



Regional Action Plan

Improving mobility services in Ludwigslust-Parchim, Mecklenburg-Vorpommern (Germany)

Written by: Carsten Beyer

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Introduction

Description of MARA

The project “MARA – Mobility and Accessibility in Rural Areas” was initiated by the Ministry of Energy, Infrastructure and Digitalization Mecklenburg-Vorpommern (Ministry of Energy MV) that is also the lead partner of the project and responsible for this Regional Action Plan. MARA aims to improve the accessibility and mobility in touristic remote areas of the BSR by increasing the capacity of transport actors. It is funded by the Interreg Baltic Sea Region Programme 2014–2020. 12 full partners and 13 associated partners from nine countries surrounding the Baltic Sea are cooperating in this project. The partnership is made up of regional and national public administrations as well as universities.

Several common challenges are faced by rural areas of the Baltic Sea Region:

- Population decline/demographic change
- Seasonal fluctuation of population/tourists
- Expensive public transport
- Car dependent lifestyle
- Many stakeholders involved
- Lack of using digital solution

MARA aims to crosscheck the actual mobility demand of residents and tourists with current mobility offers. The project aims to increase the capacity of regional and local transport actors to address multifaceted mobility needs by:

- Improving existing services
- Developing and testing innovative sustainable mobility solutions for remote areas.

Finally, the project will integrate its improved or new mobility approaches in remote areas into regional spatial and mobility development plans. This will increase the long-term impact of the main outputs and help to share the project results with other BSR regions.

Introduction to Ludwigslust-Parchim, the case study region in Mecklenburg-Vorpommern

The district (“Landkreis”) of Ludwigslust-Parchim is located in the south-west of Mecklenburg-Vorpommern. With 4,767 km² it is the second largest of the roughly 300 municipalities in Germany. Compared to other regions in Germany and to the average population density in Mecklenburg-Vorpommern (69 people per



Source: Own map

square kilometer) the area of Ludwigslust-Parchim is sparsely populated (45 people per square meter). It's a rural region. The biggest city is Parchim with 17,700 inhabitants. The region faces similar challenges as other rural regions of the Baltic Sea area and of the MARA project:

- The population has been shrinking over the last decades with people moving to the urban centres (but over the last years the population has been fairly stable)
- It has been a challenge to ensure the provision of and the access to services and public service infrastructures for the region's population – a fundamental political guiding principle in Germany, which poses a challenge for rural areas
- Nature-based tourism along with a seasonal fluctuation of tourists has gained importance.

Aim of the Regional Action Plan

The key objective of the Ludwigslust-Parchim case is to support the regional authorities in assessing the measures that have been introduced in a concerted effort over the last years in working towards improved mobility – primarily in the field of public (road) transport services.

Building on these measures this Regional Action Plan ultimately proposes new mobility solutions and hands-on measures that can contribute also in the next years to further improve mobility offers in Ludwigslust-Parchim.



What?

Finally, the project aims to integrate its suggestions for improved or new mobility approaches in remote areas into the state spatial development programme and the regional development programme as well mobility development plans (e.g. the integrated state transport plan for Mecklenburg-Vorpommern or the regional local transport plans of the planning region Westmecklenburg). This will increase the long-term impact of the main outputs of MARA and will help also to share the project results with other BSR regions.

As a basic element of the MARA project, the Ministry of Energy MV initiated analytical activities for mapping current mobility offers, comparing them with the real mobility demand and assessing potential gaps. As such also existing mobility projects from other parts of Mecklenburg-Vorpommern have been evaluated and analysed regarding their transferability and scalability.

Research and data gathering and analysis for this Action Plan was mostly done during MARA project implementation (partly as part of activities from parallel projects in the region). Additional data was gathered from national / regional / local policy documents and previous projects.



MARA's
answer

Transport planning

– national and regional level regulations

The provision of public transport to ensure access to public services – even in remote areas - falls in Germany under a fundamental political guiding principle, which is laid down in the Federal Spatial Planning Act. According to this guiding principle it is necessary to ensure the provision of and the access to services and public service infrastructures for the whole population. Hence mobility in remote areas is important for spatial planning.



Source: Graph taken from the publication "Making state development fit for the future" (Ministry of Energy MV, 2013)

Spatial planning – as the task of the federal state of Mecklenburg-Vorpommern – lies within the sphere of responsibility of the state planning authorities. The highest state planning authority is the Ministry of Energy MV responsible for spatial planning. The lower state planning authorities are the offices for regional planning in Rostock, Schwerin (responsible also for Ludwigslust-Parchim), Greifswald and Neubrandenburg. These administrative bodies also fulfil the function of the offices of the state's four regional planning associations. The associations, along with the associations' assemblies as the highest organ, are statutory bodies under public law. They consist of the counties and county-free cities, the bigger cities within the counties and the middle-order centres. Co-operation between the levels is based on the bottom-up approach, i.e. with strong stakeholder involvement.

Regional Action Plan

Improving mobility services in Ludwigslust-Parchim, Mecklenburg-Vorpommern (Germany)



(Ministry of Energy MV, 2013)

The spatial planning of the federal state is embedded in that of the federal government. Spatial planning is anchored informally at European level, meaning that it has no direct decision-making powers. The co-operation of the German states manifests itself in the Standing Conference of Ministers responsible for Spatial Planning, whose decisions serve coordination among the states. However: the State Spatial Development Programme and the Regional Spatial Development Programmes are binding.

Source: Graph taken from the publication "Making state development fit for the future"

An important element for spatial planning is the central-place system. The economic, social, cultural and administrative facilities are concentrated in the "central places". "Central places" undertake, therefore, the function of supplying not only local residents but also the surrounding areas. Therefore, they are also important for planning mobility in a region.

The "central-place system" in spatial planning		
Middle-order centres in LUP	Lower-order centres in LUP	
<ul style="list-style-type: none"> • Parchim, • Ludwigslust • Hagenow 	<ul style="list-style-type: none"> • Boizenburg/Elbe • Brüel • Crivitz • Dömitz • Goldberg • Grabow • Lübtheen 	<ul style="list-style-type: none"> • Lübtheen • Lübz • Neustadt-Glewe • Plau am See • Sternberg • Wittenburg • Zarrentin am Schaalsee

Source: own table

The Integrated State Transport Plan is the state government's mobility concept for the coming years. It was adopted by the state cabinet on 18 June 2018 and deals with all means of transport in Mecklenburg-Vorpommern from the car to the train and the bus to the bicycle and puts emphasis on their combination and linkage (intermodal mobility). The plan also provides

concrete recommendations for action for the development of mobility and is thus intended to accompany the actors in the transport sector in the coming years as a "roadmap", so to speak.

While the state is responsible for local rail passenger transport (SPNV) the districts are responsible for local public transport with buses (ÖPNV). Hence the former is covered by the Integrated State Transport Plan while for the later there are local public transport strategies. For LUP the local public transport strategy for the region of Westmecklenburg was adopted in 2014, which comprises next to LUP also a second district as well as the state capital Schwerin. In this local strategy there is one dedicated paper ("part B") on LUP.

Key elements of these regulations are summarized in chapter 4 "Challenges of transportation models and recommendations for improving mobility offers in policy and planning documents".

Description of the region and existing mobility models/offers

Description of the region

The district of Ludwigslust-Parchim (LUP) was created in 2011 in the course of a district area reform from several districts. It covers 4,767 km² and is the second largest district in Germany in terms of area (after the Mecklenburg Lake District). The district is located in the south-west of Mecklenburg-Vorpommern and borders the federal state of Schleswig-Holstein to the northwest, the federal state of Brandenburg to the south and the federal state of Lower Saxony to the south-west.



Source: Map taken from the District development concept LUP 2030 (2016)

In 2019, the rural district of LUP had about 211,800 inhabitants. Compared to Germany as a whole (approx. 230 people per square kilometre) and to the average population density in Mecklenburg-Vorpommern (69 people per square kilometer) the area of Ludwigslust-Parchim is sparsely populated (45 people per square meter). It's a rural region with almost 50% of the population living in villages (compared to a mere 15 % on average in Germany and 35% on average in Mecklenburg-Vorpommern). The other half of the population lives in cities, which mostly have some 5,000 inhabitants with the biggest city being Parchim with 17,700 inhabitants.

Table 1. Basic information about population

Region	Total Population (2019)	Population		Population change per 1,000 inhabitants (2014-2019 2000-2019)	Population		
		city	village		0-19 years	20 – 65 years	over 65 years
Mecklenburg-Western Pomerania	1.608.138	65%	35%	0,56 - 9,44	272.319	929.449	406.370
Ludwigslust – Parchim	211.779	53%	47%	- 0,40 - 11,96	36.286	123.823	51.670

Sources :Statista.de

The population development in LUP is characterised by a declining trend. While the number of inhabitants declined by almost 10% between 2000 and 2010, population development has stabilised in recent years (- 3% between 2010 and 2020 with no significant change since 2016). This development is not uniform across the region. Especially in the eastern and southern parts of the district, significant population losses have been recorded. In the north, this development was less dramatic due to the proximity to the state capital Schwerin. In the west, on the other hand, some municipalities are benefiting from the immediate proximity to Lower Saxony and the Hamburg metropolitan region and are recording population growth.

But the population is not only shrinking, it is also getting older. In 1990, Mecklenburg-Western Pomerania was the federal state in Germany with the youngest population. By 2015, the average age had increased from 36 to 46. The share of people over 65 will increase from 23% (2015) to over 32% (2030). This development on the state level applies analogously to the district of LUP where it is particularly relevant for the southern and eastern part due to its rural character.

Table 2. Basic information about region

Region	Area of the region (km ²)	Number of inhabitants (2019)	Density of population (number of inhabitants per km ²)	Hard paved public roads per 100 km ² in km (2018)	Cars registered per 1000 inhabitants	Bicycle paths (km)	Geographical location/local border traffic/ connectivity to transport hubs (airports, ports)	Access to railway/buses/waterways	Number of holiday and other short-stay accommodation (with more than 10 beds) (07/2018 08/2020)
Mecklenburg-Western Pomerania (Federal State)	23.294	1.608.138	69 (2018)	126,2	538 (2020)	2595	located in the north-eastern part of Germany / border with Poland/ located between Hamburg and Berlin/ local airport in Rostock;	Lack of fast train connections (ICE) / ferry boat connections with DK, SE and other ports in the Baltic Sea area	2795 3331
Ludwigslust – Parchim (District = pilot region)	4.767	211.779	45 (2018)	129,7	581 (2016)*	n/a	located in the south-western part of Mecklenburg-Western Pomerania / no border / located between Hamburg and Berlin/ next airport in Hamburg ca. 120 km	One station with a fast train connection (ICE) / good network of public buses	185 207

Sources: Statista.de (except * SVZ / Ludwigsluster Tageblatt 24.08.2016)

Existing mobility offers in the region

This document is primarily focusing on the description of public transport offers and recommendations for the further development of them. As intermodal mobility is an aim, also examples for non-public transport are mentioned as long as they are complementing public transport.

In the area of public transport, a distinction must be made between local / regional rail transport and other local / regional public transport (buses, trams). In the area of local public transport as a whole, the state strives for an integrated transport offer of all modes of transport. The implementation of this goal is carried out within the framework of the legally regulated responsibility of the state for local rail passenger transport (SPNV) and of the districts and independent cities for local public transport with trams and buses (ÖPNV). Trams are not relevant for LUP.

Traffic routes (2017)

Roads	Federal freeway: 150 km
	Federal highway: 432 km
	State road: 621 km
	County road: 975 km
	Municipal roads: 4,016 km
Railway	Rail network: 318 km
Waterway	Federal waterway: 166.7 km

Source: www.kreis-lup.de

Public transport with buses

LUP (such as all other districts in Mecklenburg-Vorpommern) has its own administration responsible for specific topics – among them public transport. For providing the public transportation services LUP has contracted the transport company Verkehrsgesellschaft Ludwigslust-Parchim mbH (VLP), which is also owned by the district. The district has commissioned VLP as internal operator until 31.10.2026 within the framework of an agreement in the form of a public service. VLP is by far the largest provider of flexible transportation services in the state of Mecklenburg-Vorpommern.

VLP is based in Hagenow and provides road passenger transport. In 2020 it operated 172 bus routes. 22 bus routes start or end in the state capital Schwerin. In Boizenburg, Hagenow, Ludwigslust and Parchim, VLP operates also city services. Nine company-owned and four rented operating sites ensure a region wide presence of VLP in the district of LUP. VLP employs about 300 people and owns 200 buses.

The bus network described above is the result of a fundamental stocktaking in the process of the elaboration of the local public transport strategy that was published in 2014. An important element of it is the call-a-bus system.

