mannheim, and it is operated by Rhein-Neckar-Verkehr GmbH (RNV). RNV has a contract with the Verkehrsverbund Rhein-Neckar (VRN), a public transport association that covers the whole metropolitan region. RNV is responsible for providing bus, tram, and light rail services within Mannheim and to neighbouring cities, and as well on-demand transport service. RNV also cooperates with Deutsche Bahn (DB), the national railway company, to offer regional and long-distance train connections. The cooperation with these service providers is considered very good. The local authority regulates and subsidizes RNV's operations, as well as sets the fares and service standards. The cooperation with the public transport service providers is considered very good.

Car sharing mobility service in Mannheim is provided by Stadtmobil Rhein Neckar (GmbH). The local authority has a good relationship with the operator; the local authority supports this service by providing parking spaces and permits for the operators, as well as promoting the service to the citizens.

Taxi services are provided by several private operators, based on licences issued by City Administration.

Ride hailing is provided by a private operator - Uber. The local authority imposes restrictions on Uber's operations, such as requiring drivers to have a professional license and insurance and the relation with this operator is rather poor.

Bike sharing in Mannheim and the region is overseen by VRN, who chose Nextbike (now Tier) as private operator through a tender procedure. The city supports bike sharing by providing bike lanes and racks for the operators, as well as encouraging the use of bikes among the citizens.

E-scooters are another emerging mobility service in Mannheim, and they are currently provided by three operators: Lime, TIER, and Bolt. The local authority regulates e-scooter sharing by setting rules and limits for the operators, such as speed limits, parking zones, and maximum number of e-scooters per operator.

The last mile goods delivery is not specifically regulated in Mannheim. However, all vehicles must comply with the applicable Low Emission Zone requirements in Germany.

## Vision and policies for sustainable mobility and climate neutrality

The City of Mannheim has a clear vision behind its mobility policies to shift from individual car use to more sustainable modes of transport, such as cycling, walking, and public transport. The city has also focused on making the public transport system more efficient, reliable, and accessible for all citizens. The city's mobility vision is based on an integrated approach that considers the environmental, social, and economic aspects of sustainable mobility.

The political leadership of the city has been driving sustainability and innovation in the mobility sector, by supporting various projects and initiatives that promote low-carbon and smart mobility solutions. The technical personnel in the mobility-related departments have been supporting the city's mobility vision by implementing and monitoring the mobility policies and measures, as well as by providing technical expertise and guidance.

The citizens and the civil society of the city have been showing high interest for efficient public services.

The city of Mannheim has a strong commitment to sustainable mobility and climate neutrality, as demonstrated by the development of several strategic policies, such as the Sustainable Urban Mobility Plan, the Sustainable Energy and Climate Action Plan (SECAP), the Smart City Strategy and the Climate Neutrality Action Plan and is among the

Based on the SWOT-analysis, some **acceleration strategies** have been identified. Firstly, taking the advantage of the window of opportunity for bigger steps in public transport, by expanding public transport services, improving its quality and efficiency, attracting thus more customers. Secondly, using VRN (Transport Association Rhine-Neckar) activities on micro mobility to push forward the integration of mobility services, by collaborating with other providers, offering more options and convenience, and creating a seamless user experience. Thirdly, becoming the backbone of sustainable mobility in the region as the largest player with a large network, by demonstrating the commitment to environmental and social responsibility, enhancing the reputation and trust, and influencing policy and regulation.

There are three **improvement strategies** evidenced from the SWOT analysis:

- Use innovative technologies to improve the reliability of the service. This could help to reduce the operational costs, enhance customer satisfaction, and create advantages on the market.
- Increase the RNV-Network without relying on the existing Infrastructure solely, which could enable more flexibility, scalability, and efficiency in the public transport system.
- Evaluate the introduction of Express-Services that could offer faster and more convenient travel options.

Some **resilience strategies** can be formulated and implemented, according to the SWOT strategy:

- Use political support to ensure sufficient funding for resilience initiatives
- Develop push-measures together with stakeholders, that proactively create diverse solutions and foster collaboration and trust among different actors. These push-measures can address the weakness of low awareness or engagement and the threat of resistance or opposition from some groups.

Possible **intervention strategies** to address the weaknesses and threats related to public transport have been identified:

- Ensure political pressure on railway-infrastructure, by using ongoing projects as leverage. This strategy could help to secure more funding and support for the development and maintenance of the railway network, which is essential for mobility.
- Lack of employees in the driving service / attractiveness of the job - increasing the wages and benefits of the drivers, as well as providing more training and career opportunities. This could help to attract and retain more qualified and motivated staff, which would improve the quality and reliability of the service.
- Electricity prices rise faster than gasoline prices - investing in renewable energy sources and energy efficiency measures, as well as promoting the use of electric vehicles and public transport. This could help to reduce the dependence on fossil fuels and lower the environmental impact of mobility.

## SUMP + UPPER measures

The SUMP for City of Mannheim is under development and it is expected to be adopted by the end of 2023 /beginning of 2024. Its development is funded from the city budget.