



Dresden.
Dresden

Sustainable Urban Mobility Plan 2025plus

Initial evaluation

The initial evaluation of SUMP 2025plus

What have we achieved to date?

What do we want to achieve in future?



When developments are dynamic, it is essential to plan for the future to make in-depth, targeted decisions and point the way forward for the years and decades to come.

The Sustainable Urban Mobility Plan (SUMP) 2025plus provides a technical and political strategy for coordinated and balanced development of urban transport in Dresden. This plan was developed with broad-based participation and passed by Dresden's City Council at the end of 2014.

After three years of implementation, it is now time to look at the interim results. In accordance with the City Council resolution, a detailed report was produced. This brochure presents the report's contents in compact form.

It gives an overview of implementation of the SUMP to date, Dresden's transport and mobility development in recent years and the extent to which the targets set have been reached. It also reveals the future issues that must be incorporated in planning, and factors to consider when updating the plan.

Developments in Dresden point in the right direction: towards an environmentally, socially and city-friendly mobility. However, in our growing and ever denser city, space is becoming increasingly scarce. Transport competes with other uses such as quality of life, recreation, green spaces. For a mobile, healthy and clean city with equitable space distribution, improving accessibility, making public spaces more attractive and protecting the environment and resources are challenging tasks. And we are all called upon to get involved, as all of us use the transport and traffic systems (almost) daily. And how we get around has an impact on our city, our health, the environment and our wallets. Like our food, we all strive for variety and are putting together a 'mobility menu' for Dresden and the region as we implement the SUMP. It whets our appetites for new mobile experi-

ences. Attractive, future-proof services will enhance networking of transport options and make multimodal use easier. We want to offer Dresden's citizens comfortable and rapid mobility for their commutes and leisure activities. With smart and city-friendly services, we want to promote environmentally friendly mobility. MOBI – the first intermodal mobility point in Dresden, which was opened in September 2018 – is a milestone in this development.

This brings Dresden into line with trends in many growing European cities. Our partners in the European mobility network POLIS are responding to the pending challenges with similar services.

I believe it is important to develop a future-proof urban transport environment and increase the standard of living in Dresden with SUMP. Together, we want to make the city an attractive place to live, where we are happy to be and have a wide range of mobility options, where children can grow up happily and the elderly can age happily. A place where our guests can experience Dresden as a city where people enjoy excellent mobility.



Raoul Schmidt-Lamontain
Deputy Mayor for Urban Development,
Building, Transport and Municipal Properties

Contents

| | |
|---|-----------|
| 1. Introduction | 7 |
| Changing mobility | 7 |
| Planning the future today | 7 |
| New stimuli | 7 |
| Framework conditions | 7 |
| Monitoring and adjustment | 7 |
| 2. The Sustainable Urban Mobility Plan – Evaluation results | 8 |
| Positive interim results | 8 |
| Public response to the Sustainable Urban Mobility Plan | 8 |
| Monitoring results | 8 |
| Indispensable work of the support committees | 8 |
| Updates to the SUMP | 8 |
| 3. Monitoring and evaluating developments in the transport and mobility sector | 10 |
| Implementation progress of the measures | 10 |
| Evaluation of the resolution progress | 11 |
| Pilot project status | 11 |
| SUMP pilot projects | 11 |
| Monitoring and evaluation of mobility KPIs | 12 |
| Monitoring of important framework conditions | 12 |
| Passenger car ownership and motorisation | 12 |
| Commuters | 12 |
| Motor vehicle drive types | 12 |
| Motor vehicle traffic on bridges and at counting points | 13 |
| Motor vehicle traffic on the Elbe bridges | 13 |
| Bicycle traffic volumes | 13 |
| Length of cycling network | 13 |
| Implementation status of the SUMP measures (selection) | 14 |
| Investments in roads and paths | 16 |
| Costs of mobility in motor vehicle traffic and local public transport | 16 |
| Monitoring and evaluation of indicators associated with development targets | 17 |
| Modal split by routes | 17 |
| Modal split by transport performance | 17 |

| | |
|--|-----------|
| Multimodality | 18 |
| Average speeds of local public transport and motor vehicle traffic | 19 |
| Passenger figures in rail-based local public transport | 19 |
| Passenger figures on Dresdner Verkehrsbetriebe trams/buses | 19 |
| Accessibility in the local public transport network | 20 |
| Population in the catchment area of stops | 20 |
| Traffic safety | 20 |
| Carbon dioxide emissions | 21 |
| Particulate matter pollution – PM ₁₀ emissions | 21 |
| Nitrogen oxide emissions | 21 |
| Noise pollution | 21 |
| Green spaces in the city | 21 |
| Evaluation of the SUMP targets | 22 |
| Traffic studies required | 23 |
| 4. Effectiveness of SUMP as a plan | 26 |
| Administrative implementation | 26 |
| Effectiveness and benefits in participation committees | 26 |
| SUMP Rund Table | 26 |
| Neighbours/Rgional Round Table | 26 |
| Public relations | 27 |
| National public relations | 27 |
| International public relations | 29 |
| Effectiveness of the plan: Summary | 29 |
| 5. Prospects: Updates to SUMP 2025plus | 30 |
| Future issues | 31 |
| Digitalisation and sustainable mobility | 31 |
| Automated and autonomous driving in the city | 31 |
| Data collection and data use | 31 |
| Intermodal services and links (mobility as a service/sharing/smart city) | 32 |
| Electromobility and charging infrastructure | 32 |
| Integrated mobility management | 33 |
| The future of urban mobility – the future for Dresden | 33 |



1. Introduction

Mobility and cities have been inseparably linked for as long as anyone can remember. Cities grew at junctions of important transit routes. Transporting goods and trade have always been their heart, markets their pulsating centres, while their main streets and squares have been stages for public life.

Rolling wheels, transporting goods and people, have always been a key basis for urban transport with the required road and rail networks, the transport infrastructure. Without shipping, waterways and ports, national and global exchanges of goods would be inconceivable, even today. Air traffic has become a key economic factor in recent decades.

Changing mobility

In the modern era, the transport world is changing rapidly. Information technology has sped this process up even further. In just a few years, we have arrived in the digital age, without realising it initially. Computer-aided timetable, transport and supply chain data, accurate to the second, including corresponding production processes, company and public administration opening hours have long set the pace of urban transport.

Digital management and ongoing monitoring of traffic flows will become increasingly important, not least with view to the ever faster increase in air pollution and the corresponding climate change since the onset of industrialisation. More than ever before, pollution emissions, and emissions of CO₂ in the transport sector, which is doing such damage to the climate, must be reduced. This requires more than a transition to drives besides the combustion engine, and more than a transition to more environmentally friendly modes of transport. It also takes intelligent transport

management and new cooperative forms of mobility, like those pointing the way forward in Dresden and many European cities.

Planning the future today

We must plan for the future now – for a future we cannot adequately predict. In spite of this, the plans we produce must be open for developments and thus open for the future. And they must be produced with the involvement of many participants. Urban transport and mobility affect all of us: companies, employees, students, visitors, young and old, people on two and four wheels, pedestrians, people in wheelchairs or with walking frames.

With its Sustainable Urban Mobility Plan (SUMP) 2025plus, passed by the City Council in 2014, the City of Dresden is facing up to this challenge, as are a growing number of European cities. The timeframe for SUMP goes far beyond the next decade.

New stimuli

Plans of this kind are extraordinarily complex, like a sophisticated clockwork. They must meet a wide range of requirements, in particular coordinating and implementing all measures to design transport systems frequented by very many, very different users. Ongoing, cost-intensive maintenance is just as important.

Both design and maintenance of the transport infrastructure must be linked with new stimuli for the future transport system of a growing city.

The primary focus is not on self-driving cars. The challenges of tomorrow are more in providing even better accessibility

day and night, and in guaranteeing comfortable, environmentally friendly, safe and affordable mobility for young and old.

Framework conditions

In a democratic process, all this is subject to political decisions by the City Council and ongoing budgetary constraints. Diverse external framework conditions, on which cities like Dresden have little to no influence, also play a role. However, they are also crucial for determining their scope and mobility development. They include national legal, taxation and financial specifications and their impact on municipal planning and investment decisions. There are also many national and European regulations, specifications and limits. The changing conditions in global trade, especially the oil price development, influence the advancing changes in urban mobility.

Monitoring and adjustment

To return to the clockwork metaphor: The intermeshing components of the complex SUMP 2025plus must be observed constantly and assessed, for accuracy like a clockwork, via monitoring.

Adjustments must be made at regular intervals on this basis: For this purpose, and to allow the planning process to be monitored for goal achievement, evaluation is essential to measure success. This brochure is intended to present the initial interim results in an attractive package.

2. The Sustainable Urban Mobility Plan – Evaluation results

Positive interim results

Based on the existing evaluation results, implementation of several measures from the Sustainable Urban Mobility Plan (SUMP 2025plus) has already been completed just three years after the City Council resolution. More are still in the implementation process. Significant targets of the Sustainable Urban Mobility Plan have also been reached. The work of the committees that have supervised the planning and implementation of the SUMP – the Round Table and the Neighbours/Regional Round Table – has proven successful. This also includes contributions to implementing the plan by key institutions represented in them.

Public response to the Sustainable Urban Mobility Plan

The results of the supporting public relations measures and the positive response to these measures in Dresden and elsewhere can be verified based on several examples. This focuses in particular on Dresden's contribution within the European POLIS network. Under Dresden's presidency, the city hosted the annual conference of this co-operation association comprising 70 European cities and regions in 2010. The conference offered an opportunity to discuss SUMP 2025plus, which had started several months previously, as part of a forum of high-ranking experts. The specialist debate with national and international experts marked the start of an experience sharing process that continues today.

Today, Dresden's SUMP is one of many international examples of Sustainable Urban Mobility Plans (SUMP), which have established themselves as best practice throughout Europe.

Monitoring results

Overall, the results after three years of implementation of SUMP 2025plus are instructive. The monitoring data provides interesting findings. It shows that the relationship between population growth and the increase in motorised traffic has shifted significantly. The population figures have grown faster than motorised traffic. At the same time, the environmental pollution caused by traffic can be seen to decrease, and the accessibility of many destinations in the city has improved. According to the latest surveys, the general satisfaction with transport services in Dresden is high. These positive findings motivate us to continue to develop environmentally friendly mobility solutions that take the needs of many local and visiting transport and traffic users into consideration. In doing so, the beauty of the city is just as important as the effectiveness, economy and performance of the transport system. Realising forward-looking ideas, measures and pilot projects are particularly important in this context. This will require further efforts in the years to come.

Indispensable work of the support committees

The work of the committees supporting the implementation and evaluation of the SUMP has been successful to date, and will remain indispensable in future. The willingness of all institutions, associations, transport service providers and authorities to participate in the implementation and evaluation process are impressive signs of this commitment.

In particular, the fact that awareness of all involved that transport development in Dresden depends on a wide range of influences and framework conditions has been heightened, is noteworthy. There is

unanimous agreement that SUMP 2025plus can only be implemented successfully with joint responsibility of many stakeholders – transport companies and mobility service providers, industrial companies, businesses and science – together with the City of Dresden, and ultimately also with all users of transport and traffic systems.