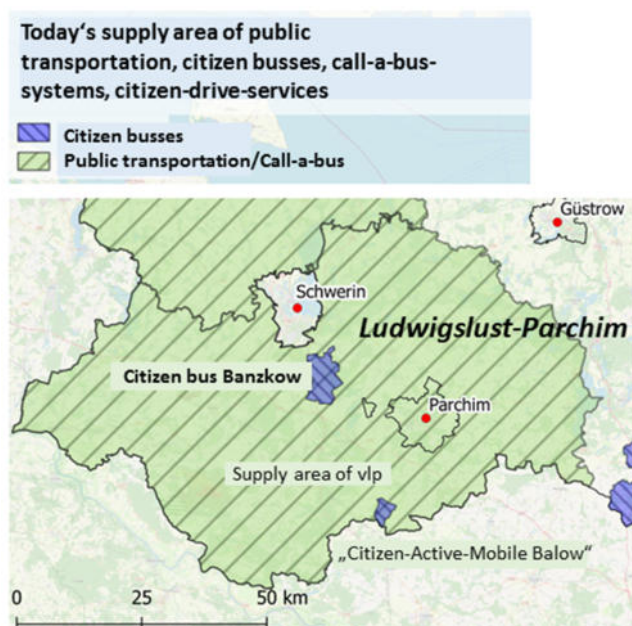
The public call-a-bus system (Rufbus) in LUP

Since August 2018, VLP has been providing services in the form of the flexible "call-a-bus" service (Rufbus) throughout its service area. Since the introduction of the Rufbus, the timetable service of the VLP has increased almost by 500% to 48 million timetable kilometres per year in 2020 (40.1 million km of which are call-a-bus services – i.e. Rufbus - . 1.5% of this distance was the distance actually covered).

Passenger numbers have increased steadily since the start of the system. The vast majority of passengers use the Rufbus regularly, and wheelchair users make use of the barrier-free service. During school hours, the Rufbus service was used in the second half of 2020 by over 1,000 passengers per week, and during the school holidays by about 1,500.

The Rufbus covers an area of approximately 5,000 km² with over 2,000 bus stops. It connects the villages with the central places and the higher-level transport network. Every stop is accessible - 365 days a year.

The Rufbus complements the conventional scheduled services of the VLP, which focus on school transport. With the Rufbus, commuters can reach their workplaces and tourists their excursion destinations even at times when there is no school transport.



Source: own study conducted by KCW

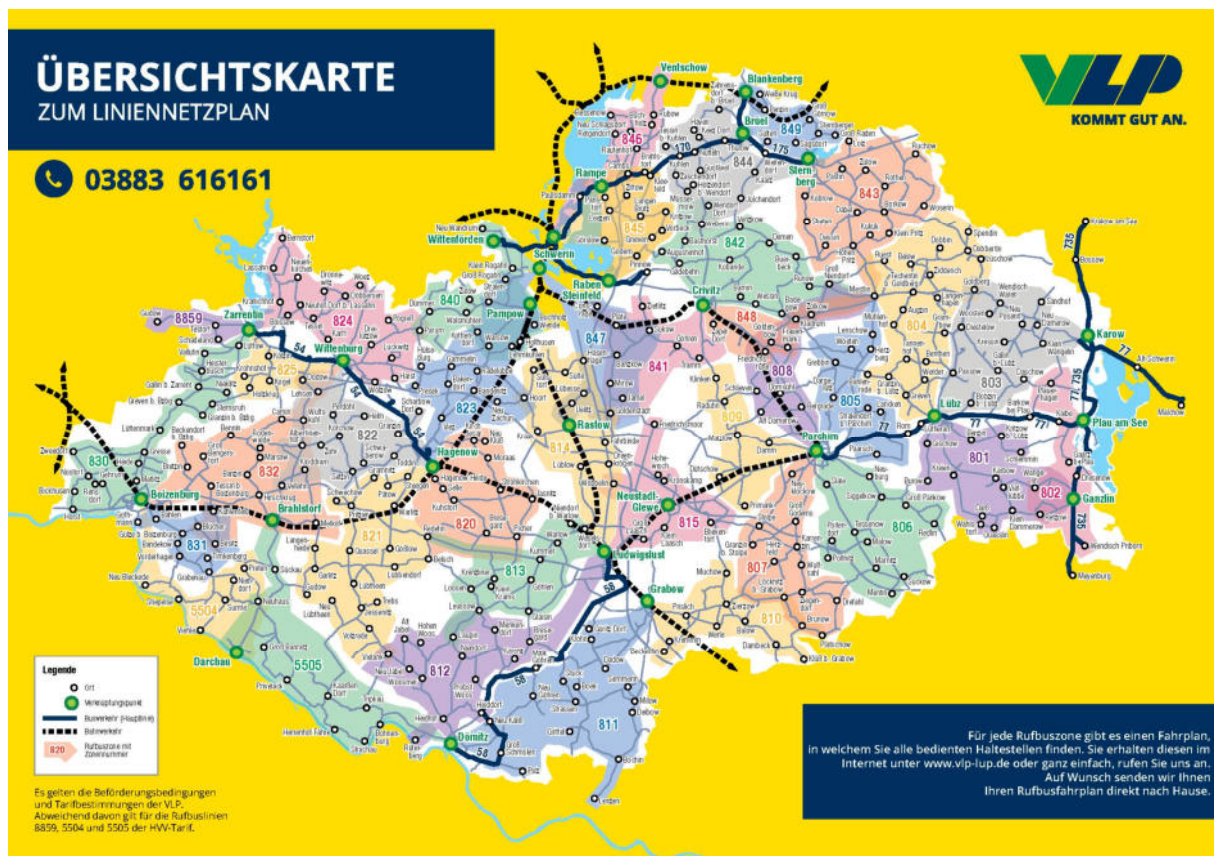
It is a timetable-based call-a-bus concept and is integrated into the digital local public transport information systems. The users must order the on-call bus in advance by indicating a bus stop of the conventional scheduled services of the VLP. Getting off is possible everywhere.

The Rufbus service has been approved as a regular public transport service for a period of 10 years. Approx. 75% of the trips are provided by local taxi companies as subcontractors of VLP

The Rufbus service has been approved as a regular public transport service for a period of 10 years. Approx. 75% of the trips are provided by local taxi companies as subcontractors of VLP. The vehicles are

only used on routes for which there are actual transport orders. The number of passengers determines the size of the vehicles. This makes it possible to serve customers' needs far more efficiently than with regular services, and it protects the roads and the environment.

The following map shows the different zones of the call-a-bus system in LUP. A passenger can identify the nearest bus stop, to where he wants to order the on-call bus. The zone (e.g. zone 811 in the very south, near Dömitz) tells him where he can go with this specific line (to all stops between Dömitz and Grabow in the blue-shaded zone). Or whether he wants to change to the local railway (dotted lines) or one of the main lines of the regular bus service (straight lines).



Source: VLP (www.vlp-lup.de)

Community buses - on-demand community transport service

Inspired from timetable-based community buses in North Rhine-Westphalia the two municipalities Balow (since 2014) and Banzkow (since 2017) introduced on-demand community transport services for their citizens. The services are operated by associations and rely on voluntary drivers. Passengers need to book their trips several days in advance, a ‘dispatcher’ queries the driver pool. The trip (e.g. for shopping or visiting the doctor) is carried out door-to-door. The drivers may transport passengers with a class B driver’s licence together with a passenger transport licence. The investment costs were partly financed by the associations’ own funds and (in the case of Banzkow) LEADER funds.

Local rail passenger transport

The rail network in the district of LUP has a structure running towards the regional centre Schwerin. It connects the three middle-order centres of the district with each other and ensures the link to the neighbouring regions.



Source: ODEG - Local railway network 2020 (www.odeg.de)

The following rail transport axes are of importance for the district:

- A north-south axis coming from Wismar connects the state capital Schwerin with Ludwigslust (the yellow line on the map). After Ludwigslust it is continued and connects the local traffic area with the greater Berlin/Brandenburg area.
- A northeast-southwest axis coming from Rostock and Bützow connects Schwerin with Hagenow as well as Boizenburg and links the local traffic area to the Hamburg metropolitan area (the green line on the map)
- A west-east axis between Schwerin, Crivitz and Parchim has regional significance for connecting Schwerin to its surrounding area (the grey line on the map)
- Another west-east axis connects Ludwigslust-Parchim County with Mecklenburg Lake District (the orange dotted line was re-opened only in 2020. It is serviced only between May and August)

The train station in Ludwigslust is LUP's long-distance railway station, where long-distance trains running from Berlin to Hamburg stop. As such the train station in Ludwigslust connects the local railway network with the long-distance railway network.

Challenges of transportation models and recommendations for improving mobility offers in policy and planning documents

The following policy and planning documents in Mecklenburg-Vorpommern and LUP were evaluated with the focus on information relating to ‘Local public transport/mobility/tourism’:

- State regional development program for Mecklenburg-Vorpommern (“Landesraumentwicklungsprogramm”)
- Regional development program of the planning region Westmecklenburg (“Regionaler Raumentwicklungsprogramm“)
- Integrated district development concept Ludwigslust-Parchim 2030 (“Kreientwicklungskonzept für den Landkreis Ludwigslust-Parchim – KEK 2030”)
- Integrated state transport plan for Mecklenburg-Vorpommern (“Integrierter Landesverkehrsplan”)
- Regional transport plan of the planning region Westmecklenburg - with local transport plan of Ludwigslust-Parchim (“Regionaler Nahverkehrsplan”)

The following sub-sections summarize key statements of these regulations concerning mobility and transportation that are relevant when cross-checking the current mobility offers with the mobility needs assessed in LUP

State regional development program for Mecklenburg-Vorpommern

The State regional development program for Mecklenburg-Vorpommern (LEP), which was adopted in 2016, does not include any concrete information about “local public transport services” because of its transregional character.

On a more general level the LEP refers in chapter 5.1 ‘Transport’ to the fundamental political guiding principle (see chapter 2 “Transport planning – national and regional level regulations”), namely the provision of public transport to ensure access to public services . In the subsection 5.1.1 ‘Mobility and accessibility’, paragraph 2, it contains the following information about mobility in rural regions

- In rural regions adequate mobility of all population groups must be ensured.
- This requires innovative solutions, particularly in the rural planning regions.

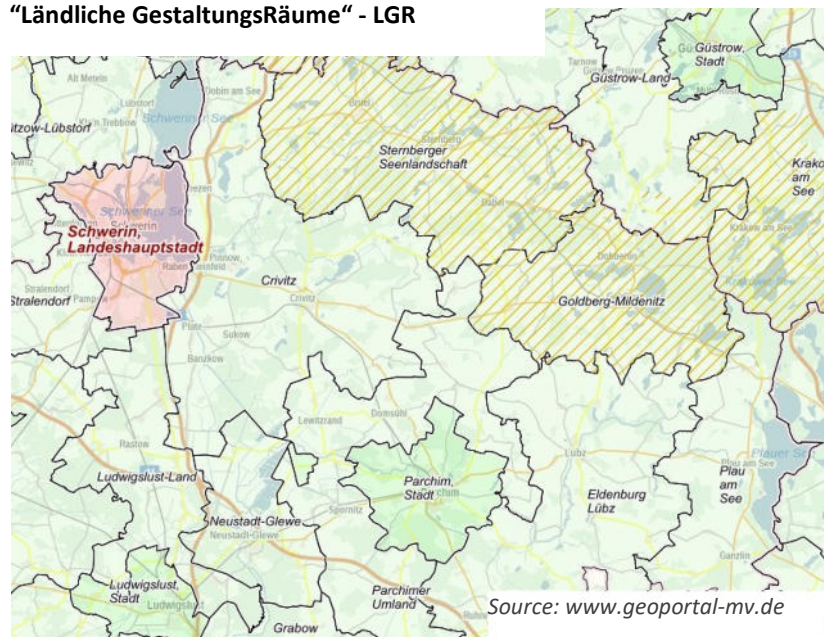
The latter is justified with “a danger that in future it will no longer be possible to achieve a reasonable balance between carrying capacity, accessibility and costs for transport infrastructure”. Therefore, in order to ensure the mobility of all population groups in these rural areas, innovative and unconventional approaches are needed. Innovative solutions form the bridge to the accessibility of the lower- and middle-order centres and thus the access to public services.

Section 5.1.2 ‘Infrastructure and modes of transport’ states in paragraph 5 regarding local public transport:

- Local public transport should be developed as appropriate, economic and environmentally reasonable mobility services for all regions. Starting point is the integral coordinated timetable of rail public transport. Based on this and a high level of efficiency integrated intermodal concepts should be developed between rail, express and feeder buses as well as flexible modes of transport.

Rural Development Areas („Ländliche GestaltungsRäume“ - LGR) is a specificity of Mecklenburg-Vorpommern. These are rural areas that are subject to significantly more challenges for successful prosperity and economic development than other regions of the country. Development strategies and measures are to be tailored to the needs of these areas. The use of this instrument in structurally weak rural areas is a novelty nationwide.

“Ländliche GestaltungsRäume“ - LGR



Source: www.geoportal-mv.de

Two LGR (Sternberger Lake District and Goldberg-Mildenitz) are also in LUP and are shown in the LEP.

A major challenge for the LGR is mobility. Due to longer distances and fewer passengers, local public transport is significantly more expensive for the public transport authorities than in more densely populated areas. However, local public transport must not only be secured as a component of services of general interest, but must also be understood as a location factor. Among other things, it is important that apprentices can reach their vocational schools by public

transport. This is the only way to maintain business locations in rural areas, which contribute significantly to the financing of municipal budgets with their trade taxes, among other things.

Regional development program of the planning region West-Mecklenburg

The Regional development program (RDP) for the planning region of for West Mecklenburg that includes also the district of LUP was adopted in 2010 and thus doesn't reflect the current status quo. Still, it forms a good basis to assess whether the topic of local public transport has been tackled in the meantime as planned or not.

It states as a principle for rural regions that the local public transport system should be designed so that the next closest lower- or middle-order centres can be reached in an appropriate time.

There is no explicit information about demand-driven alternative service forms. However, in principle, it encourages the use of "other transport services such as scheduled taxis, hailed share taxis, on-call bus or tourism boats...".

The public transport system in LUP as presented in chapter 3 (Description of the region and existing mobility models/offers) has taken into account this principle for rural regions. Today the public transport with buses ensures that from every village the next closest central location can be reached. This has been achieved primarily with the introduction of the call-a-bus system, i.e. a demand-driven alternative service form.

Integrated district development concept Ludwigslust-Parchim 2030

The integrated district development concept Ludwigslust-Parchim 2030 (KEK 2030) was adopted in 2017.

The overall principles in the development concept on the subject of local public transport/mobility are in line with the state regional development program and the integrated state transport plan.

The development concept does include information about local public transport/mobility and formulates goals and approaches for necessary interventions:

One sub-ordinated goal within the action field "Places worth living" (one out of three action fields) reads "Ensuring needs-based transport connections between cities, municipalities and rural locations". This includes the following approaches:

- Improving the connection of the surrounding communities to the central places and Schwerin
- Connecting the area to an integrated bus and rail network
- Promotion of "tailor-made" feeder services to complement the call bus system (citizens' bus, ride-sharing portals, e-bikes).
- Development of rural areas through innovative and flexible mobility services (such as call buses, shared taxis, rental bicycles and cars, car-sharing, village cars, etc.).

As a proposed action, the “further development and optimisation of call-a-bus services” is listed.

A second sub-ordinated goal within the action field “Places worth living” reads “Further development of the quality of public transport and e-mobility”. This includes the following approaches:

- Development of an integrated transport concept (with coordinated tariffs and timetables between rail transport and public transport).
- Ensuring demand-oriented and (as far as possible) free school transport within the district (school transport statutes).
- Development of accompanying offers to the legally prescribed school transport (e.g. extension of the school ticket to the entire public transport offer, holiday or leisure tickets, youth ticket, job ticket).
- Improving public transport connections to industrial parks (special offers for trainees)
- Supporting initiatives for barrier-free public transport
- Improving transport connections to the municipalities in the Hamburg metropolitan region and examining the options for joining the Hamburg Transport Association.
- Introduction of a combined fare for rail and bus (Westmecklenburg fare)
- Digitisation of mobility offers

The KEK 2030 elaborates also on the subject of ‘Mobility and tourism’ namely within the action field “Strong Business Location”:

One sub-ordinated goal within this action field reads “Promoting transport accessibility and the attractiveness of tourist attractions”. This includes the following mobility-related approaches:

- Improve accessibility to tourist attractions within the district and beyond the district borders (e.g. from Hamburg and Berlin) by public transport and regional rail.
- Expansion of the water tourism infrastructure with networking across the district borders.
- Expand the network of hiking, cycling and bridle paths and close gaps as required
- Implementation of the regional cycle path concept for West Mecklenburg (linking everyday and tourist cycle paths).
- Expansion of cycle paths along the waterways
- Reactivation of the Parchim-Malchow southern railway line to improve the accessibility of tourist centres in the district.

The public for rural areas system in LUP as presented in chapter 3 has already taken into account a number of the proposed approaches. Today the public transport with buses ensures that from every village the next closest central location or train station can be reached. This has been achieved primarily with the introduction of the call-a-bus system, i.e. a demand-driven alternative service form. The Parchim-Malchow southern railway line was re-opened in 2020. The MARA project and this Regional Action Plan work towards identifying innovative and flexible mobility services for rural areas and the pilot study in the MARA project on the further development and optimisation of call-a-bus service are in line with the proposed action in the KEK 2030.

Subsequently to the publication of the concept the stakeholders in LUP put in 2018 priorities to all the approaches that were proposed in the KEK 2030. Highest priority was given to the actions that are related to the topic “Mobility and tourism”.

Integrated state transport plan for Mecklenburg-Vorpommern

The key objective of transport policy according to the integrated state transport plan for Mecklenburg-Vorpommern from 2018 (ILVP 2018) is “sustainable mobility that harmonises economic, social and environmental requirements as far as possible”. This planning approach of an integrated local public transport system describes a 5-level system:

Table 3. The five service levels of public transport

Service level	Service characteristics
Level 1	Efficient rapid connections by train or bus (main network)
Level 2	Coordinated bus connections to the remaining relations with a greater demand
Level 3	Demand-driven route transport particularly in school transport (if necessary, supplemented by other regular services)
Level 4	Supplementary flexible service forms such as on-call regular buses, hailed share taxi, etc. They should operate at times with weaker demand and enable an appropriate mobility service even in sparsely populated regions
Level 5	Other community transport services in particularly sparsely populated rural regions in which even flexible service forms are not economically viable. With cost coverage rates between 6% and 41%, flexible service forms require a minimum passenger potential of about 3,000 to 5,000 residents in the area of operation. Below this threshold, services organised by the communities (e.g. community buses), combined transport of passengers and small loads (intermodal bus), private sharing and the integration of patient transport come into consideration

The ILVP 2018 describes six operational principles for mobility in rural regions:

Table 4. The six operational principles for mobility in rural regions

Principle of action	Explanation
Integration	Denser network of various modes of transport
Transporting people	Access to existing but as yet unused resources (e.g. vehicles)

Mobility centres	Mobility management for the purpose of bundling of the population's mobility needs (trains, regular bus services, on-call buses, hailed share taxis, taxis, commercial/private ride sharing options)
Utilising freedom of design	Utilising existing freedom of design by community agents, opening and differentiation of established standards, willingness to exploit unconventional solutions
Connect municipalities	Development of organisational responsibilities to connect (rural) municipalities to shape public mobility without intervening in the local public transport network responsibilities of the districts
Encourage cycling	Utilising the expandability of bicycle transport (incl. pedelecs, electric bikes); improving the connection between rural regions by combining local public transport and bicycles

On the subject of 'Mobility and tourism' the integrated state transport plan contains the following statements, among others:

- Aim: As many tourists as possible should arrive without a vehicle or at least leave their car on site.
- Adaptable mobility services for tourists: 'Door-to-door' services along the entire travel chain are important for arrivals and departures. Mobility at the holiday destination requires services that are tailored to the special needs of tourists.
- Customer-oriented information: Easily understandable information about existing services. To bring the mobility services to tourists requires targeted marketing.

The ILVP 2018 describes in its synopsis a plan with the most far-reaching and broad time horizon but by its very nature cannot identify any concrete local or regional mobility deficits.

Regional transport plan of the planning region Westmecklenburg - with Local transport plan of Ludwigslust-Parchim

The regional transport plan of the planning region West-Mecklenburg that includes (in a separate document called "part B") also the district of LUP was adopted in 2014. The stocktaking that formed the basis for the plan is therefore not up-to-date, anymore.

It formed the basis for the further development of local public transport in then newly formed district (LUP was formed only in 2011 by merging two formerly independent districts). As such the purpose of the regional transport plan is rather to set-up a clear cut organisational structure for the local transport system (similar to "terms of reference" for the service provider, the transport company VLP) and not to propose specific actions also beyond public transport.

The following overarching political goals have formed the framework for the development of the public transport in LUP :

- Public transport shall continue to be an essential component to ensure access to public services.
- The mobility of the population and the accessibility of the region must be guaranteed by public transport in a demand-oriented manner. Ensuring mobility also includes linking the transport systems with each other in a customer-friendly way.
- The following target groups must be given special consideration:
 - Children, teenagers and senior citizens are to be considered, as they depend on public transport for their mobility and prove to be the most important user groups.
 - People with low incomes are to be included to a greater extent.
 - People with disabilities: The standards of barrier-free access to public transport from the “German Council for People with Disabilities” are to be included as a basis in the planning of public transport.
- The financial viability of public transport services must be ensured. Therefore, region-specific and function-specific service standards must be developed to ensure a high efficiency of public transport.

In order to take these principles into account the regional transport plan for LUP sets inter alia the following guidelines:

- School development and public transport planning in general, as well as school start and end times in particular, must be coordinated with the timetables. For this purpose, the instrument of staggered school times should be applied consistently.
- Rail transport should be designed as a basic service and the other services in public transport should be aligned with it, acting more or less as a feeder or pick-up service.
- Routes and timetables should be developed in a demand-driven way
- Alternative forms of service (e.g. shared taxis, on-call buses) are an equivalent element of public transport, both as a supplement to services and especially as a substitute for conventional regular services.

Tourism and mobility in LUP

Already for many years, Mecklenburg-Vorpommern (MV) belongs to the Top 10 destinations of domestic German travel. Tourism, however, focuses on the coastline and in LUP tourism is of much less importance than in other parts of MV. The number of holiday and other short-stay accommodation (with more than 10 beds) per 100,000 inhabitants is less than half as big as on average in the federal state (98 /100,000 in LUP compared to 207 / 100,000 in MV).

Nevertheless, tourism is important – also with view to mobility offers. According to the Statistical Office of MV in 2018 some 1.1 million overnight stays were counted. One can assume that even more day tourists are coming to LUP for an excursion.

Every holiday, every journey begins "on the sofa at home". It is there that the main means of transport for the holiday is decided. Therefore, potential guests must "stumble" across the corresponding public transport offers already at the first contact (website - telephone contact with the municipality/accommodation etc.).

Currently no region-wide tourist offers exist in the rural areas of Mecklenburg-Western Pomerania, such as timetables tailored to the restaurant sector with accessibility to all stops 365 days a year. Neither does a scheme exist that could offer free public transport for visitors staying in hotels / pensions that maintain a contractual agreement with the public transport provider.

For this purpose a uniform internet presence for all public transport offers, which the tourism businesses and locations can then link to on their websites, is a good means. But not existing in LUP, yet. Still, there is a need and willingness to examine in a joint process of the state tourism association and the state and local/regional transport companies how the timetable information can be improved and how the interests of tourists can be taken more into account. This includes also information on local mobility offers such as shipping, bicycle and canoe rentals and shuttle services of hotels and restaurants in addition to the traditional modes of transport (bus and rail).

Mobility needs in the region

Short description of research methodology

The following table displays the different methods that were applied to assess the mobility needs of the inhabitants in LUP and to detect disparities between these mobility needs and the existing mobility solutions (i.e. the gap analysis in the next chapter). The main focus of the analysis has been on mobility needs in LUP that are not related to individual car transport.

Table 5. Research methods used to assess and analyze the needs of tourists and residents

Ministry of Energy MV for	Methods applied																							
	Quantitative						Qualitative									Other								
	PAPI			CAWI			IDI			Case study			Desk research			Delphi method			Spatial information/dynamic maps development and processing (including PPGIS)					
	T*	I*	A*	T	I	A	T	I	A	T	I	A	T	I	A	T	I	A	T	I	A			
Ludwigslust-Parchim								x	x	x	x	x				x	x					x	x	x

*"T" – tourists; "I"- inhabitants; "A" - authorities

Desk research: A lot of research and studies have already been undertaken over the last years. All the policy documents that were analysed in the previous chapter 4 (“Challenges of transportation models and recommendations for improving mobility offers in policy and planning documents”) contained information on the underlying challenges for the region / the transport systems and the related needs of the population in Ludwigslust-Parchim. Each program / plan / concept included in its elaboration process also a stakeholder involvement in the form of workshops / focus groups or interviews.

The stakeholder involvement strategy that was elaborated by the Ministry of Energy MV in the framework of the MARA project named the following groups of stakeholders:

- local residents (and tourists)
- the regional authority/administrative body of the region
- the public transportation company in LUP (“Verkehrsgesellschaft Ludwigslust-Parchim mbH – VLP

- the county council’s committee responsible for traffic and public transportation enterprises
- experts and professionals of public transportation and of the conditions of the region
- other transportation companies (train operators, public transportation providers from neighboring regions)
-

All of these stakeholder groups had their say in at least one of the documents named in chapter 4.

Expert Interviews: In the course of the MARA implementation, more than 10 interviews with experts and professionals of public transportation and of the conditions of the region have been conducted. Most of them are summarized in the publication “MARA Mobility Expert Report”.

Accessibility analysis with dynamic maps: The project made use of the very comprehensive accessibility portal of the Hamburg Metropolitan Region, of which LUP is an (peripheral) part. The accessibility portal, which is publicly accessible on the web (https://geoportal.metropolregion.hamburg.de/mrh_erreichbarkeitsanalysen/), was completed in 2016 and the underlying data was updated in 2019 in parallel to the analytical phase of the MARA project. The accessibility portal was used in identifying parts of the district LUP where specific challenges remain, i.e. where the access of people using public transport to services and public service infrastructures is excessively difficult.

Last but not least two analytical tools that have been developed in the framework of the MARA project were used. Their application (and piloting) is the main subject of the MARA case study in LUP, which is completed only after the submission of this Regional Action Plan. As such their application is one of the actions that is proposed in this report.