The municipal administration provides stimuli and drives the implementation process. The administrative steering group plays an important part, as it facilitates interaction of the various specialist municipal offices involved in implementation.

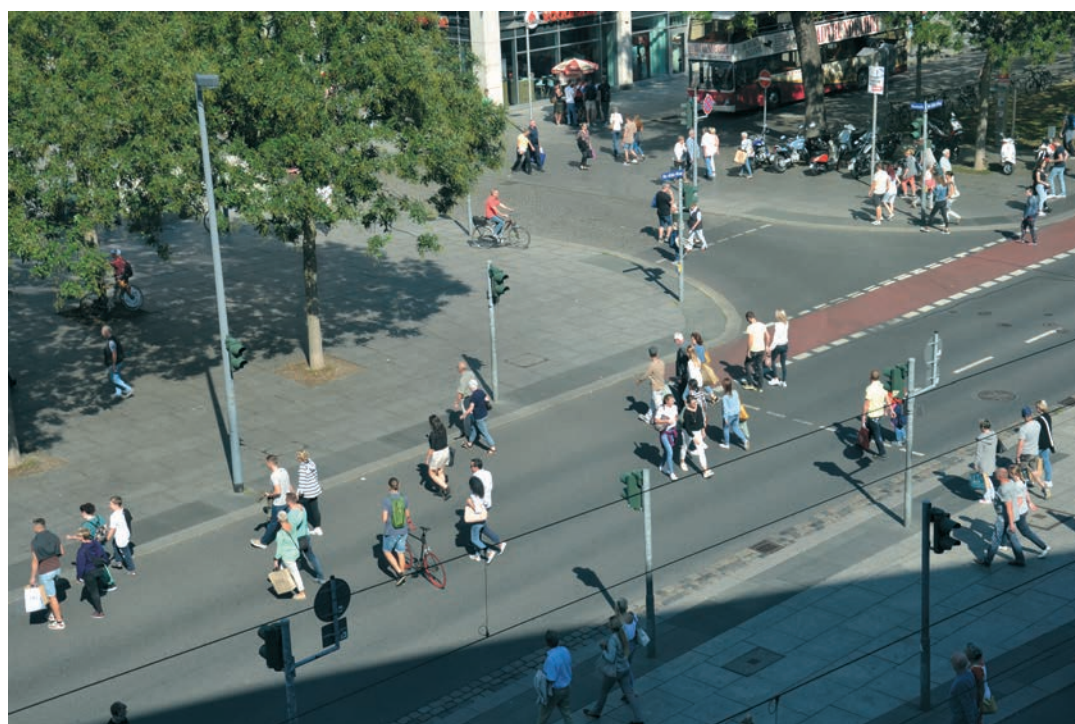
Updates to the SUMP

An initial evaluation was completed in 2018 based on data from 2017; a second evaluation is scheduled for 2020. Then, the results of the current survey of mobility behaviour – the System of Representative Traffic Surveys (SrV) 2018 – will also be incorporated. This survey is conducted by Dresden University of Technology in many German cities at five-year intervals. Its results will be available by late 2019. The second evaluation will also mark the start of the update to SUMP 2035plus. It is already obvious today that this will be necessary given the dynamic changes in the latest technological and social developments and their effects on urban transport and traffic.



↑ Dresden, aerial view from the south-west

↓ Pedestrians on Dr.-Külz-Ring



3. Monitoring and evaluating developments in the transport and mobility sector

Dresden's City Council passed SUMP 2025plus on 20 November 2014. The resolution included a requirement to report to the City Council at three-year intervals on the implementation of the plan. The administration is now submitting a report containing the results of the first evaluation as of 2017.

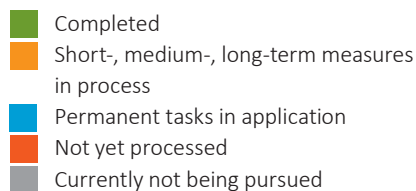
Implementation progress of the measures

Of the total of 147 measures outlined in SUMP 2025plus, 90 are classified as short-term, medium-term or long-term tasks, and 57 are classified as permanent tasks.

Five categories can be distinguished (see diagram below):

Short-term, medium-term and long-term measures

Work on a quarter of the 90 measures has been completed, almost two thirds are still in process, nearly ten percent has not been started yet, and four are currently not being pursued.



Permanent tasks

Permanent tasks run indefinitely. They must be worked on constantly and involve ongoing maintenance of the road network, for example, or bringing the cycle path network up to the latest standards. Of the 57 permanent tasks, 51 are currently being applied, five have not been started yet, and one has been postponed.

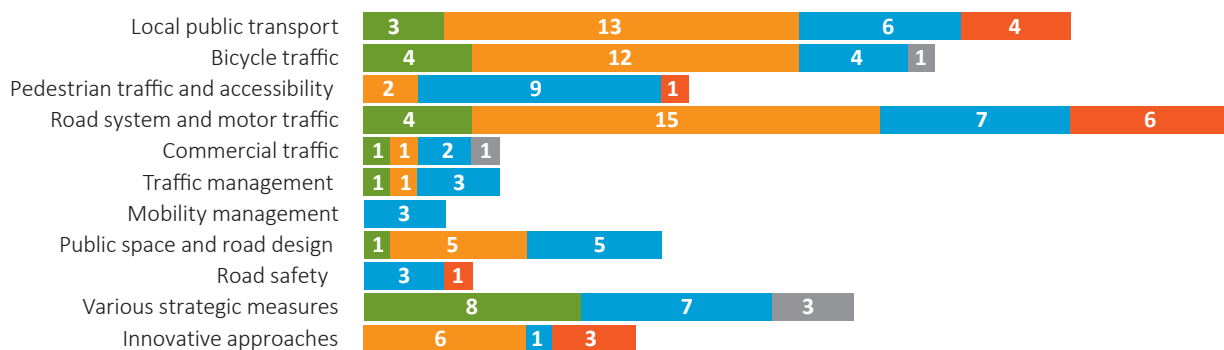
Measures with regional reference

One of SUMP 2025plus' goals is to incorporate the traffic and transportation concerns of Dresden's neighbours. This was put into practice by reaching out to the surrounding municipalities and adjacent districts, the Free State of Saxony and regional institutions at an early stage. The guiding principle is to include joint traffic and transport projects in the plan. Of these 19 out of the total 90 short-term, medium-term and long-term measures, four are completed, four have not been started yet, nine are in process and two are currently not being pursued.

Overview map

The overview map on pages 14/15 shows a selection of 30 key measures in all categories. The colours used there are the same as those in the diagram below.

↓ Implementation status by measure type



Evaluation of the resolution progress

Since the City Council passed the Sustainable Urban Mobility Plan, there have been other political resolutions on the plan. They included 48 on its continuation, 22 on maintaining existing traffic infrastructure, as well as two which do not comply with SUMP 2025plus. The latter are

- not building an interchange stop for the suburban rail and tram networks on Nossen bridge. According to the latest status, planning is to be resumed based on altered framework conditions,
- postponement and reclassification of the Bühlau – Weißig tram extension.

Pilot project status

The Sustainable Urban Mobility Plan's measures will be supplemented by eight pilot projects (see box). Their goal is to trial new technologies in the transport sector, explore ways to optimise traffic organisation workflows and make model experiments possible. The catalogue of measures is not exhaustive. It is to be worked through as time, personnel and finances become available.

SUMP mentions six more innovation approaches in addition to the pilot projects. Three of these have not been started yet. Another three are in process, for example: Lockers for cyclists and park + bike locations.



↑ Example pilot project 5: Special cycle lane

↓ Example pilot project 7: 'MULTIMOBILE. For you. For Dresden' campaign



SUMP pilot projects

- Pilot project 1
Municipal pilot project on low-car mobility in the Weißeritzstrasse/Schweriner Strasse/station Dresden-Mitte area.
- Pilot project 2
Switching five pedestrian traffic lights outside intersections to 'dark-dark mode' – i.e. pedestrian-activated; also 'all-green configuration' for pedestrians at traffic lights near intersections – both with scientific evaluation.
- Pilot project 3
Provision of new pedestrian crossings at suitable locations – with continuous observation of any changes in behaviour of pedestrians when crossing, and potential conflicts with other road users.
- Pilot project 4
Design of shared spaces on five streets and squares taking tram traffic into account in particular.
- Pilot project 5
Establishment of special cycle lanes on five main roads, continuously accompanied by a safety audit and monitoring.
- Pilot project 6
Campaign for more car sharing locations using private land with corporate support to provide signage and make them easier to find.
- Pilot project 7
Campaigns to promote multimodality and sustainable modes of transport as a model project of the City of Dresden, Dresdner Verkehrsbetriebe, Verkehrsverbund Oberelbe, Dresden University of Technology and others. The objective is to systematically promote walking and cycling as modes of transport and the use of local public transport.
- Pilot project 8
'Smart City' pilot projects on mobility and traffic management, intermodal navigation and information systems, supplemented with individualised guided tours with electric vehicles and educational campaigns.

Monitoring and evaluation of mobility KPIs

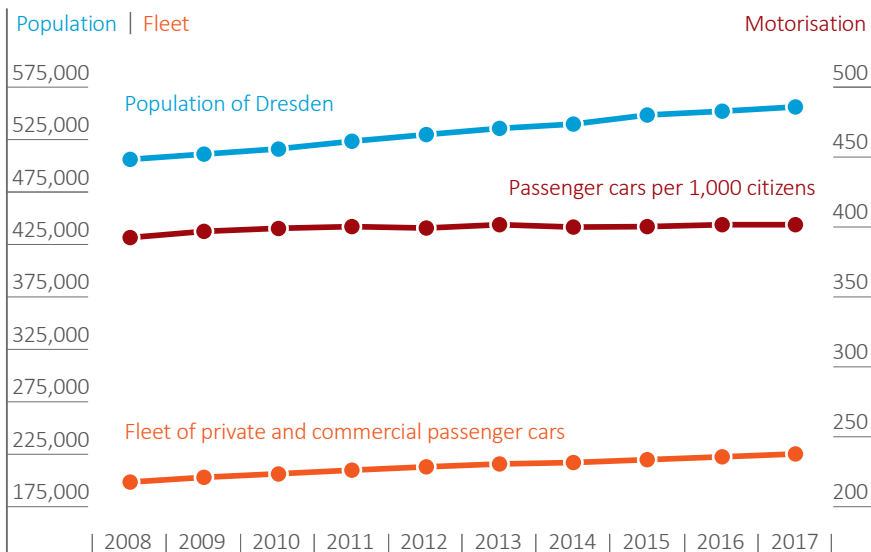
Monitoring and evaluation are required to assess the progress achieved in implementation and effectiveness of SUMP 2025plus. Monitoring refers to continuous status supervision of individual measures via systematic collection of suitable data. They are linked to indicators. Evaluation goes above and beyond monitoring, by assessing processes and projects. Reviewing whether the targets defined for SUMP have been reached is particularly important.