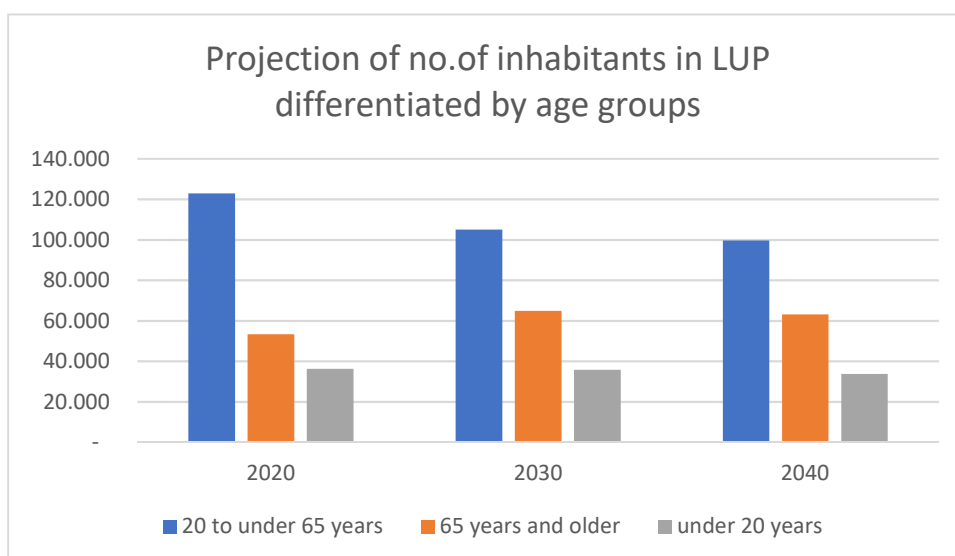
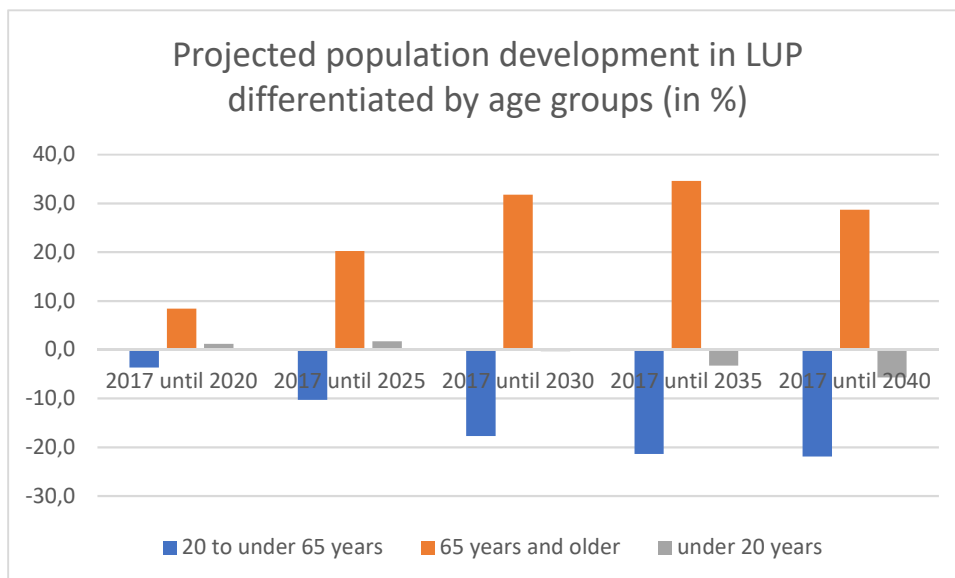
- The Population Mobility Monitor is used to crosscheck the existing public road transport offers with the real mobility streams of the population (local residents and tourists)- regardless of the transportation means that they are using.
- The GIS Mapping Tool is used to review the existing bus routing in order to assess whether a modification could increase the access of more local residents and tourists to the existing system, e.g. by adding an additional bus stop or by re-routing a bus line to a parallel street.

Originally more face-to-face events with stakeholders were planned but had to be cancelled or re-scheduled as virtual / telephone meetings due to the Corona Pandemic.

The mobility needs – the demand side for mobility beyond individual car transport

The term “mobility needs” is understood in this chapter as systematically assessing the actual mobility demand of the potential user groups of transport options other than individual car transport. For the sake of simplicity all transport models other than the usage of the own car are named here “public transport” knowing that this comprises also initiatives from the civil society or private companies. This assessment adds another layer to the overall analysis as the supply side was already covered in chapter 3 (“Description of the region and existing mobility models/offers”).

The most important aspect is how the demand side develops quantitatively over the next years. The next graph shows the projected population development in LUP differentiated by age groups:



Source: Federal Office for Building and Regional Planning (BBSR 2021): Spatial planning forecast 2040. Population forecast: development by age group

While the share of children / teenagers remains relatively stable (and hence also the number of families with dependent children), the group of elderly people increases dramatically while at the same time the biggest group, the adults between 20 and 65) shrinks.

This demographic change in LUP is in particular relevant for as the main user groups of public transport are likely to grow -relatively but also in absolute numbers.

In the next two tables the potential users of public transport have been divided in line with the approach of the MARA project in two different overarching groups: The inhabitants of LUP and the tourists coming to LUP. These two main groups are further split into sub-groups that have different mobility needs.

Table 6. The mobility needs of inhabitants – main results

User group	Relevance for non- car transport	Specific mobility needs	Timing	Range of mobility
Elderly people	Growing, the number of people aged 65 or older will further increase	• Shopping (mostly grocery)	Weekdays (flexible)	local
		• Medical Services (incl. specialists)	Weekdays (morning and afternoon)	local / regional / supra-regional
		• Official visits to authorities / lawyers / tax advisors etc.)	Weekdays (morning and afternoon)	local / regional
		• Recreational visits (restaurants, concerts, swimming etc.)	flexible	local / regional
Youth	Very relevant as no driving license, stable population development	• Attending school	Weekdays (morning and afternoon)	local / regional
		• Attending extracurricular activities (sports, music, private tutoring etc.)	Weekdays (afternoon and evening) and Weekends (morning and afternoon)	local
		• Meeting friends	Weekdays (afternoon and evening) and Weekends (afternoon and evening)	local
		• Recreational visits (restaurants, concerts, swimming etc.)	Weekends (afternoon and evening)	local / regional
Families	Relevant (Commuting, single car only, low income / no car)	• Driving to work (incl. commuting to Hamburg etc.)	Weekdays (morning and afternoon)	local / regional / supra-regional
		• Transport services for small children (daycare, primary school etc.)	Weekdays (morning and afternoon)	local
		• Shopping (grocery and clothes)	Weekdays (evening) and Weekends (morning and afternoon)	local / regional
		• Medical Services (primary health care for children and adults)	Weekdays (morning and afternoon)	local / regional
Singles / Couples without children	Less relevant and decreasing demographic trend	• Recreational visits (restaurants, concerts, swimming etc.)	Weekends (afternoon and evening)	local / regional
		• Driving to work (incl. commuting to Hamburg etc.)	Weekdays (morning and afternoon)	local / regional / supra-regional
		• Shopping (grocery, clothes and furnishings)	Weekdays (evening) and Weekends (morning and afternoon)	local / regional / supra-regional
		• Medical Services (primary health care)	Weekdays (morning and afternoon)	local / regional
		• Meeting friends	Weekdays (afternoon and evening) and Weekends (afternoon and evening)	Short / medium

		<ul style="list-style-type: none"> Recreational visits (restaurants, concerts, swimming etc.) 	Weekends (afternoon and evening)	local / regional / supra-regional
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Source: Own assessment

Tourism has been identified in the integrated district development concept Ludwigslust-Parchim as key economic sector for the development towards 2030. Thus LUP aims to increase the overall number of tourists over the next years. The share of people not wanting to come with their own car will increase, anyway, as recreational activities like walking, cycling, boating, canoeing become more popular and mostly shall take place in unspoiled nature. Plus, an increasing number of people in nearby urban centres like Berlin or Hamburg don't own an own car anymore, but rely on public transport or sharing models.

Table 7. The mobility needs of tourists – main results

User group	Relevance for non- car transport	Specific mobility needs	Timing	Range of mobility
Tourists	Very relevant as tourism has been identified as key economic sector	<ul style="list-style-type: none"> Travelling to the accommodation 	Weekends	supra-regional
		<ul style="list-style-type: none"> Visiting touristic sites 	Weekends and Weekdays (daytime)	local / regional / supra-regional
		<ul style="list-style-type: none"> Shopping (mostly grocery) 	Weekdays (daytime)	local / regional
		<ul style="list-style-type: none"> Recreational visits (restaurants, concerts, swimming etc.) 	Weekends and Weekdays (flexible)	local / regional
		<ul style="list-style-type: none"> Recreational activities (walking, cycling, boating, canoeing etc.) 	Weekends and Weekdays (daytime)	local / regional
Seasonal dwellers	Less relevant as seasonal dwellers come with their car	<ul style="list-style-type: none"> Travelling to weekend-house 	Weekends	supra-regional
		<ul style="list-style-type: none"> Shopping (mostly grocery) 	Weekends (morning and afternoon)	local
		<ul style="list-style-type: none"> Recreational visits (restaurants, concerts, swimming etc.) 	Weekends (flexible)	local / regional
		<ul style="list-style-type: none"> Recreational activities (walking, cycling, boating, canoeing etc.) 	Weekends (daytime)	local / regional

Source: Own assessment

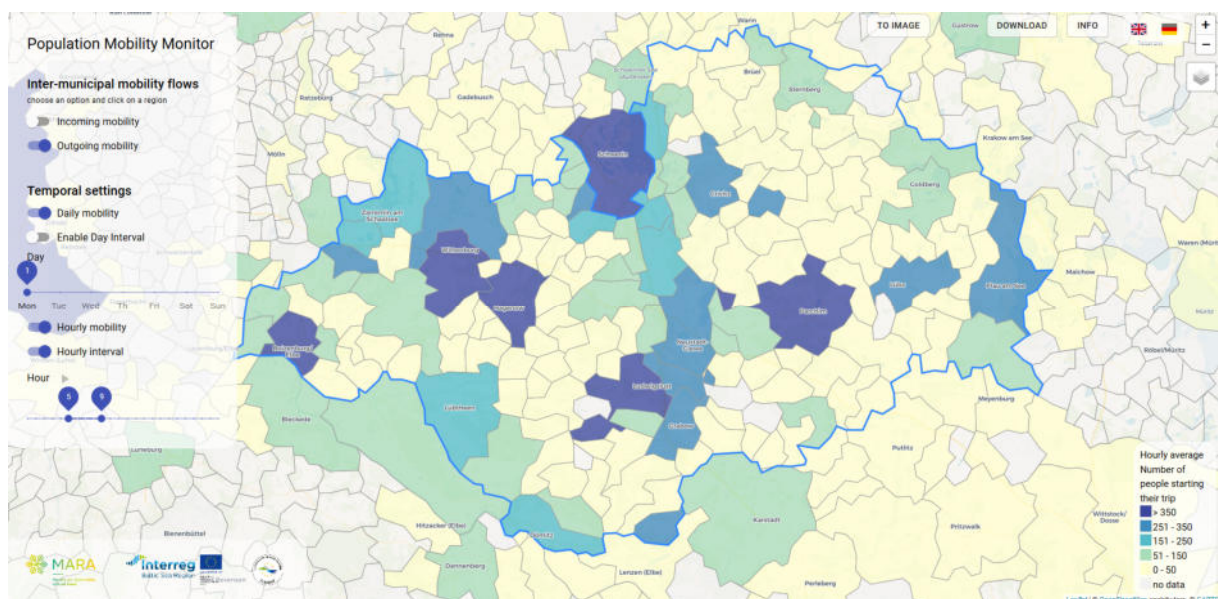
The overview in the two tables shows the heterogeneous mobility demand from the different user groups.

The Population Mobility Monitor (PMM) is a tool suited for capturing this heterogeneous mobility patterns. The PMM is a data management and visualisation tool for showing the actual mobility pattern based on digital data sources. It is one of the tools that has been developed in the framework of the MARA project.

The PMM is not intended for public use. The target groups of the tool are public authorities and transport service providers who can benefit from the tool when planning and evaluating their mobility solutions.

With the next images the functionality of the PMM is exemplified:

Image 1. Outgoing mobility per municipality on a Monday morning, 5am -9am



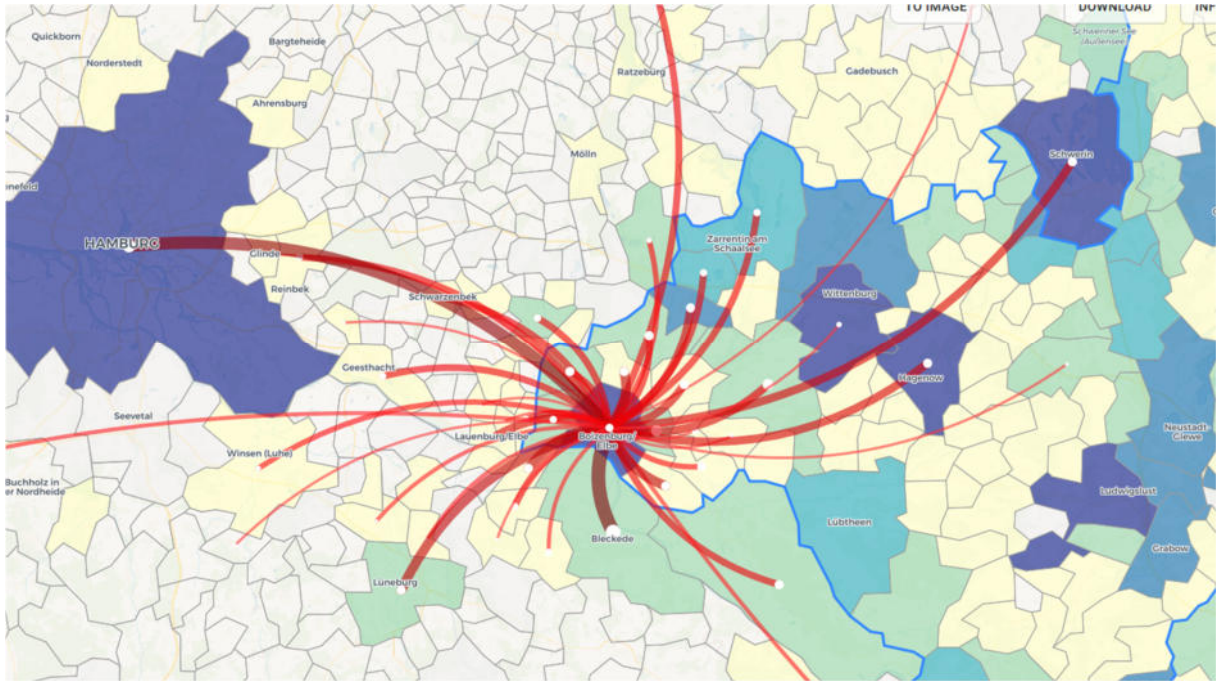
Source: Population Mobility Monitor of the MARA project (<https://pmm.ut.ee/>)

The municipalities of the district of LUP are divided into 5 categories (according to number of people starting their trip) and distinguished from each other by colour. Obviously, more people start their trips from the cities).