Monitoring of important framework conditions

Passenger car ownership and motorisation

Dresden's population is growing constantly year over year. Besides the population, the number of private and commercial passenger cars registered in the state capital has also risen. At the same time, motorisation remained virtually constant at about 400 passenger cars per 1,000 citizens.

↓ Motorisation and motor vehicle fleet



Commuters

Commuting links with cities and communities outside Dresden have risen. The number of outbound commuters rose faster than that of inbound commuters. In 2017, 92,000 people came to their workplace or training centre in Dresden every day. In the same year, 54,000 outbound commuters left the city every day.

Motor vehicle drive types

At almost two thirds (64.4 percent) and one third (33.7 percent) of all cars registered in Dresden respectively, the petrol and diesel engines are the predominant drive types. Cars with alternative drives still remain rare: Electric drives account for 0.1 percent, hybrid 0.9 percent and others (gas, hydrogen) 0.9 percent.

The trend towards electric bikes is remarkable: From roughly 3,000 pedelecs in 2013, the figure had almost doubled by 2016.



↑ Rush-hour traffic on Marienbrücke



↑ Dresden city traffic



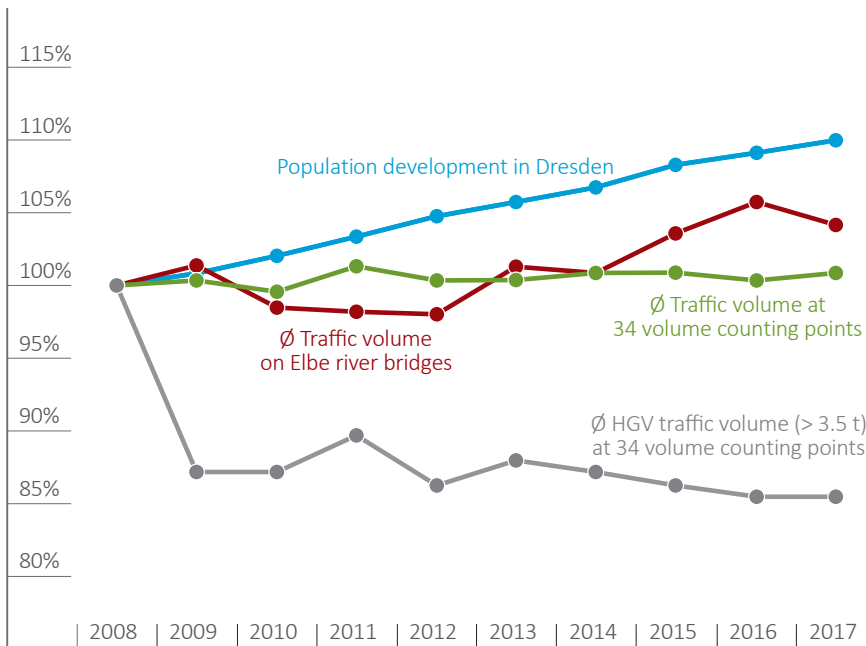
↑ Alberthafen, Schlachthofstrasse

Motor vehicle traffic on bridges and at counting points

Growing population and commuter figures and more registered cars are not increasing motor traffic in Dresden. With unchanged levels of motorisation, possible reasons for this are less passenger car use, shorter distances and more passengers in cars, especially among commuters.

Passenger car traffic volumes in the city centre, i.e. within the inner city ring, have remained constant. Data available from three counting points indicates an average working day mean of roughly 21,500 cars. The targeted decrease of five percent – roughly 1,000 fewer vehicles – has not occurred yet.

↓ Dresden motor vehicle traffic on bridges and at volume counting points



Motor vehicle traffic on the Elbe bridges

The traffic volume on the Elbe bridges rose slightly between 2015 and 2017. Besides the construction of new residential and industrial areas in the metropolitan area and the resulting additional traffic, key reasons for this include new bridge connections in Niederwartha and at Waldschlösschen.

Bicycle traffic volumes

As with passenger car traffic, cycling figures are also recorded at counting points in Dresden. Due to the low number to date and increased weather dependency of cycling, average figures fluctuate more than motorised traffic. An evaluation of six counting points shows that cycling traffic volumes are stagnating.

There is no statistical data on bicycle ownership. The SrV household survey for 2013 indicated that 74 percent of all households owned one or more bicycles. Accordingly, the availability of bicycles among Dresden's population is significantly higher than that of passenger cars. In 2014, there were 403 passenger cars per 1,000 citizens, compared with 885 bicycles per 1,000 citizens.

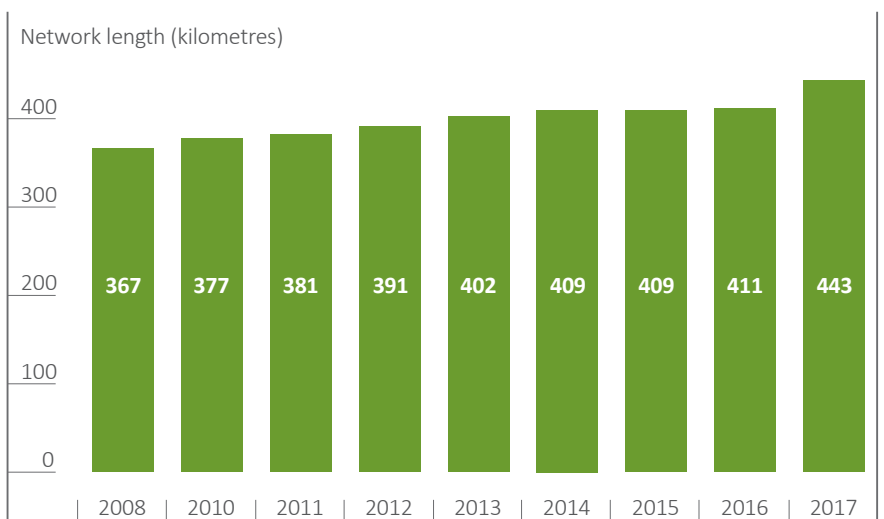
Length of cycling network

An evaluation of the overall length of Dresden's network of cycle paths indicated an increase of almost 20 percent to a current figure of 442.7 kilometres.



← Bicycle traffic in Dresden is on the rise

↓ Length of bicycle traffic network



Implementation status of the SUMP measures (selection)

Measures with term

Completed

- 1** Suburban rail expansion Coswig – Dresden-Neustadt, 15-minute intervals on Line S1 and new Bischofsplatz station
- 2** Redesign and reconstruction of Albertbrücke
- 3** Integrated bicycle traffic concept for the entire city and step-by-step implementation
- 4** Two-lane design of Bautzner Strasse between Hoyerswerdaer Strasse and Martin-Luther-Strasse
- 5** „MULTIMOBILE. For you. For Dresden.“ campaign promoting inter-modal mobility primarily for bicycles, local public transport, cars-sharing and electromobility

In process

- 6** Tram programme 2020: Löbtau – Strehlen section
- 7** Tram programme 2020: Johannstadt – Sachsenplatz, Fetscherplatz – Rathenauplatz – Dippoldiswalder Platz section
- 8** Central stop Kesselsdorfer Strasse
- 9** Improvement of Königsbrücker Strasse between Industriegelände and Olbrichtplatz and between Olbrichtplatz and Albertplatz
- 10** Plans for a bicycle parking facility at Wiener Platz
- 11** Plans to redesign the Blaues Wunder bridge, improving pedestrian crossings and bicycle traffic routing
- 12** Plans for an intercity bus station at the Central station
- 13** Extensive public bike rental service in the entire inner city area, at local public transport interchanges, key car parking areas, and in selected district centres as an inter-modal service
- 14** Suburban rail stations Albertstadt and Nossen Bridge
- 15** Concept for multi-modal mobility stations with car-sharing parking on public road space

Not yet processed

- 16** Tram programme 2020: Bühlau – Weissig section
- 17** Feasibility studies for selected inner city and district centre areas as accessible shared spaces with particular regard on tram traffic

Ongoing permanent tasks for the city as a whole

- Preservation the existing urban transport network and refurbishment of the road network
- Maintenance and development of the public transport system
- Road safety aspects
- Particular consideration of pedestrian's needs
- Expansion and refurbishments of deficient footpaths and pedestrian crossings, with particular regard on accessibility for persons with limited mobility
- Enterprise and location-specific mobility management
- Expansion of parking facilities for bicycles as well as Bike+Ride
- Channelling motor traffic based on a high-performance road network
- Expansion of the traffic management centre
- Approval of area-appropriate local services, child care and educational institutions in residential areas and dense route connections to ensure local mobility
- Improving vehicles and ticket purchase accessibility for local public transport
- Adaptation of all existing bicycle traffic facilities that do not meet the regulations; general reduction of footpath use by cyclists
- Priority use of well-connected and integrated locations for new residential areas, public institutions and schools



Measures with regional reference

- 18** Construction of new state road 191
- 19** Keeping the track clear for urban rail line Pennrich – Kesselsdorf and Kaditz – Radebeul-Ost
- 20** Cooperation for commuter parking spaces
- 21** Construction of new state road 177
- 22** Expansion of Hamburger Strasse with local public transport interchange in Cotta
- 23** Completion of new state road 84 and new road 6
- 24** Tram line to Ottendorf-Okrilla – Königsbrück
- 25** Improvement of regional bus services towards Moritzburg and Bannewitz
- 26** Corridor for expansion of regional cycle routes Radebeul – Radeberg – Heidenau – Pirna – Klipphausen – Bannewitz – Freital – Kesselsdorf – Wilsdruff and others
- 27** Motorway connection Weixdorf, 'Am Promigberg' industrial park
- 28** Increase in frequency towards Bischofswerda and third track
- 29** Bus via Niederwartha bridge
- 30** Construction of road link Sporbitz

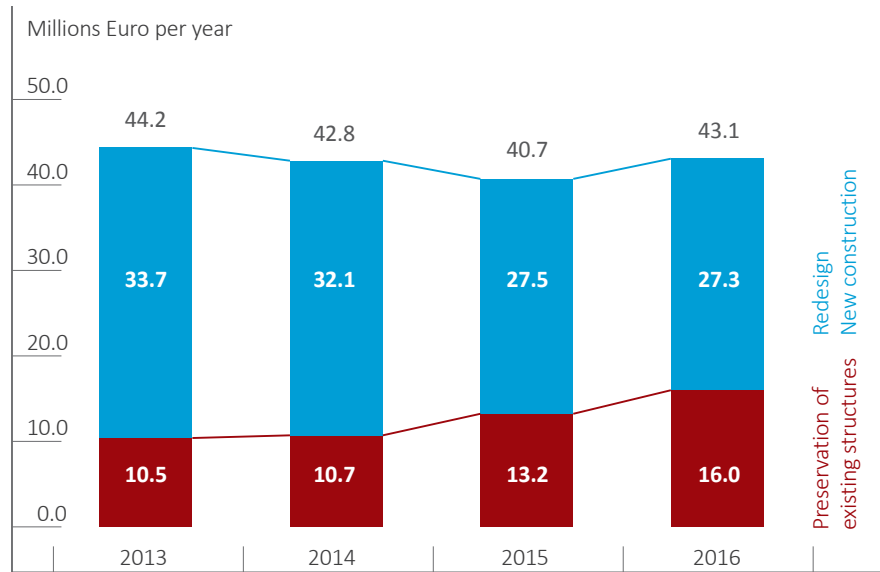


Herausgeber : Landeshauptstadt Dresden
 Hersteller : Stadtplanungsamt Abteilung, Verkehrsentwicklungsplanung
 Bezugssystem : Lage: ETRS89_UTM33
 Grundkarte: Stadtgebiet: Amt für Geodaten und Kataster
 Ausgabe vom: September 2018

Verarbeitung unter Verwendung elektronischer Systeme und Verbreitung nur mit schriftlicher Genehmigung des Herausgebers/Eigentümers. Die analoge Vervielfältigung und Weitergabe für eigene, nicht gewerbliche Zwecke ist gestattet.

Investments in roads and paths

In recent years, the annual expenditures for maintaining and expanding the transport infrastructure have been over 40 million Euros. Of that, roughly 16 million was spent on maintenance and 27 million on expansion and construction of new bridges, roads and paths. The costs are likely to increase steadily. Even the investments to date already failed to cover the required overall expenditures. In future, it will take far higher funding to maintain the traffic infrastructure at the current level.



↑ Investments in maintenance and construction of roads and footpaths, compared, 2013 – 2016



← The reconstructed Albertbrücke

→ Construction site Augustusbrücke



Costs of mobility in motor vehicle traffic and local public transport

When comparing costs between parking fees in the city centre, a single ticket on local public transport and the average petrol price directly, the result is clear: Local public transport costs have risen 28 percent, while parking fees remained constant at the same level as 2008 until 2017, and the price of petrol has even decreased somewhat.

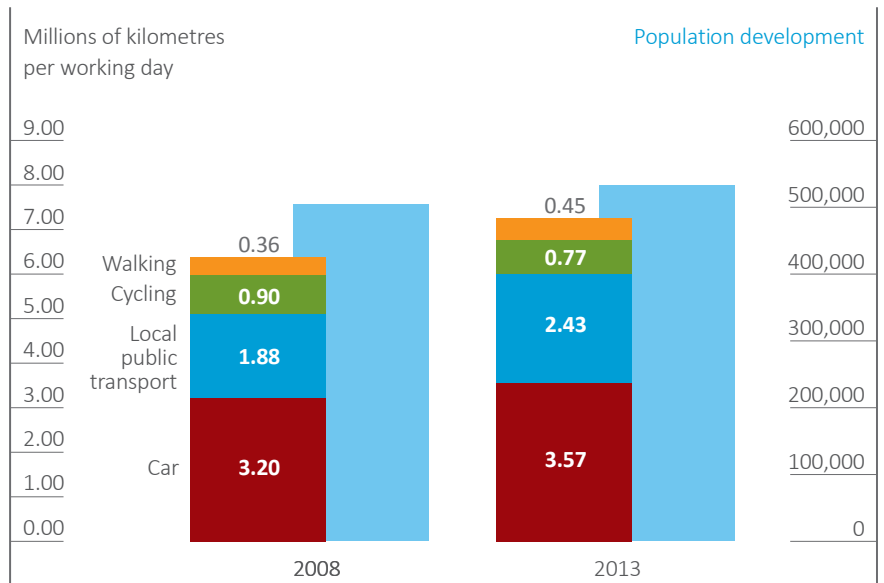
Monitoring and evaluation of indicators associated with development targets

Modal split by routes

The 2013 household survey 'Mobility in cities – SrV' provides specific figures on the mobility of Dresden's resident population. The results of the next study will be available at the end of 2019. The modal split, i.e. the percentage of routes travelled with the main means of transport, reveals the following trends:

- At 61 percent, sustainable modes of transport, i.e. local public transport, cycling and walking account for the greatest percentage of the modal split for all journeys in Dresden, and will grow in future. This percentage has risen by two percent points since 2008.
- In particular, the lower cycling percentage in 2013 was primarily due to external influences. There was snow on the ground until Easter, and it rained almost twice as much as in 2008.
- In 2013, local public transport benefited greatly from the lower cycling figures due to the weather conditions.
- Availability of passenger cars is increasing, but frequency of personal car use is decreasing.
- New mobility services (car sharing, bike rental systems) are particularly popular with young people.

The SUMP target of increasing the percentage use of sustainable modes of transport has been achieved.



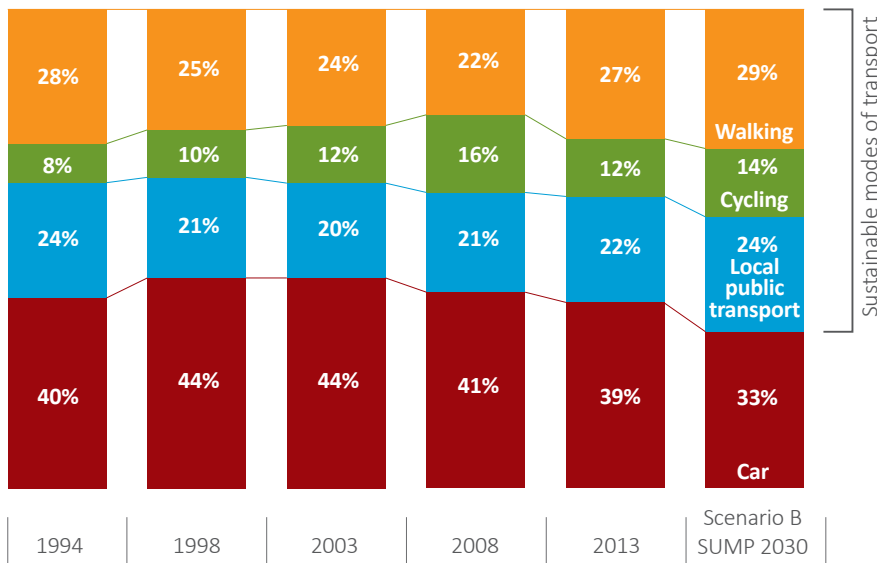
↑ Modal split by transport performance compared, 2008 – 2013

Modal split by transport performance

Dresden's growing population is travelling further within the city limits, and doing so on 90 percent of all journeys. More than 50 percent of journeys are less than three kilometres. The transport performance – the annual distance travelled within the city on working days – increased slightly in car traffic, but less than the increase in population figures. Transport performance in local public transport, walking and cycling increased at a higher rate. This development not only results from the increase in population, but also on a higher number of shorter journeys in car traffic. On average, the distances travelled by car in Dresden in 2013 decreased from 6.2 to 5.8 kilometres per trip compared with 2008. Among other reasons, this is due to an increasingly dense urban structure and a stronger development of the inner city.

The SUMP target of increasing the percentage of sustainable modes of transport of transport performance has been achieved.

↓ Modal split by route Comparison with SUMP scenario B

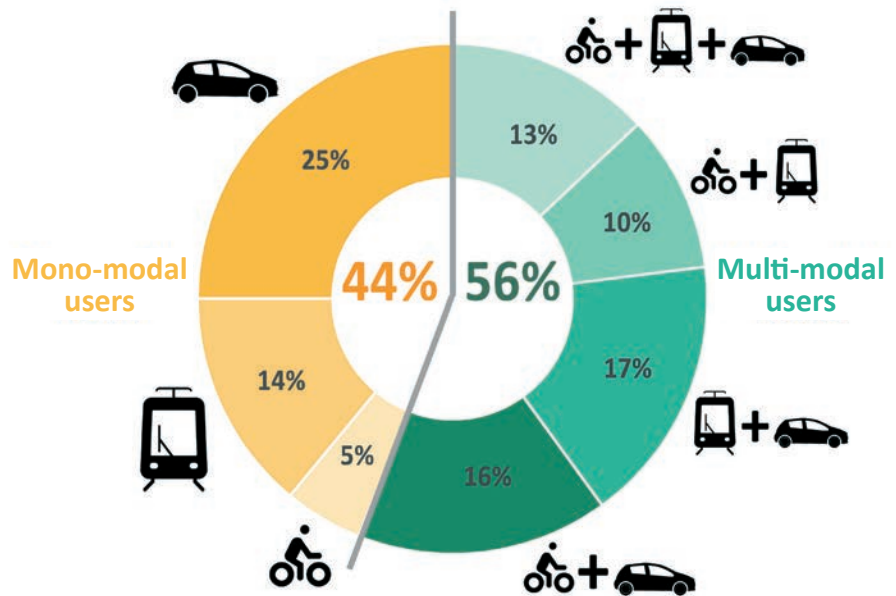


Multimodality

People increasingly switch means of transport during their journeys within Dresden. This means that they not only travel on one means of transport (monomodal), they use several means of transport (multimodal). That is in line with national and international trends. However, we do not have any more precise data spanning several years on this. For 2013, the situation is as follows:

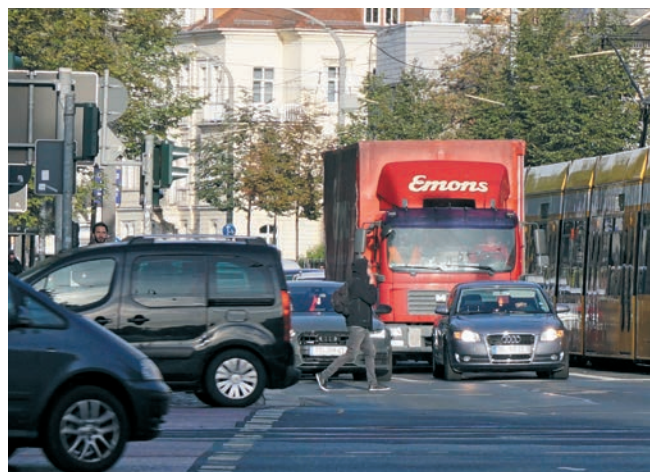
The increasing number of car sharing users makes a significant contribution to multimodal behaviour. Statistically, roughly 35 members use a single car sharing vehicle. While the overall number of passenger cars registered in Dresden (private and commercial) rose by 4.2 percent between 2013 and 2017, the number of car sharing vehicles rose by 62 percent to 300 vehicles.

Statements on the SUMP target to increase the percentage of multimodal use can only be made from the end of 2019, as the SrV 2018 survey is currently not complete yet.



↑ Percentages of mono- and multi-modal users

↓ Mono- and multi-modal in Dresden



Average speeds of local public transport and motor vehicle traffic

Travel time measurements are surveyed annually by Dresden University of Technology. This is done by evaluating data from the DVB AG control centre and by driving cars on defined routes. While the speed in local public transport has remained almost constant, the average car speed decreased from 2010 to 2016, but rose in 2017. With the exception of 2017, this results in a relative speed improvement for local public transport.

The SUMP target of improving the relative speed of local public transport over car traffic was only achieved between 2012 and 2016.