The next image gives an example of the visualisation of the mobility streams from one given municipality (here Boizenburg in the far west of LUP). The thickness of the bar illustrates that most people are going on a Monday morning (probably for work) to Hamburg, Lüneburg and Bleckede. Hence they are leaving the district and even the federal state. This is an important information for the transport planners as it illustrates the need to cooperate with public transport companies from neighbouring districts / federal states.

Image 2. Outgoing mobility streams of one specific municipality (here Boizenburg) on a Monday morning, 5am -9am

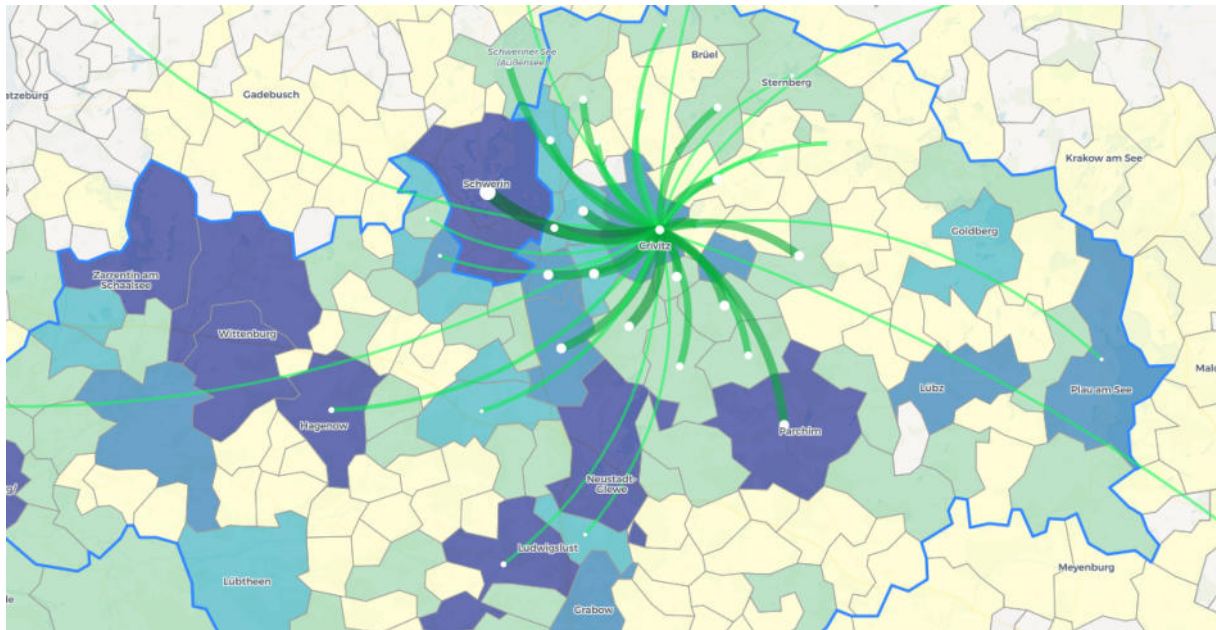
Regional Action Plan
Improving mobility services in Ludwigslust-Parchim, Mecklenburg-Vorpommern (Germany)



Source: Population Mobility Monitor of the MARA project (<https://pmm.ut.ee/>)

The next images gives an example for incoming mobility streams:

Image 3. Incoming mobility streams of one specific municipality (here Crivitz) on a Monday morning, 5am -9am



Source: Population Mobility Monitor of the MARA project (<https://pmm.ut.ee/>)

In this case most people going to Crivitz on a Monday morning come from neighbouring cities / settlements.

This analysis can be repeated using different parameters. The mobility stream can be analysed according to

- Incoming / outgoing mobility
- Over 100 Municipalities in LUP
- Mobility within the district and to neighbouring destinations (one – either origin or destination must be located within the district of LUP)
- Specific daily mobility (Monday vs. Sunday) / daily intervals (e.g. Weekdays vs. Weekends)
- Hourly mobility / hourly intervals

Some of the results of the work with the PMM have helped to elaborate the following overview of challenges. The systematic application of the PPM for assessing and modifying the timetable of the buses is subject of the case study that is completed only in autumn 2021.

Challenges for mobility and accessibility in LUP

In matching mobility demand and mobility offers the transport operators (public, private, civil society operators or public private partnerships) face huge challenges. LUP is sparsely populated and a rural area. It is a huge challenge to ensure the provision of and the access to services and public service infrastructures for the whole population in such an area, which is remote to German standards. At the same time this is a guiding political principle in Germany. In Mecklenburg-Vorpommern the Integrated State Transport Plan sets out that “mobility for all means also enabling mobility for people who do not have a car (of their own)”. In Mecklenburg-Vorpommern, a quarter of households do not have their own car. If one adds to this group also people with reduced mobility, people who are too young to drive a car or do not have access to the "family car", it becomes clear that this guiding principle is relevant for a considerable group of people, especially in rural areas like LUP.

On top climate change calls for new mobility models in order to reduce CO₂ emissions. The transport sector is one of the main emitters of CO₂. This itself is huge challenge for the future but not in the centre of this analysis. Still, when developing new mobility models the climate change aspect always needs to be taken into account as well. As such it adds another layer to the challenges that the transport operators face.

Precisely because of these challenges the MARA project was developed. How to ensure mobility in a remote area with a limited budget? Quite a few of the challenges that had been identified in the underlying planning documents (see chapter 2 and 4) have already been tackled over the last years – not least because of the introduction of the call-a-bus system in 2018. Still, some remain or have become obvious more recently. The following table outlines further more specific challenges that LUP is facing in the area of accessibility of and mobility in the region:

Table 8. Main challenges for mobility and accessibility of LUP

Region	The main problems of mobility
Ludwigslust - Parchim	<ul style="list-style-type: none"> ▪ Public transport with buses (including the public call-a-bus service) are limited to the administrative area of the district and therefore restrict mobility in places situated close to LUP's borders (but people don't perceive this as a border). The challenge is to link (timetables, information, tickets & offers) the district's public bus transport to mobility offers (not only public buses) of the neighbouring districts / federal states ▪ The call-a-bus system has the capacity for much wider usage. The challenge is to further improve the system (e.g. complete electronic workflow, i.e. information, order, payment, payment of subcontractors) but also to provide more and better communication/information about the service ▪ LUP is partly benefiting from the location in the wider metropolitan area of Hamburg. The challenge is that in the course of the further differentiation of the spatial division of labour, the volume of commuters is increasing ▪ Changes in the public service infrastructures (a medical centre closes, a supermarket opens in a different place or school hours change) require subsequent changes in public transport. The challenge is to detect the change in mobility flows and adjust the transport offers accordingly ▪ Tourism sights and offers are not sufficiently interconnected. The challenge is to improve public transport and regional rail accessibility of tourist attractions within the district and across the district borders (e.g. from Hamburg and Berlin). ▪ The integration of transport systems (intermodal mobility concepts) can be further improved. The challenge is to bundle the timetable information in one place (website, App etc.) and to promote this info widely. Here the needs of tourists should be taken more into account e.g. by including also information on local mobility offers such as shipping, bicycle and canoe rentals and shuttle services of hotels and restaurants ▪ A revision of the planning approach could be considered. So far the state plan sets the frame for the local / regional plans. This order could be reversed. As the responsibility for public road transport rests with the districts, who also know their people and needs best, they could be the starting point of the planning approach. If then the mobility concepts of the municipality/district are the starting point the challenge is how to still ensure an integrated state and national transport plan.

Disparities between the current mobility needs and the existing mobility solutions

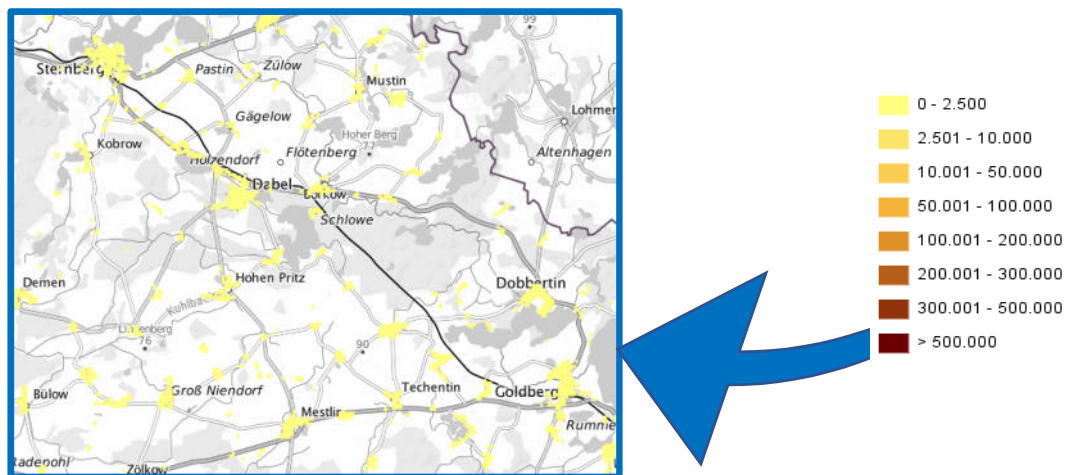
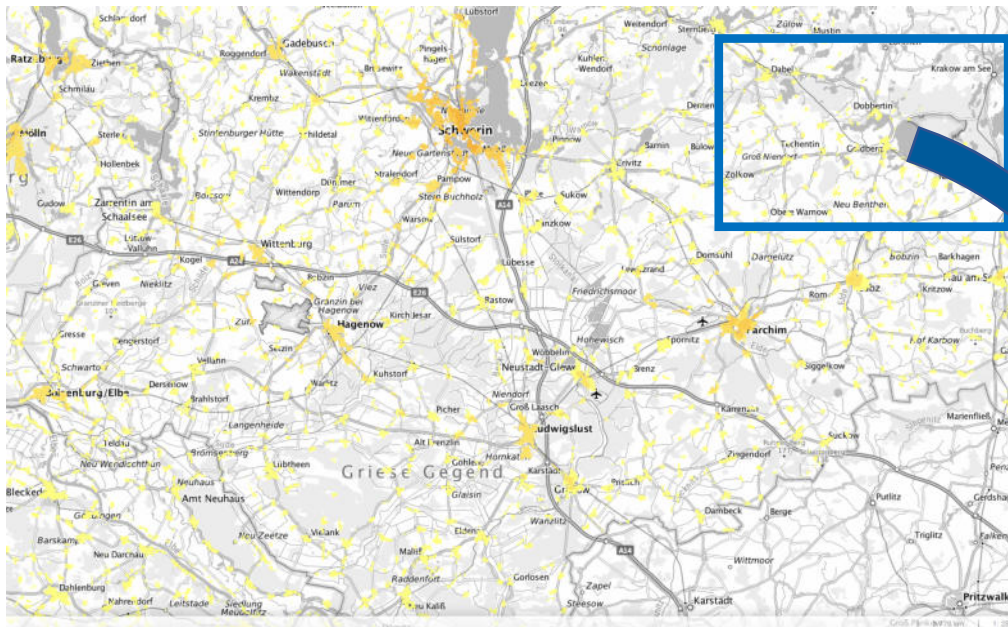
In a next analytical step mobility mismatches (gaps) in the region between the current mobility needs and the existing mobility solutions have been identified. The main results of this analysis are summarized in this chapter.

An important tool for the analysis has been the “accessibility portal” of the Hamburg Metropolitan Region, of which LUP is the most Eastern part. The accessibility portal was used in identifying parts of the district LUP where specific challenges remain, i.e. where the demand for public transport as elaborated in the previous chapter is not met in an ideal way. Or in other words (referring to the guiding political principle): where the access of people using public transport to services and public service infrastructures is excessively difficult.

- **1st topic work: Accessible jobs in the district of Ludwigslust-Parchim**

The maps show the number of jobs accessible within 30 minutes by public transport (or on foot) from any given place in LUP. The accessibilities are mapped on a populated 100-metre grid and an area-wide 500-metre grid. The workplaces are also mapped outside the district to avoid edge effects.