Passenger figures in rail-based local public transport

Passenger figures at railway stations, including suburban rail, are rising. In 2016, 25 percent more passengers travelled by train or suburban rail compared with 2009. The one-off slight decrease in 2014 can be traced back to the suburban rail reconstruction between station Dresden-Neustadt and Radebeul/Coswig (route closure, replacement bus service).

The rising rail passenger figures are primarily based on improved services (as enhanced track capacity on S1 Central Station – Meißen) and improved stops and stations (accessibility). Figures can be expected to rise further in 2018 in line with the enhanced track capacity on the S1 line to Pirna.

The SUMP target of increasing the passenger figures in rail-based local public transport has been achieved to date.

→ Local public transport increasing popularity

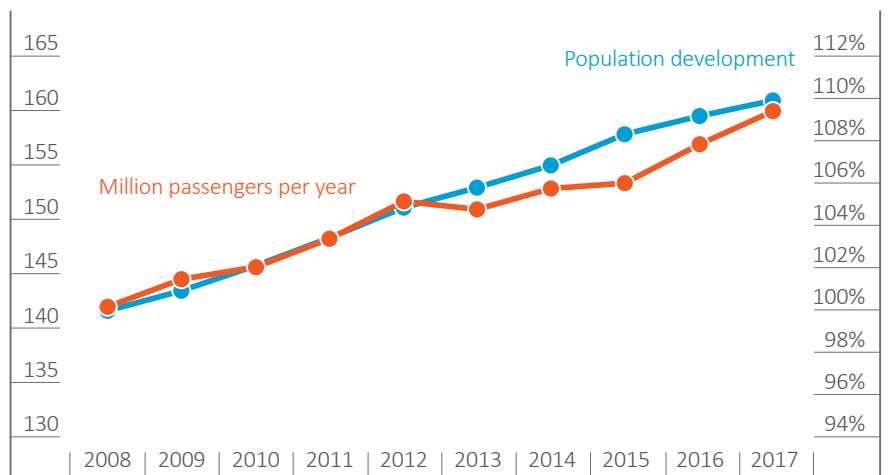
Passenger figures on Dresdner Verkehrsbetriebe trams/buses

DVB AG's passenger figures are increasing constantly and reached the annual 160 million passenger mark for the first time in 2017. Accordingly, the trend largely mirrors the population development. Since 2015, the passenger increase has exceeded the population increase.

The number of subscription customers and job tickets has also increased continually, while the number of semester tickets for students decreased slightly. However, even this reduced figure remains at an impressive 38,000 tickets. Also, in DVB AG's local public transport services, the timetable kilometres for trams increased from 13.04 million kilometres in 2003 to 13.75 million kilometres in 2016.

The SUMP target of increasing passenger figures in DVB AG's trams and buses has been reached.

↓ Development of local public transport passenger figures, annual comparison



Accessibility in the local public transport network

An action plan to implement the UN Convention on the Rights of Persons with Disabilities and the Passenger Transport Act aims to make local public transport wheelchair accessible by 2022. As part of this action plan, a stop register is being compiled, including an analysis of all bus stops.

- **Vehicle accessibility:**
DVB AG's vehicles – trams and buses – are all low-floor vehicles. The trains on suburban rail lines 1, 2, and 3 are largely wheelchair accessible.
- **Stop accessibility:**
All 17 suburban rail stations in Dresden are wheelchair accessible; for the suburban rail and local rail-based services, 20 of a total of 26 stops are accessible. In 2015, 301 of all 505 tram and combined tram/bus stops were wheelchair accessible, some with ramps.

The SUMP target of making local public transport accessible has been achieved to date.



↑ Free accessibility of buses and trams

Road safety

The number of accidents in Dresden has not decreased to date. Since 2011, the total number of road traffic accidents annually has exceeded 15,000 (2016: 15,703). Only in 2011 (15,386 accidents) did it decrease by one quarter compared with 1999 (20,666 accidents).

Overall, the number of accidents with personal injuries remains at the same level as in the 1990s and 2000s. It has not decreased since then.

In 2,214 accidents in 2016, 427 persons were seriously injured, 2,251 suffered minor injuries and eleven people lost their lives. This figure has decreased since 2014, when 16 persons died in traffic accidents in Dresden.

One of the goals of the City of Dresden's traffic safety concept is to reduce the number of traffic accidents involving injuries and fatalities. In spite of this still sad result, this target has been reached in the short term. However, the accident figures must decrease significantly – also per the requirements of the German national '2011 Road Safety Programme'.

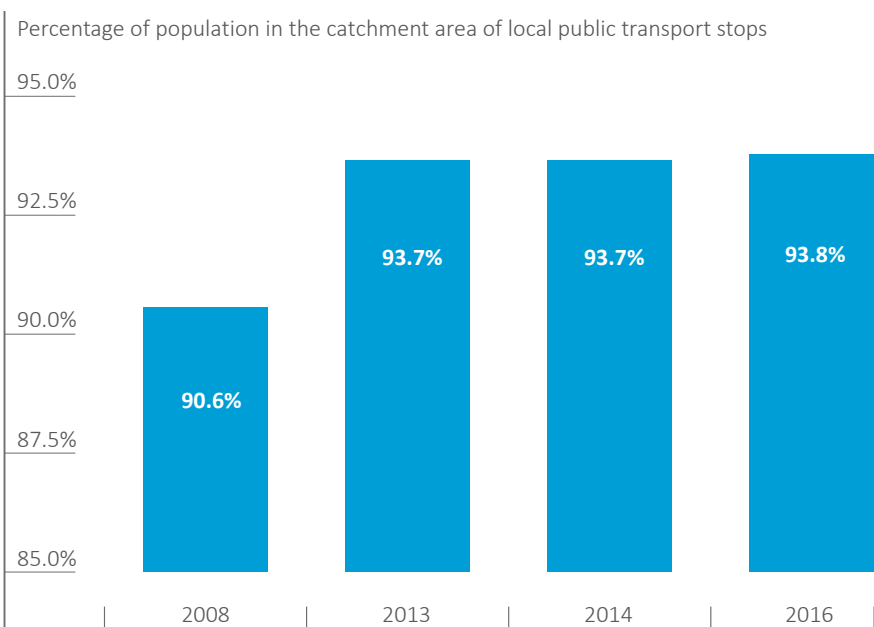
Nonetheless, the SUMP target of decreasing the traffic accident fatalities by half compared with 2007 has been reached.

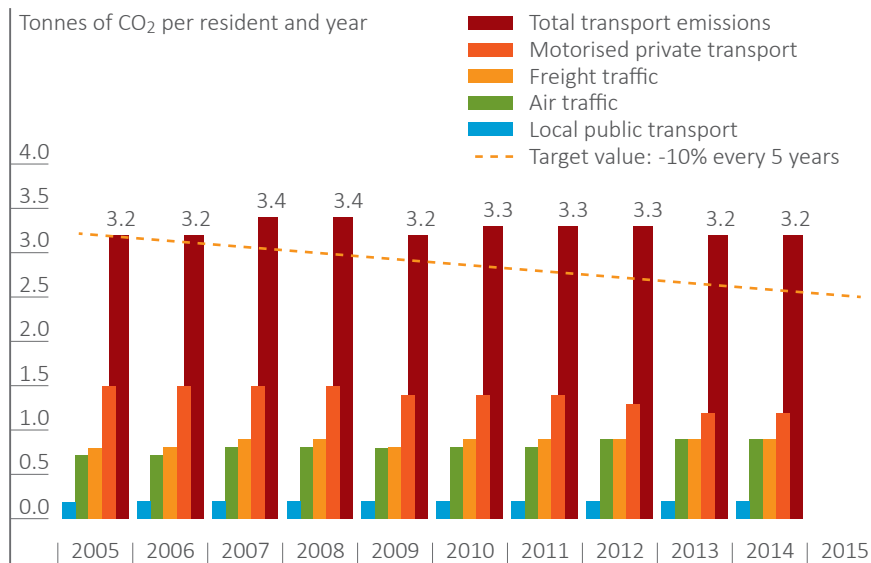
Population in the catchment area of stops

93.8 percent of Dresden's population live within walking distance of local public transport stops. Special improvements in quality of the network result from the proximity to suburban rail stations. Compared with 44,500 in 2014, almost twice as many people, namely 78,500, lived within the 600-metre catchment area of suburban rail and railway stations in 2016. "Accordingly, almost all residential areas are easy to access with local public transport.

The SUMP target of increasing the number of residents in the defined local public transport catchment area has been achieved to date.

↓ Development of population percentage in public transport catchment areas





↑ CO₂-emissions per resident by transport mode

Carbon dioxide emissions

The requirements stipulated in the ‘Integrated Energy and Climate Protection Concept Dresden 2030’ had not been reached by 2014. It aims to reduce overall per-capita CO₂ emissions in the population by ten percent every five years. However, the figure was just as high in 2014 as it had been nine years previously in 2005.

Due to a lack of data for more recent years, achievement of this target cannot be assessed accurately.

The SUMP target to reduce overall per-capita CO₂ emissions in the population by ten percent every five years (reference year: 2005) had at least not been reached by 2014.

Particulate matter pollution – PM₁₀ emissions

Particulate matter pollution (particle diameters below 10 µm = PM₁₀) is declining in Dresden. Since 2015, there have been no problems in complying with the threshold of exceeding 50 µg per cubic metre of air on daily average only 35 times a year.

The PM₁₀ figures remain under the thresholds. The SUMP target has been reached.



Nitrogen oxide emissions

The threshold for nitrogen dioxide NO₂ is an annual average of 40 micrograms per cubic metre of air. Since 2013, the measurements have come in under this figure at two measuring locations (station Dresden-Neustadt and Winckelmannstrasse). On the other hand, the figures at the Bergstrasse measuring location continued to exceed the threshold until 2016.

The annual average limit for NO₂ emissions measured at Bergstraße remains above the permitted level. As a result, the SUMP target is currently not reached.

Noise pollution

A municipal citizen survey assessed the noise pollution from road traffic. The survey participants responded that the noise has remained unchanged at a high level. A noise level of over 65 dB(A) measured at building façades is considered a guideline for a harmful continuous noise load.

Assuming this level, the hypothetical number of people adversely affected by road traffic noise has decreased slightly despite an increase in population – contradicting the survey results.

The SUMP target of reducing noise pollution has been reached to date, even though this is not perceived as such by the population.

Green spaces in the city

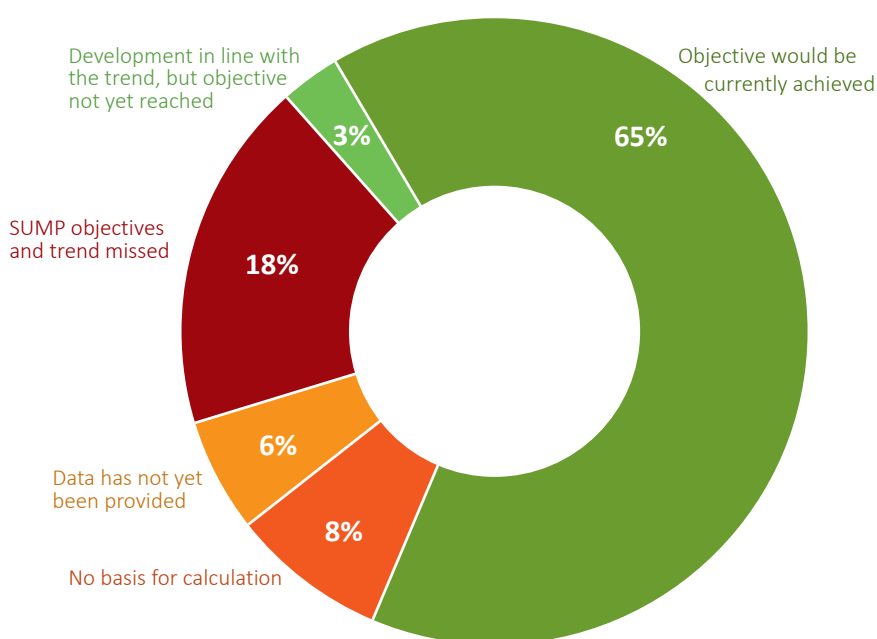
The City of Dresden’s roadside tree concept aims to preserve and enhance the roadside tree population. Precise data is available on this. The roadside tree population is to be increased as part of the Dresden region’s Climate Adaptation Programme (REGKLAM). Between 2013 and 2016, the number of roadside trees rose by 1,439 trees and thus by 2.8 percent.

The SUMP target has been reached by increasing the number of roadside trees.

← Inner-city roadside trees on both sides of Bautzner Strasse

| Monitoring | Evaluation |
|--|--|
| Determination of measurable and non-measurable SUMP objectives | Which SUMP objectives were achieved or not achieved? |
| Linking measurable objectives with suitable indicators | Has the current SUMP implementation process been successful? |
| Definition and procurement of data attributes to the indicator | In which aspects the SUMP should be updated? |
| Documentation of analysis results | Which future issues have particular priority? |

↑ Schematic diagram monitoring/evaluation



↑ Objective achievement by indicators; as of 2017

Evaluation of the SUMP targets

The evaluation assesses processes and projects. This involves determining whether the SUMP 2025plus targets, developed by the Round Table and passed in modified form by the City Council in 2011, have been achieved. Assessment involves 62 indicators, which are linked with individual targets based on available data. This is not possible for all targets, as measurement is impossible for some of them.

However, in principle, this allows us to prove whether different development trends meet or miss the corresponding targets. The resulting findings reveal a largely positive intermediate result for 2017.

- Based on 40 indicators – almost two thirds of the total figure – it is clear that the SUMP targets have currently been reached.
- Evaluation of two indicators – three percent – shows that while the development is in line with the trend, the corresponding targets have not yet been reached.
- Eleven indicators, or 18 percent of the overall figure, allow us to conclude that the respective SUMP targets have been missed, at least in recent years.
- As of February 2018, no data or calculation basis are available for nine indicators.

↓ List of indicators, data sources and assessment (excerpt)

| No. | SUMP document indicator | Framework data or individual indicator in the assessment | Unit | 2008 | 2013 | 2014 | 2015 | 2016 | 2017 | Objective per SUMP 2025plus | Evaluation |
|-----|---|---|--|------|--------|--------|--------|--------|-------|---------------------------------|------------|
| 18 | Development of multi-modality | Multi-modal users (= percentage of travellers who change transport mode at least once) | Increase | | 57,0% | | | | | Percentage of multi-modal users | n |
| 19 | Motor vehicle traffic volume in the '26er Ring' | Assessment of 3 volume counting points | Mean values of the ADTw (average daily traffic on working days) | | 21,100 | 21,400 | 21,800 | 21,500 | | 5% reduction | - |
| 21 | Punctuality in local public transport | Percentage of connections without delays (tramway, bus > 2 min) and early arrival (0 min) | Percent | | 73.1% | 74.2% | 73.3% | 73.1% | 71.2% | Increase in punctuality | 0 |
| 22 | Local public transport passenger figures | Passengers boarding and leaving local rail services (regional trains and Tramway) | Persons boarding and leaving per working day at Dresden railway stations | | 77,330 | 75,770 | 78,880 | 83,310 | | Increase in passenger figures | + |



↑ Traffic volume map (excerpt) 2017

SUMP targets not reached by 2017

The following indicators show that the SUMP targets associated with them have not been reached yet:

- Motor vehicle traffic load within the inner city ring.
Target: Reduction by five percent.
- Total bicycle traffic in Dresden.
Target: Increase in bicycle traffic, but not at the expense of local public transport and pedestrians.
- Annual mileage of private cars.
Target: Reduction in mileage.
- NO₂ threshold for Bergstrasse measuring location.
Target: Compliance with EU threshold.
- Subjective appraisal of traffic noise pollution.
Target: Reduction in noise pollution.
- Length of cycle path network with mixed use as footpaths and cycle paths, and footpaths where cycling is permitted.
Target: Reduction of the footpaths also used by cyclists.
- Total of traffic accidents, and accidents involving personal injury and serious injuries, as well as accidents involving cyclists and personal injury.
Target: Reduction in the number of accidents.
- Satisfaction with the supply of parking spaces.
Target: Increase in satisfaction.

One of the targets of the evaluation is to assess the effect of selected individual measures. This requires complex data surveys on traffic, the economy, the environment and urban development. They must span the entire time period, from before implementation of the respective measure until after its implementation. To date, this has been impossible due to the long project terms. However it remains a goal for certain measures (for example Augustusbrücke, central stop Kesselsdorfer Strasse).

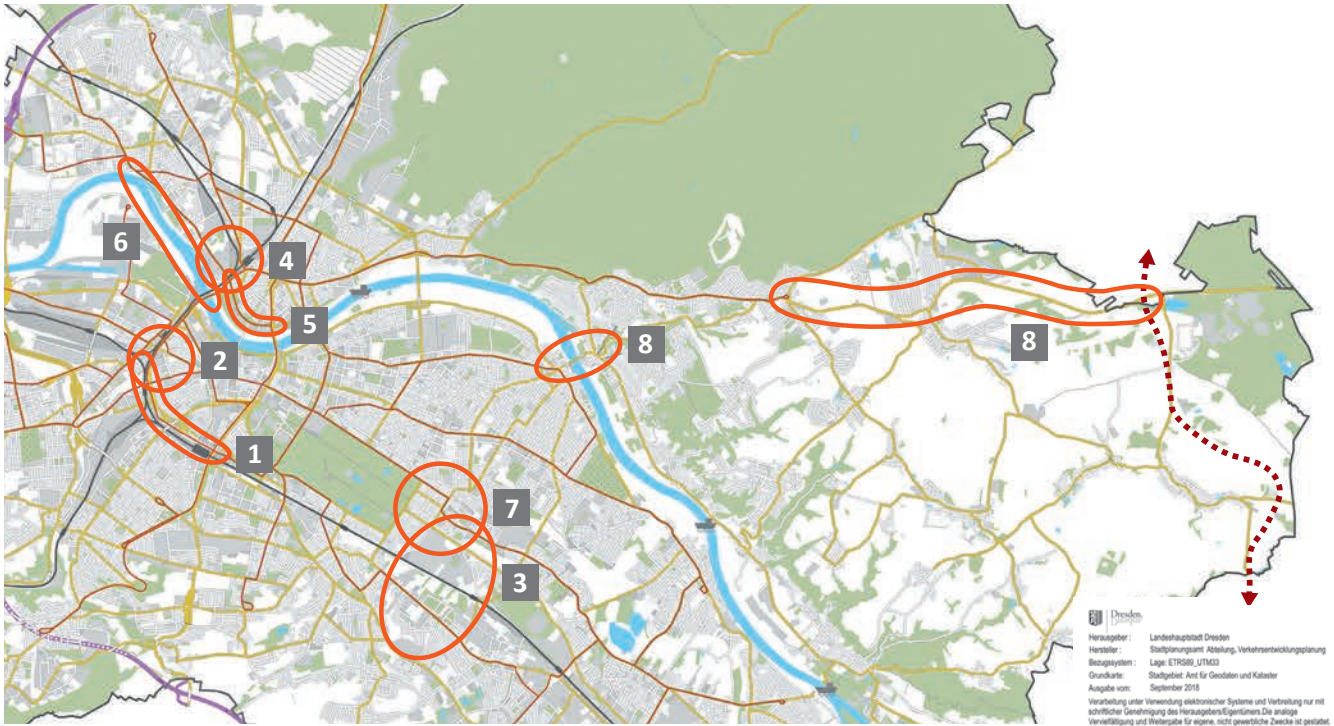
Traffic studies required

Dresden has had an integrated traffic model since 1999. It maps traffic flows with computer-aided methods. The sixth update and an expansion of the forecast horizon to 2035 are slated for implementation from 2020 on. Based on the traffic forecast for 2030, over 120 studies have been conducted for individual projects in scenarios and network cases since 2015.

Using the integrated traffic model we can determine various network elements in SUMP 2025plus which need technically more in-depth studies. The basis for this is Scenario B ('Good accessibility for all by local mobility in combination with resource efficiency') on which the SUMP is based. Enhancement is necessary where fundamental discussions on variants are required for traffic services and infrastructure.

↓ The three SUMP 2025plus scenarios (schematic)

| Scenario A | Scenario B | Scenario C |
|--|--|---|
| Good accessibility with focus on measures with priority of car traffic | Good accessibility for all by local mobility in combination with resource efficiency No change in behaviour | Good accessibility for all by local mobility in combination with resource efficiency Change in behaviour with regard to cost and environmental awareness |



↑ Traffic study requirements for eight inspection projects

Studies are currently required for the following eight traffic projects (see overview map above).

1 Connection of Fröbelstrasse to Bayrische Strasse

This project only has a partial traffic planning study for the 2030 forecast horizon covering sub-areas. As the area along Freiburger Strasse is developing positively, this connection is required to integrate it appropriately in the road network. More in-depth studies are required for the connection to Bayrische Strasse. This must be taken into consideration as part of the update to SUMP 2025plus.

2 Connections for Kraftwerk Mitte as an event venue and hub for the creative industry

Since Kraftwerk Mitte and its theatres opened, improving accessibility has been the subject of debate. A traffic light between the Kraftwerk complex and the car park in the triangular rail junction, a car-sharing station and many bicycle parking spaces already help improve accessibility. Other measures are already in preparation.

3 Accessibility of the East Dresden science hub and connection of Liebstädter Strasse to Tiergartenstrasse

A study on this project covers the following measures:

- Connection of Liebstädter Strasse from Winterbergstrasse to Reicker Strasse,

- Extension of Tiergartenstrasse to Liebstädter Strasse,
- Connection of Otto-Dix-Ring from Reicker Strasse to Dohnaer Strasse and
- Construction of a new road running in parallel with Reicker Strasse from the Liebstädter Strasse intersection via the Hans-Jüchser-Strasse intersection to Lohrmanstrasse.

↓ Kraftwerk Mitte



4 Traffic impact of 'Leipziger Vorstadt – Neustädter Hafen' master plan

Due to the as yet outstanding decision on district development, there is no reliable data yet on uses and traffic connections. As a result, the traffic forecast for 2025 cannot be updated yet. An existing report for overall traffic will be used to calculate the traffic volume dimensions.