The calculation of public transport journey times is based on real timetable data on a normal Tuesday of the 2018/2019 timetable period. Only timetable journeys between 6am and 8am are considered. The travel time also includes walking times to and from the stop and a waiting time at the starting stop. The transfer frequency corresponds to the necessary transfers on the fastest connection.



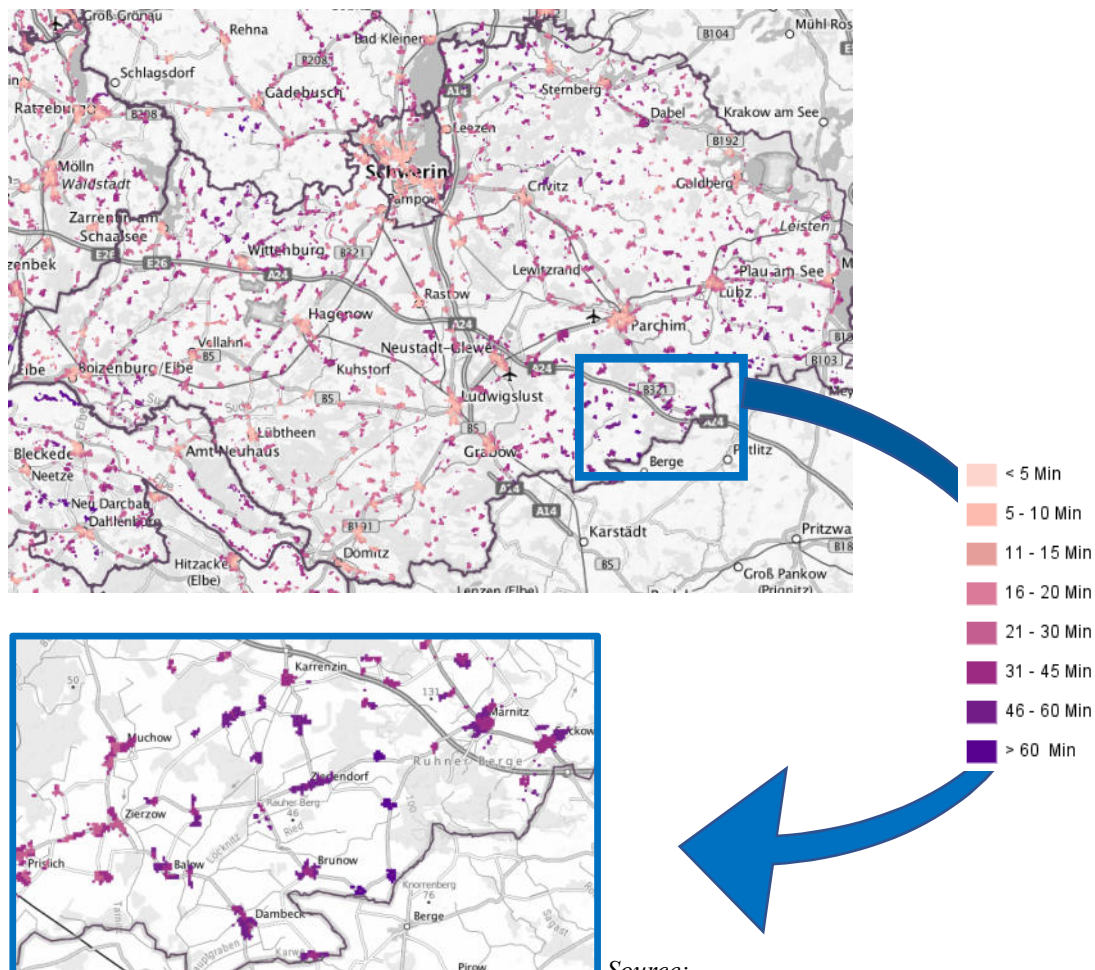
Source: <https://metropolregion.hamburg.de/erreichbarkeitsanalysen/>

The analysis shows that there is a close relation between proximity to a railway station and the number of accessible jobs. Taking into account that jobs can have also a supra-regional mobility dimension, the situation is relatively satisfactory. The middle order centres, Schwerin as state capital and (at least in the Western part of LUP) the proximity of the Hamburg metropolitan region offer a good number of jobs (for a remote region) that can be reached by public transport.

The section of the map that we have highlighted is exemplary for the regions in LUP from which only a few jobs can be reached. No direct access to local railway and no regular / fast bus lines that allow to travel relatively quickly to the next central place. This holds true in particular for the Northeast and the Southern part of the district.

- **2nd topic shopping: Accessible supermarkets in the district of Ludwigslust-Parchim**

The maps display the minimum time that is needed to reach the next supermarket by public transport. All other parameters (year, map, edge effects etc.) are the same as in topic 1.

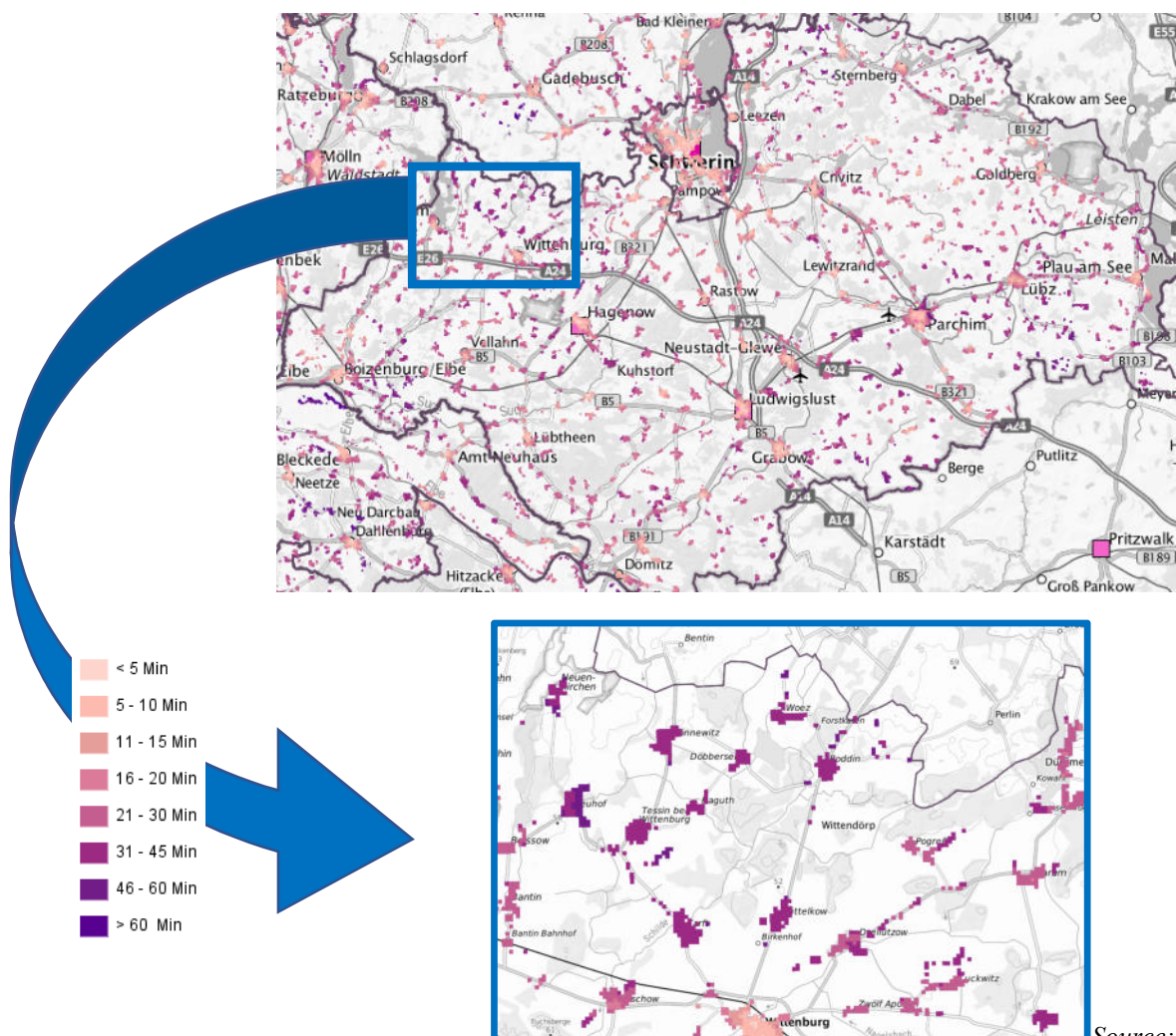


Source: <https://metropolregion.hamburg.de/erreichbarkeitsanalysen/>

The access to supermarkets is of high relevance as it is important for almost all user groups (incl. tourists) and hence for many people that are dependent on public transport. Overall, the situation is good. Shopping has a rather local mobility dimension hence the dense network of on-call buses pays off. From most communities it is possible to reach the next supermarket in less than 45 minutes by public transport. With one exception. In the area of the map that we have highlighted it takes more than one hour from most communities to go to the next supermarket.

- **3rd topic medical services: Accessible primary health care in the district of Ludwigslust-Parchim**

The maps display the minimum time that is needed to reach the next general practitioner by public transport. All other parameters (year, map, edge effects etc.) are the same as in topic 2.

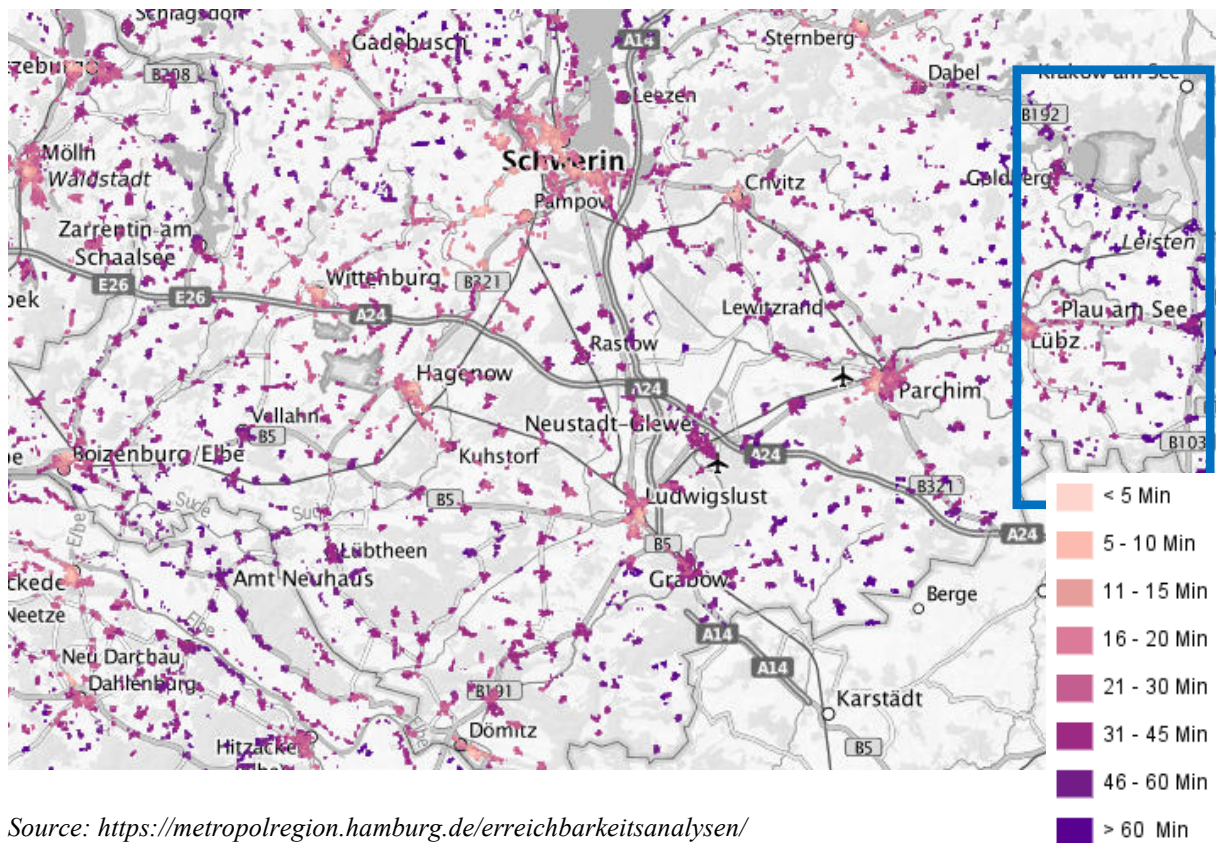


Source: <https://metropolregion.hamburg.de/erreichbarkeitsanalysen/>

The access to primary health care is of high relevance in particular for the growing user group of elderly people as well as for families with children. Overall, the situation is good. From most communities it is possible to reach the next general practitioner in around 30 minutes by public transport. Only in few parts, as e.g. highlighted in the Northwest, it takes a bit longer.

- **4th topic schooling: Accessible upper schools in the district of Ludwigslust-Parchim**

The maps display the minimum time that is needed to reach the next upper school by public transport. All other parameters (year, map, edge effects etc.) are the same as in topic 2 / 3.