5 Redesign of Große Meissner Strasse – Köpckestrasse at Neustädter Markt

An urban development competition for the Königsufer area is also exploring ways to make the area more attractive e.g. by expanding the roadside spaces. Potential measures to free up space include making the Neustädter Markt stop more compact and eliminating the turning lanes.



↑ Master plan Leipziger Vorstadt – Neustädter Hafen area; traffic structure variant 1 (excerpt)

↓ Große Meissner Strasse, view to the north-west



According to a corresponding study, reducing the road to one wider lane per direction, including adapting the intersection, would result in a traffic shift of ten percent. Reducing the road to one lane would decrease traffic on this section by 29 percent. This is the basis for political discussions and decisions.

6 Assessing potential western locations for Elbe bridges

There are no comprehensive studies on this complex task as yet. This includes the Umweltbrücke Ostragehege (Eco Bridge), the Erfurter Strasse bridge and the third Marienbrücke bridge. The Altpieschen ferry location is also currently under review.

7 Review of traffic routing in the Stübelallee/Karcherallee/Zwinglistrasse area

Various turning alternatives are currently being studied as part of the traffic forecast for 2025. Results are not yet available.

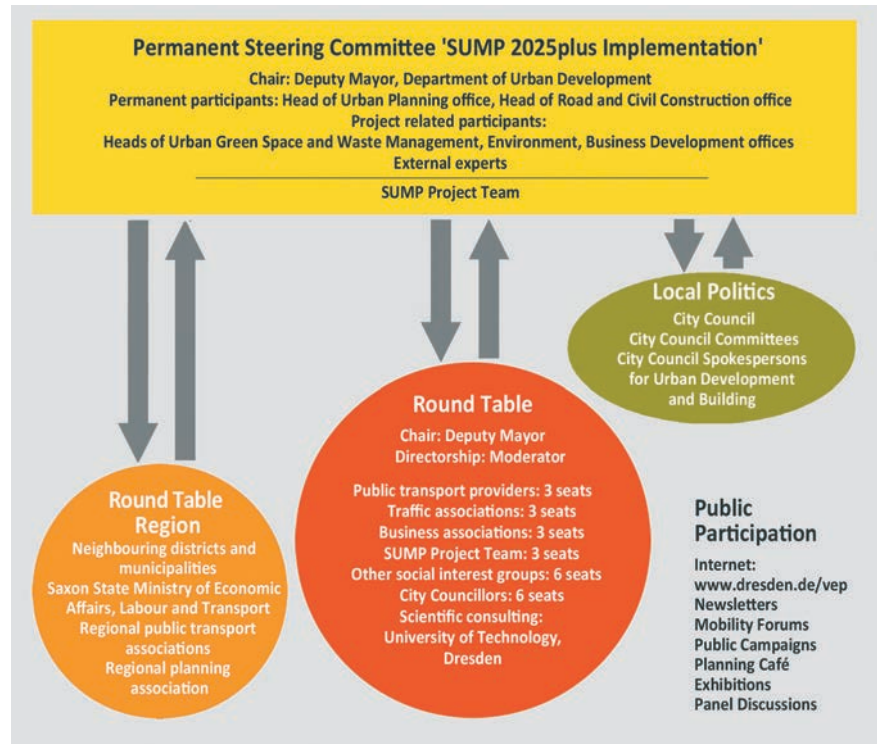
8 Traffic impact of state road S177 in the south of the Dresden uplands

Various current studies are assessing the traffic impact of S177. This includes Ullersdorfer Platz and all plans along Bautzner Strasse/Bautzner Landstrasse, as well as the studies on the Schillerplatz and Blaues Wunder bridge area.

4. Effectiveness of SUMP as a plan

Administrative implementation

Among others, the Urban Planning Office and the Road and Civil Construction Office are represented in an internal administrative steering committee, headed up by the Deputy Mayor of the Department for Urban Development, Building, Transport and Municipal Properties, as the key departments responsible for implementing the plan. The committee coordinates the implementation process of SUMP 2025plus, and works on an interdepartmental basis. Other departments and external partners can be incorporated as required.



↑ SUMP implementation phase participation

Effectiveness and benefits in participation committees

SUMP Round Table

The SUMP Round Table was formed in 2009 when work on the SUMP began. Its activities are based on a working agreement which remains valid today. After the City Council passed SUMP 2025plus in November 2014, the members of the Round Table offered to continue its work to support the implementation and evaluation phase. No procedure of this kind has ever been implemented in any other German town.

The committee's work has changed during the evaluation and implementation process. It focuses in particular on discussing subjects related to future transport development. In the context of the evaluation process, members of the round table developed their own proposals on that process and on the need to update targets, measures and concepts.

Neighbours/Regional Round Table

The Neighbours/Regional Round Table is also continuing its work. It includes representatives of the neighbouring districts and municipalities, the Saxon State Ministry of Economic Affairs, Labour and Transport, regional public transport associations and regional planning institutions such as the Upper Elbe Valley/Osterzgebirge Regional Planning Association among others.

The committee's work involves communicating, sharing and discussing transport plans that affect the common interests of all involved. For example, this includes the concerns of the surrounding communities with regard to connections and interchanges. The members coordinate strategically in particular on individual cycle network-related and local public transport measures.

Public relations

Supporting public relations measures have played a major role since work on SUMP began. This involves ongoing information and involvement of the urban community, as well as experience sharing with scientific and municipal planning experts. This and many other national and international activities ensure that SUMP 2025plus has been in the public eye beyond Dresden's borders.

National public relations

Video documentation

A 25-minute video was produced documenting the planning process and the public debate on SUMP 2025plus in Dresden. Besides the German version, there are also versions with English, Czech and Russian subtitles, which can be downloaded at www.dresden.de/vep.

SUMP brochure in German and English

A 34-page information brochure on SUMP 2025plus has been available in print in German and English since January 2016, and is available for download at www.dresden.de/vep.

SUMP newsletter

A SUMP newsletter, which has been published regularly since the project started, is available at www.dresden.de/vep for members of the round tables and the interested public.

Website

www.dresden.de/vep provides detailed information on SUMP 2025plus.

Specialist publication

The SUMP project manager and the moderator of the Round Table published a joint article in issue 4/2014 of the journal 'Internationales Verkehrswesen' (International Transport) entitled 'Transport development plan of the City of Dresden – Strategy for sustainable transport development in a growing city'. It details the experiences, the working process and the preliminary results of SUMP 2025plus.

German Association of Cities, Expert Commission on Transport Planning

As a member of the German Association of Cities, the City of Dresden is also actively involved in its Expert Commission on Transport Planning. Representatives of the Sustainable Urban Mobility Planning department report there on the SUMP 2025plus

planning process at regular intervals and discuss contents, approaches and methods, including comparisons with other cities.

Research and teaching

Research societies, institutions and associations throughout Saxony and Germany have exhibited a strong interest in the development process and the contents of SUMP 2025plus. They include the German Association of Transport Sciences (DVWG e.V.), the Road and Transportation Research Association (FGSV e.V.) and the Association of Roadway and Transport Engineers in the Free State of Saxony (VSVI e.V.). The development, methods and results of Dresden's SUMP 2025plus are also covered in annual lectures at the Faculty of Transport and Traffic Sciences at Dresden University of Technology.

Several future projects initiated by the City of Dresden deserve particular mention.

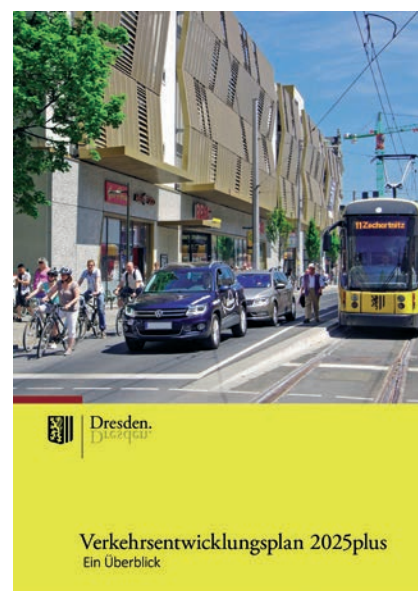
As part of the European Union 'Horizon 2020' innovation and research programme, Dresden has been selected as a 'lighthouse city' to work on the 'MATCHUP' project on the 'Smart City' area.

The City of Dresden has partnered with the private sector to launch the 'Electromobility Model City' project, which is co-funded by the German Federal Government. Planning is underway to build a series of intermodal mobility points, the first of which was opened in September 2018.

↓ Website of the City of Dresden on SUMP 2025plus



↓ Brochure on SUMP 2025plus





↑ MULTIMOBILE tram in Marienstrasse



↓ Bicycle parking at the Hygienemuseum

‘Multimobile. For you. For Dresden.’

A joint multimodal mobility campaign initiated by the City of Dresden, Dresdner Verkehrsbetriebe (DVB AG), Verkehrsverbund Oberelbe (VVO) and private mobility service providers ran from June to September 2017. The objective of this first co-operative initiative of its kind in Germany was to promote car-free mobility – walking, cycling and local public transport – as well as car and bike sharing. The media, the city and the partners involved generated a lot of interest in the project.

You can access full details on ‘Multimobile’ at www.dresden.de/multimobil. After its conclusion in 2017, the campaign has been presented at conferences in Germany and around the world as an example of good practice, and has been adapted by several cities already.



International public relations

European mobility network POLIS

Since the City of Dresden took over the presidency in the European network POLIS, SUMP 2025plus has been attracting attention from beyond Germany's borders. As part of the annual POLIS conferences in 2014 and 2017, representatives from the specialist administrative departments reported on the project's progress and implementation.

EU CH4LLENGE project and European SUMP conferences

The City of Dresden participated in the European SUMP project CH4LLENGE (2013 to 2016). Dresden's experience in drawing up its Sustainable Urban Mobility Plan (SUMP) was particularly interesting for European cities currently in the process of developing their own SUMPs.

The annual SUMP conferences discuss the requirements for SUMP plans in the European Commission's Urban Mobility Package. Experts from Dresden's municipal administration were invited to two of these conferences to share their experience from the SUMP planning process and public

participation as part of the Dresden debate to the European discussion.

European Award for Dresden's SUMP

In 2014, the cities of Dresden and Ghent (Belgium) received second-place honours in the EU Transport Commission's annual SUMP competition. The award was presented for the city's strategic sustainable urban mobility plan. 17 cities from ten countries entered the competition. First place in the SUMP award went to the Hanseatic City of Bremen.

International interest and expertise sharing

Interest at a European level in Dresden's SUMP 2025plus had already been strong in the past. Numerous workshops and meetings of planners have been held with local experts of various European cities, including Prague, Brno and Děčín in the Czech Republic, Polazk, Belarus, Olbia, Italy and Cardiff, Great Britain since 2015. Experts from Dresden have also spoken about SUMP 2025plus at international congresses, for example in Bangkok, Thailand and with representatives of the Chiba University, Japan, and at the International Transport Forum (ITF) in Leipzig..