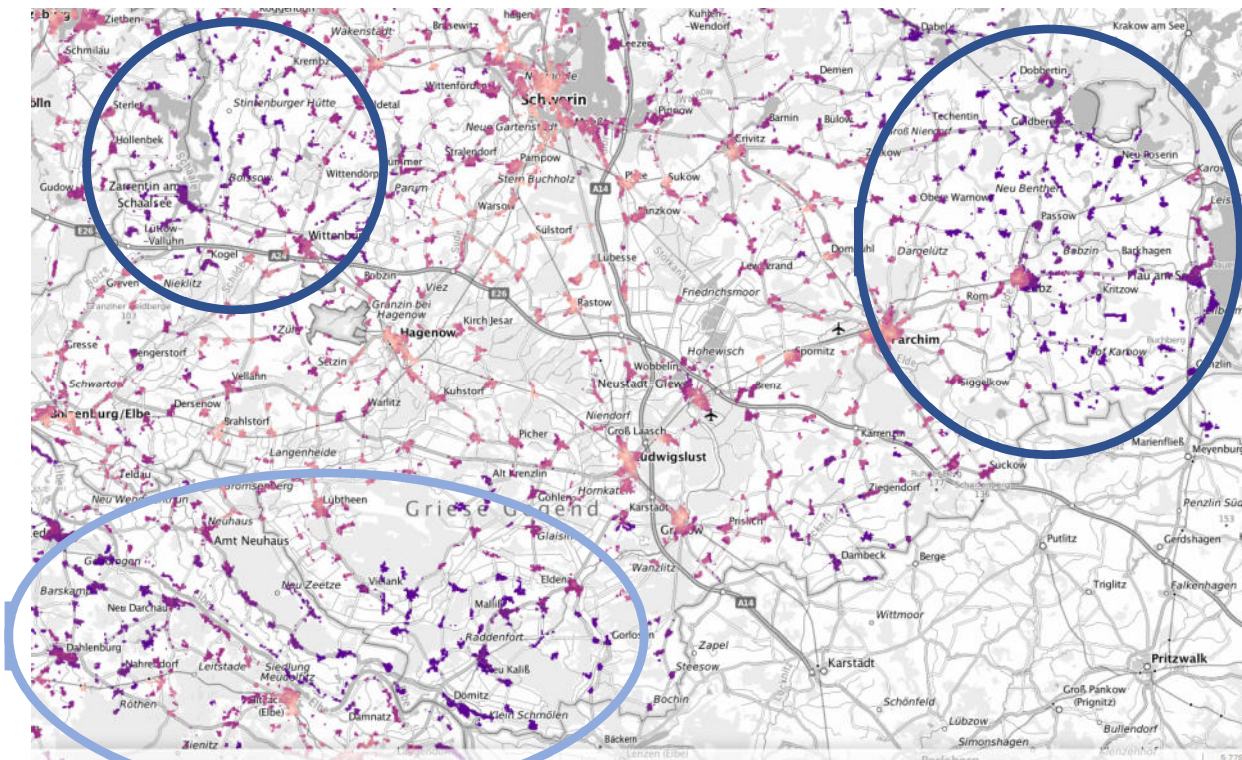


Source: <https://metropolregion.hamburg.de/erreichbarkeitsanalysen/>

The access to schooling is of high relevance in particular for families with children. Overall, the The access to primary schools (which is not shown here) is very good. The network of bus lines that were set up in particular to meet the needs of pupils works well. The access to secondary schools (here in particular grammar school) is more difficult. In first place because there are much less grammar schools than primary schools. Here especially in the Eastern part of the district several communities can be found where pupils need to travel more than 60 minutes to reach the next grammar school.

- **5th topic railway stations: Access to the railway network in the district of Ludwigslust-Parchim**

The maps display the minimum time that is needed to reach the next railway station by public transport. All other parameters (year, map, edge effects etc.) are the same as in topic 2 / 3 / 4.



Source: <https://metropolregion.hamburg.de/erreichbarkeitsanalysen/>

The analysis of the access to the local railway stations is supporting the previous findings. Shortcomings in the previous topics can be related to difficult access to railway stations. The access problems in the East (schooling, jobs) both have a regional or supra-regional dimension and therefore correlate with difficult access to railway stations. The area in the South can apparently better compensate for the poor railway accessibility in this area: Especially the topics with a strong local dimension (shopping or primary health care) work well in the South.

- **6th topic tourism: Access to natural sites**



Source: GeoPortal.MV (www.geoportal-mv.d)

LUP has three natural sites (biosphere reserves and nature parks) which are in particular interesting for nature tourism: The Elbe River Landscape in the south, the Schaalsee area in the northwest and the Sternberg Lake District in the northeast.

All happen to be at the border of the district stretching also into the neighbouring federal states and / or districts. This calls for cooperation with the neighbours when designing local mobility models like e-bike sharing

systems.

When comparing the location of the natural sites with the map highlighting the regions that have difficult access to local railway stations (see topic 5) it becomes obvious that they always match: The accessibility of nature sites for tourists coming from other parts of Germany or abroad is particularly difficult.

Table 9. Identified Gaps that provide room for improvement

Analytical Tool	GAP	User groups & mobility needs affected	Possible Action
Accessibility portal	<ul style="list-style-type: none"> The access to local railway stations is suboptimal in regions that are far away from the railway network 	<ul style="list-style-type: none"> Families: Driving to work (incl. commuting to Hamburg etc.) Singles / Couples without children: Driving to work (incl. commuting to Hamburg etc.) 	<ul style="list-style-type: none"> Alternative , quicker feeding services are needed (incl. private and civil society initiatives)
	<ul style="list-style-type: none"> Mobility needs with a predominantly local dimension (schooling, shopping) are suboptimal in the East and Southeast of the district 	<ul style="list-style-type: none"> Elderly people: all needs Youth: all needs Families: most needs Tourists: Shopping 	<ul style="list-style-type: none"> Better integration with neighbouring transport operators: Integration of network, timetables & timetable information, ticketing
	<ul style="list-style-type: none"> The three natural sites in LUP are poorly connected to the supra-regional railway network 	<ul style="list-style-type: none"> Tourists: Travelling to the accommodation & recreational activities (walking, cycling, boating, canoeing etc.) 	<ul style="list-style-type: none"> Coordinated transfer offers from the tourism sector & sharing concepts (cars & bikes)
Population Mobility Monitor	<ul style="list-style-type: none"> Incoming and outgoing mobility streams of communities located at the border of the district of LUP show the high relevance of destinations located in neighbouring districts / federal states that is not reflected in transport offers 	<ul style="list-style-type: none"> Elderly people: shopping, medical services Youth: Attending extracurricular activities Families: shopping, medical services Tourists: Recreational activities (walking, cycling, boating, canoeing etc.) 	<ul style="list-style-type: none"> Cooperation and integration with transport operators from neighbouring districts / federal states needs to be established / improved: Integration of network, timetables, ticketing

Expert interviews	<ul style="list-style-type: none"> The design of the public bus transport is supply-driven, information on real mobility streams is scarce 	<ul style="list-style-type: none"> Mainly transport operators (not user groups) 	<ul style="list-style-type: none"> Tools for digitally cross checking the supply with the real transport demand are needed
	<ul style="list-style-type: none"> Innovative models like the call-a-bus system are not well known by inhabitants and even less by tourists 	<ul style="list-style-type: none"> Elderly people Tourists 	<ul style="list-style-type: none"> Efficient communication awareness raising campaigns (incl. social media) are needed
	<ul style="list-style-type: none"> The integration of transport modes is incomplete 	<ul style="list-style-type: none"> Singles & Families: Driving to work (incl. commuting to Hamburg etc.) Tourists: Travelling to the accommodation & recreational activities (walking, cycling, boating, canoeing etc.) 	<ul style="list-style-type: none"> State-wide uniform information along the entire journey including sales, booking and paying of mobility services of all types
	<ul style="list-style-type: none"> Public financing is not supporting sufficiently innovative mobility models (e.g. community bus/transport service, driver qualification of volunteers or those with side jobs) 	<ul style="list-style-type: none"> Directly: Operators of innovative mobility offers Indirectly: All user groups in areas with limited mobility offers 	<ul style="list-style-type: none"> The districts need to have an own budget line dedicated to innovative mobility models

Source: Own analysis

Innovative solutions to improve mobility in the region

The gaps identified for LUP in the previous chapter can be grouped into three different action fields suited to address them:

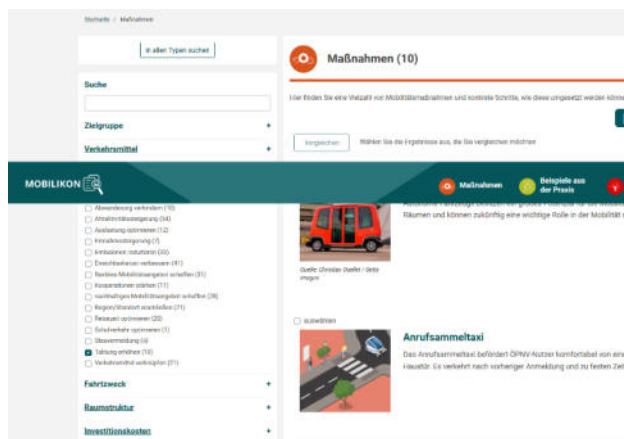
Table 10. Action fields for improving mobility in LUP

	Cooperation & Integration	Digitalization & Internet Applications	New Transport Means & Operators	Other
Identified Gaps	<ul style="list-style-type: none"> Better integration of local transport means: Integration of network, timetables & timetable information, ticketing 	<ul style="list-style-type: none"> Tools for digitally cross checking the supply with the real transport demand are needed 	<ul style="list-style-type: none"> Alternative , quicker feeding services are needed (incl. private and civil society initiatives) 	<ul style="list-style-type: none"> The districts need to have an own budget line dedicated to innovative mobility models
	<ul style="list-style-type: none"> Cooperation and integration with transport operators from neighbouring districts / federal states needs to be established / improved: Integration of network, timetables, ticketing 	<ul style="list-style-type: none"> Efficient communication & awareness raising campaigns (incl. social media) are needed 	<ul style="list-style-type: none"> Coordinated transfer offers from the tourism sector & sharing concepts (cars & bikes) 	
			<ul style="list-style-type: none"> State-wide uniform information along the entire journey including sales, booking and paying of mobility services of all types 	

The main emphasis of this Regional Action Plan for the district of Ludwigslust Parchim has been on identifying the district's specific gaps between the existing mobility offers, which are already very advanced when comparing it with other remote areas in Mecklenburg-Vorpommern, and the mobility demand of the user groups.

Even if there are needs and challenges which are common for most rural, remote areas there are some needs and challenges which are specific for LUP. For proposing solutions it is good to make use of good practice examples from other regions or countries that could be adapted to the requirements of LUP. Since the end of 2020 there is a new platform that provides local and regional transport planners with a wealth of information: The Mobilikon Platform.

Online platform "www.Mobilikon.de" for municipal mobility management



Source: www.mobilikon.de

Mobilikon is aimed at municipal mobility managers, especially in rural regions, but also at interested citizens, scientists or associations. It has been set up by the German Federal Institute for Research on Building, Urban Affairs and Spatial Development. The online reference work helps municipalities to find and implement mobility solutions tailored to their specific local challenges. The user can frame the search for suitable mobility offers by choosing relevant local criteria (e.g. target group, objective, means of transport or costs). Mobilikon already offered more than

250 offers when it went live in November 2020: These range from concrete transferable mobility measures to planning, legal and financial instruments to help with the implementation of mobility offers, such as the implementation of citizen participation, mobility consultations or mobility apps. Mobilikon lists currently 75 measures that are intended to achieve a targeted effect to improve mobility. The desired effect relates to different target groups (e.g. senior citizens, pupils) and travel purposes (e.g. school transport, doctor's visit). These measures are linked to practical examples that serve to explain or present a mobility measure as a model.

In the following sub-sections one or two examples of possible mobility solutions for the three identified action fields are presented. The examples are not necessarily listed on Mobilikon.