Effectiveness of the plan: Summary

Overall, the City of Dresden's SUMP 2025plus plan has earned recognition at national and international level. It is a reliable basis for action as a strategy for the future of mobility in Dresden. It is also the foundation for other plans, such as the Integrated Urban Development Concept (INSEK). Not least thanks to the broad-based participation of specialists and the public, it has succeeded in proving its legitimacy. The committees involved in the planning and implementation process are satisfied with the progress to date, as well as monitoring and evaluation.

Now the challenge is to keep up with the diverse national, European and global developments given the rapid changes in mobility, and respond to new interest structures. In this regard, evaluation can show where more work is required to implement the targets defined for SUMP 2025plus more comprehensively than before.

↓ Presentation of SUMP Award 2014 (source: www.eltis.org)



5. Prospects: Updates to SUMP 2025plus

SUMP 2025plus requires updates and modification for a number of reasons:

- The framework conditions must be reformulated for the 2035 planning timeframe. This is due to changes in society and technology in recent years and their effects on urban transport and mobility. Among other things, they include changes in the use of vehicles ('using not owning'), innovative mobility services, new drive technologies, the use of a growing amount of mobility data and the resulting requirements on the transport infrastructure.
- The key objectives and their sub-objectives must be assessed to determine whether they must be reformulated, modified or retained. Currently, attainment of targets can only be assessed partially, as many of them cannot be measured directly, and the sub-objectives contain statements that are virtually impossible to quantify.
- The scenarios must be assessed for applicability to the 2035 planning timeframe and reformulated if necessary. The underlying calculation parameters and their statements on the development of traffic volumes and the resulting environmental impact will probably no longer be valid in future.
- When adapting the mobility strategy for SUMP 2025plus, the topics of intermodality and multimodality must be carved out in greater detail. In particular, this entails the effects of future technological innovations on mobility and urban structure. Availability and use of mobility data and its accessibility from the public space are a particular priority.
- When developing action and measure concepts, the primary goal is choosing

which measure concepts are to be continued or adjusted, and defining new measures and concepts. Moreover, the ranking of previous pilot projects must be checked and new pilot projects defined.

- Changed public relations methods and new participation formats must be restructured to take the changed conditions into account, incorporating the faster impact than in the previous planning phase between 2009 and 2012 and will be open to new stakeholders.



↑ Cycle lane on Wilsdruffer Strasse

↓ Prager Strasse stop



Future issues

The future of mobility in Dresden has already started, as shown by the following indicators:

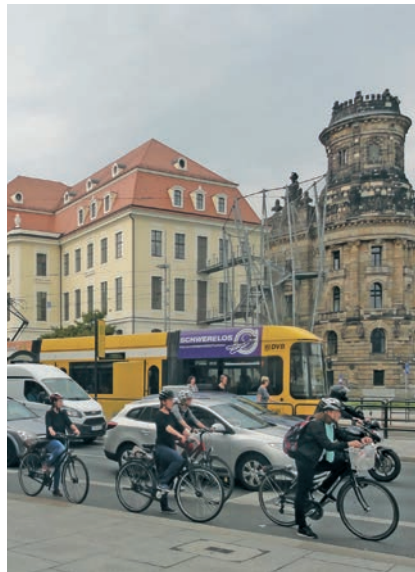
- The availability and networking of mobility data and services based on it lead to multimodal behaviour, i.e. more frequent changes of mode of transport.
- Use of digital media for information, route planning and use of mobility services (bike sharing, car sharing) is increasing.
- As competition among mobility service providers intensifies and costs decrease, the mobility services and costs can be compared at all times.
- The quality expectations for local public transport services are increasing.
- Interest in health, movement and fitness, and thus in walking and cycling in everyday situations, is increasing.
- An increase – albeit currently minor – in non-fossil-based drives is apparent.
- Electric bikes are becoming increasingly popular.
- Population continues to age. At the same time, digitalisation is taking over all aspects of our lives. Both result in an increasingly diversified range of mobility requirements.

There is an increasing focus on the following aspects:

Digitalisation and sustainable mobility

Operators, manufacturers, commercial and private users have different interests when it comes to digitalisation regarding the scope and purpose of digital software, and use of devices. Whether and how to align digitalisation of mobility with the objectives of socially, environmentally and city-friendly transport is still open and raises the following questions:

- What are the opportunities and risks for urban development?
- Can digital tools be used for implementing citywide planning goals and what capabilities are required?
- Do the SUMP 2025plus targets remain valid as mobility digitalisation advances?



↑ Pirnaischer Platz with all modes of transport

↓ DVB mobile phone ticket



Automated and autonomous driving in the city

Various scenarios are conceivable for autonomous driving. A critical assessment is required to determine whether development is in line with the sustainable mobility targets under the following aspects:

- How can we ensure that automated driving does not increase the number of trips and kilometres travelled by cars?
- Which new requirements result for the public road space and infrastructure, in particular to ensure that automated driving does not cause problems?
- How can we prevent the risk of private investments boosting services that combine the advantages of a personal car with local public transport, but also to the detriment of the latter?

Data collection and data use

Digital management systems for vehicles and transport generate and require significant quantities of linked data. Information on transport quality and density as well as the forecast and behaviour data make detailed analyses of movement patterns possible.

The fact that this data can be used for other purposes without the users' knowledge and approval raises the following questions:

- Who owns the user data from the transport system and municipal companies, and under what conditions is it accessible to whom?
- Which personal data protection precautions does the City of Dresden have to take and what targets must it set?
- Which other data can be justifiably linked with mobility information?

Intermodal services and links (Mobility as a Service/sharing/smart city)

Establishing intermodal interfaces linking local public transport with other mobility services offers the opportunity to sustainably reduce traffic, air and noise pollution. This requires potential cooperation with long-term, reliable service providers.

The following questions must be answered:

- How to deal with the rising user figures for bike and car sharing systems, if more widespread availability and interconnection makes them accessible to a larger section of the urban community than today?
- Are shuttle or pick-up systems (e.g. MOIA or Clever Shuttle) suitable for improving the quality of urban mobility? What contribution can the city make, and how can it guide the development?
- Under which conditions do digital service providers have access to customers and public spaces?



↑ Inter-modal interface at Neustadt Station



→ Visualisation: Heimrich & Hannot

↓ Electric Charging station at the new Pirnaischer Platz MOBIPunkt

Electromobility and charging infrastructure

Promoting electromobility and the charging infrastructure will influence the use and design of the public space. At the same time, the change in technologies is in full swing. Both raise questions:

- What type and density of charging stations are acceptable in public spaces?
- How can the locations of the charging stations be integrated into information systems?
- What role can filling stations play in this?
- How can taxi and city logistics companies, as well as commercial transport companies be involved in the transition to electric drives?



Integrated mobility management

As part of future transport development, increasing digitalisation will also create new perspectives for mobility management. That applies in particular for central locations where new residential or commercial uses can be located without additional infrastructure expansion. Company mobility management will also become increasingly important where use of private cars to commute to work can be avoided. The most important requirement for effective mobility management for companies, administrations, the residential sector, public institutions and event venues are generally integrated locations which are easy to reach multimodally, i.e. with various means of transport.



↑ Traffic information board at St. Petersburger Strasse

The future of urban mobility – the future for Dresden

All aspects of the future of mobility in changed circumstances focus on one guiding vision: Developing a healthy and beautiful Dresden, a Dresden worth living in. To achieve this goal, it is essential that environmentally friendly mobility is convenient, affordable and safe for as many people as possible.

↓ Prager Strasse pedestrian zone





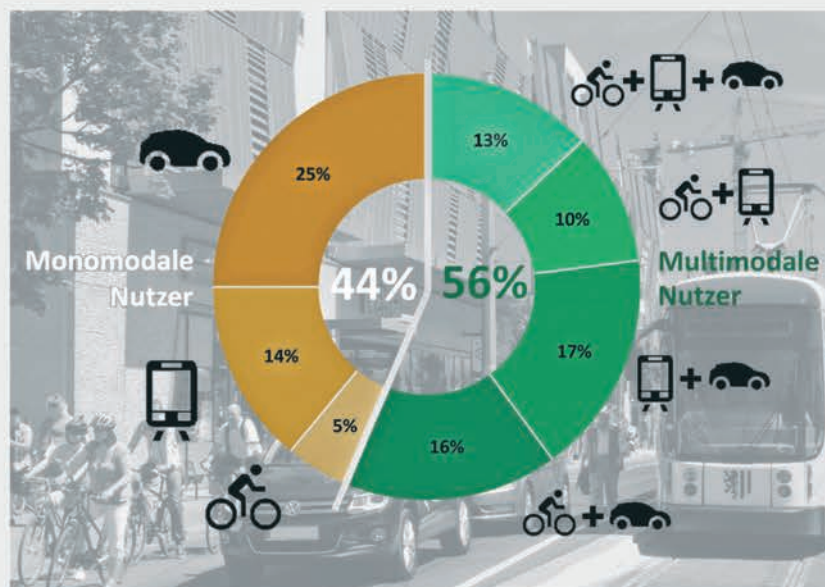
Evaluation report

The long version of the first SUMP 2025plus evaluation report and other information on the SUMP are available in German at www.dresden.de/vep.

Landeshauptstadt Dresden
Stadtplanungsamt
Abt. Verkehrsentwicklungs-
planung



Dresden.
Dresdner



Erster Evaluierungsbericht Verkehrsentwicklungsplan VEP 2025plus

Stand: Juli 2018

Imprint

Publisher:
City of Dresden

Urban Planning Office
Phone +49 (0) 3 51 4 88 32 32
Fax +49 (0) 3 51 4 88 38 13
E-Mail stadtplanungsamt@dresden.de

Press and Public Relations Office
Phone +49 (0) 3 51 4 88 23 90
Fax +49 (0) 3 51 4 88 22 38
E-Mail presse@dresden.de
Post Office Box 12 00 20
01001 Dresden
www.dresden.de
facebook.com/stadt.dresden

Central service number 115 – we love questions

Editors: Erhart Pfothenhauer, Dr Kerstin Burggraf, Frank Fiedler

Photos:
City of Dresden
Aerial photo page 9: Luftbildvertrieb Müller Niederwilligen
Cover photo: The first MOBIPunkt at Pirnaischer Platz,
opened in September 2018

Production:
planungsgruppe epUrban (text, design, layout and graphics)
Onlineprinters GmbH, Neustadt a. d. Aisch (print and processing)
November 2018
Translation: Schweitzer Sprachendienst, Radebeul
Translation published in December 2018
German title: Verkehrsentwicklungsplan 2025plus – Erste Evaluierung

Electronic documents with qualified electronic signatures can be submitted via form. In addition, e-mails to the City of Dresden can be sent encrypted with S/MIME certificate, or via DE-Mail. More information can be found here: www.dresden.de/kontakt. This information material is part of the public relations service of the City of Dresden. It is not to be used for political and campaign advertising. Political parties, however, are allowed to use it to inform their members.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 774477.

www.dresden.de/vep