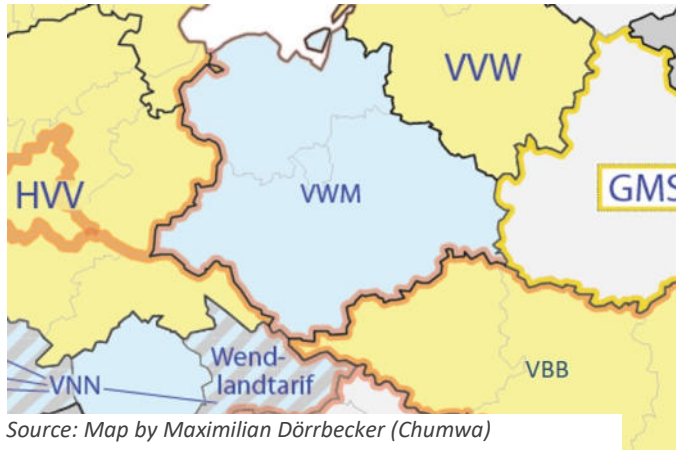
Mobility solutions related to cooperation & integration

The analysis has shown that mobility needs with a predominantly local dimension (schooling, shopping) could be further improved in the east and southeast of the district as the user groups (e.g. youth and elderly people) need more time to reach their destinations than in other parts of

the district. As the bus and call-a-bus system is also operating in these areas this might either call for more schools and supermarkets or for a better integrated mix of local transport means

Examples for integration of local transport means:

- The core of "**garantiert mobil!**", which was introduced in the rural Odenwald district, is an information and booking system that is available both as a web application and as a mobile application (app) for smartphones. It is also possible to use the mobility services via the mobility centre, for example by making an appointment in person or by telephone in advance. In the information and booking system as well as in the mobility centre, different mobility offers are offered without hierarchy:
 - Public transport: In addition to the classic scheduled bus service, the public transport offer includes on-call buses, a night bus ("MondscheinBus") as well as leisure buses ("NaTourBus", "NeO-BUS" and "NibelungenBus")
 - Carpool journeys: Those offering journeys can register on the platform and offer their journey at any time. Ride-sharing journeys can be offered on all routes in the Odenwald district; both the starting point and the destination must be a public bus stop. A prerequisite for setting up a ride-sharing service is the provision of a suitable vehicle. Private ride providers receive a credit of 12 cents for each kilometre they transport a passenger. The arranged rides are not subject to commercial passenger transport and are therefore not subject to authorisation under the Passenger Transport Act (PBefG).
 - taxOMobil: In addition to these two mobility offers, the user can also always take advantage of the taxOMobil booking option at his or her preferred time, thus fulfilling the mobility guarantee. In addition to the RMV tariff, a distance-dependent surcharge is payable. The surcharge is reduced by registering early and booking additional passengers. The trips are offered in cooperation with the local taxi and rental car industry. (www.odenwaldmobil.de)
- The **mobility station in Mettingen** (proper name: "Rad+BUS mobilSTation") forms the interface between public transport and bicycle traffic. Initially located at a local shop, it has been located in the Mettingen tourist information centre in the town centre since 2018. The tourist information centre is connected to the public transport network and is served by an express bus, among other things. It also offers e-bike rental. In addition to the spatial integration, a tariff integration simplifies the linking of the forms of mobility: The "MobilAbo" of Regionalverkehr Münsterland GmbH (RVM) is not only valid on buses and trains in Tecklenburger Land, but also entitles the holder to three months of free e-bike use. The mobilSTation also offers mobility advice as well as public transport and pedelec training.



The preliminary work with the Population Mobility Monitor tool has shown the big incoming and outgoing mobility streams to and from communities located at the border of the district of LUP to destinations located in neighbouring districts / federal states. The high relevance of this mobility need is not sufficiently reflected in transport offers. This is also very relevant for tourists as all three natural sites in LUP are located at the district's border and share their space with neighbouring

regions.

Examples for cooperation and integration with transport operators from neighbouring districts / federal states:

LUP is part of the West Mecklenburg Transport Association (VWM on the map), which connects LUP inter alia with the state capital Schwerin, which is important. However, two large transport associations (HVV for the Hamburg metropolitan area and VBB for the Berlin-Brandenburg Metropolitan area) are also of key relevance for LUP – both for commuters as well as for tourists.

They form good practice examples for the integration of different transport operators and means from different federal states. The motivation for the integration are the mobility needs of the people that are commuting from the surrounding areas to the urban centres or travelling from the city to the country side for recreational purposes. The administrative barriers (three resp. two federal states are involved) have been overcome.

The same user groups (commuters and tourists) would also benefit of an integration of the VWM with the HVV and the VBB. In the end of 2020 it was planned to start talks with HVV with the aim of integrating VWM into the HVV.

But also transport operators from other districts in LUP are very relevant. At the eastern “border” of LUP the cooperation and integration needs to be improved in order to better meet the local and regional mobility needs of the people living there.

Mobility solutions related to digitalization & internet applications

The network of bus stops and local railway stations in LUP was built up over decades and is historically grown. The bus lines and in particular the call-a-bus system was designed in a way that allows to access from every village a local railway station and to go to the next central place. As such the transport system was designed in a supply-driven way that leaves hardly any white spots which are not serviced. Still, the resulting mobility offer was never cross-checked

with the actual mobility demand. Such a needs analysis can be done in the form of a survey but more efficient are digital tools.

- The **Population Mobility Monitor** and the **D.U.GIS Mapping Tool** that were both developed in the framework of the MARA project are tools that can help. They allow the systematic investigation of the demand side of mobility. They can be applied for different time frames (summer vs winter, weekend vs weekday, morning vs. night etc.) and for different user groups. (www.mara-mobility.eu/tools)
- In 2021 the VLP will run together with the MARA project a pilot case study aiming at digitally cross-checking the timetable information (the supply side of the public transport system in LUP) with the real mobility streams of all people in LUP (the demand side) The objective is to develop a tool that allows to easily identify mismatches by providing graphic signals. Such a tool could be used to adjust for once the offer but also to introduce (and monitor) seasonal changes in the timetable that are better suited to address the real demand.

At 581 cars per 1,000 inhabitants, the level of motorisation in LUP is high, which is typical for rural areas. The public transport offer is in principal good, but an economic operation of bus transport is hardly possible. With the existing mobility offer, not all communities with relevant numbers of inhabitants can be attractively served by public transport. In addition, there are sometimes long (walking) distances from the village to the bus stop or the local railway station.

These general conditions are similar in the neighbouring district of Ostprignitz-Ruppin. One cost driver is the ratio of drivers to passengers: There are only very few passengers per driver - regardless of whether it is a call bus or a regular bus. That is why there is a pilot project with autonomous vehicles in Ostprignitz-Ruppin.

- **Autonomous minibuses in the Ostprignitz-Ruppin district:** In the first phase of trial operation, the route of the autonomous minibus in Wusterhausen/Dosse runs around 3.5 km via the historic town centre and the railway station with its small shopping centre to a supermarket in the south of the town. In the second phase since December 2019, a settlement on the outskirts of the town to the north was also connected. At the station, there is a connection to the regional train and the regular bus. Autonomous buses are no alternative, yet. The pilot project revealed that quite a few technical challenges remain before a regular autonomous service could be established (www.autonv.de). Still, the approach makes sense and may be feasible in the future.

In the action field cooperation & integration we gave already two examples for the integration of local transport means. In this context the possibilities that digitalization & internet applications provide are important. It is a barrier for the user group if only information on one transport means is available at a time. This incomplete information or the lack of coordinated timetables is a barrier that prevents more people from using public transport.

Examples for uniform information along the entire journey including sales, booking and paying of mobility services of all types:

- **Jelbi** is the MaaS (mobility as a service) platform of the Berliner Verkehrsbetriebe (Berlin public transport services, BVG) for bundling mobility services and sharing services; service also in Munich; winner of the German Mobility Prize 2019. The app integrates various services (bus, rail, scooters, bicycles, cars, ride sharing, taxi) and is a booking and payment platform. The app was developed by the start-up Trafi. Core functionalities: Bundling, integration. (www.jelbi.de)
- **Wohin-du-willst** is a mobility app from Deutsche Bahn for rural regions. All public transport services, including share taxis and on-call buses, are bundled on the platform; districts have the option of tailoring the app to their region. When installing the app the user selects the desired location/district. The app positions itself primarily as a planning aid for routine trips: Frequently used routes and connections can be saved, timetables are available offline, push notifications remind users of a trip or provide real-time information about disruptions. Core functionalities: Mobility planner for rural regions. (www.wohin-du-willst.de)

Another gap that was identified is that the call-a-bus system in LUP is not well known by inhabitants and even less by tourists. Targeted information campaigns could help to increase the number of passengers. This in turn would reduce the CO₂ emissions (less individual car traffic), increase access to public services, bring more tourists (without their car) to LUP and decrease the relative cost of public transport.

Examples for communication & awareness raising campaigns (non-digital):

- **New citizen marketing in Sulzfeld:** As part of a model project, the municipality of Sulzfeld developed a welcome package that was given to new residents when they registered at the residents' registration office. This package contained a book of vouchers including
 - a free ticket for the city railway for a five-day trial period
 - a voucher for the municipal car sharing service (one-day free use of an electric car)

Eleven new residents were interviewed about the welcome package. None of the respondents redeemed the car sharing voucher, but seven used the public transport voucher. Three new residents reported several months after moving in that they were using public transport more because they had positive experiences with public transport when redeeming the public transport voucher. Regardless of changes in mobility behaviour, all respondents remembered the welcome package as a nice gesture of welcome.

The vouchers were an essential success factor. It was not the information material, but the low-threshold possibility of a non-binding public transport test use that was decisive for changes in the mobility behaviour of three of the eleven respondents. (www.nvbw.de)

Mobility solutions related to new transport operators & means

One (obvious) result of the analysis was that the access to local railway stations is suboptimal in regions that are far away from the railway network. If local train stations are far away and the existing bus transport offers can't compensate for this disadvantage the need for alternative, quicker feeding services is big – especially for user groups that have regional and supra-regional mobility needs. This includes commuters but also tourists that are coming to LUP for its natural beauty. But the three natural sites in LUP are poorly connected to the supra-regional railway network.

Examples for alternative mobility offers – also from private operators and civil society initiatives

- **ILSE** pilot project: As part of the pilot project 'Long-term securing of supply and mobility in rural regions' the Federal Ministry of Transport and Digital Infrastructure (BMVI) implemented the ILSE pilot project in (and together with) the district of Vorpommern-Greifswald between 2016 and 2019. The innovative element is a concept of 'ILSE ride sharers' in which outpatient nursing services, social transport services and the like provided non-commercial transport for third parties through a scheduling platform. (http://www.modellvorhaben-versorgung-mobilitaet.de/fileadmin/files/dokumente/Regionsdossiers___Webversionen/Regionsdossier_VG_Web.pdf)
- In Schleswig-Holstein there is a coordinating body '**Dörpsmobil SH**' that provides information to interested municipalities, associations and initiatives and support during the planning and establishment of communal cars. In 2020 the body published a revised planning guideline for (electric) car sharing in rural regions (<https://www.doerpsmobil-sh.de/koordinierungsstelle/downloads>) and also maintains a network of local Dörpsmobil sponsoring organisations in Schleswig-Holstein for the purpose of providing information and sharing experiences and offers a state-wide uniform software and hardware solution for booking and invoicing.
- The aim of the initiative '**Dorfbeweger**' is to establish a mobility system in the village of Effolderbach, which has 500 inhabitants, consisting of private car sharing, lending stations with pedelecs and e-load bikes, as well as ride-sharing benches and a citizen's car in the car-sharing system. The two e-cars are available at a car-sharing parking lot, where the vehicle is picked up and parked again. After the one-time registration, a vehicle can be booked flexibly via the Internet or by app. Opening and closing is done with the help of an RFID chip, which is stuck on the driver's license. The pedelec and e-bike rental stations are located in lockable bike boxes on municipal properties strategically distributed throughout the village. (www.dorfbeweger.de)

Alternative mobility offers are in particular relevant and attractive for tourists that are not coming with their own car (see also the example “mobility station in Mettingen” above)

Examples for coordinated transfer offers from the tourism sector & sharing concepts

- **Meli-Sharing:** E-scooters have been rented out in the two small towns of Meppen and Lingen since May 2018. The start-up Share2Move currently provides 81 electric scooters for rental in this rural region (as of April 2020). The electric scooter rental works according to the free-floating principle. This means that there are no fixed rental stations. The scooters can be freely parked and booked in the service area. The scooters are booked via a smartphone app. First of all, registration is required on the Share2Move website, which costs a one-time fee of 19.95 euros. Using the app, the user can find and reserve the nearest electric scooter. The scooter's transport box can also be opened with the help of the app, which contains the ignition key and a helmet, among other things. (www.meli-sharing.de/)

The approach works of course best in restricted areas like cities or islands. But in a modified form, (also with e-bikes) it could be tested also in the three natural sites of LUP.

- The service ‘**MÜRITZ rundum**’ (mobile without a car using guest tickets and the national park ticket) is aimed at overnight guests and day visitors in the Müritz area. In the high season from 1 April to 31 October, overnight guests can use buses free of charge using their guest ticket as well as the boats of the White Fleet on Lake Müritz for a reduced fare; the same benefits apply for day visitors when they purchase a national park ticket. The service is financed by fare adjustments via the spa tax from the four certified partner locations Klink, Rechlin, Röbel/M and Waren (M) with a net 39 cents per overnight stay. The service is a collaboration between the partner locations, the Mecklenburg-Vorpommersche Verkehrsgesellschaft mbH (the transport association for Mecklenburg-Vorpommern, MVVG), the Müritz National Park and the tourism association for the Mecklenburg lake district, Tourismusverband Mecklenburgische Seenplatte e. V., which coordinates the collaboration. (<https://www.mueritz-rundum.de/mueritz-rundum-mobil-ohne-auto>)

A similar approach could also combine public transport with bike sharing or canoeing offers

Recommendations and operation plan for improved mobility offers

This Action Plan is a response to the call of the state regional development program for Mecklenburg-Vorpommern and the integrated district development concept Ludwigslust-Parchim 2030 to develop new mobility solutions for remote areas in Mecklenburg-Vorpommern resp. LUP.

As such it has identified challenges for the public transport in LUP, mobility needs of the most relevant user groups and crosschecked this demand with the existing mobility offers. This crosscheck has led to the identification of areas (both geographically as well as thematically) where there is still room for improvement (“gaps” would be a too drastic term). These can be roughly grouped into three action fields, for which in the previous chapter innovative solutions had been identified.

Mobility and adequate transport offers are a prerequisite for the citizens of LUP to continue living and residing in the county. The challenges of the region, associated with sparsely populated areas, demographic changes, limited financing and trends towards urbanisation, force the district in LUP to prioritise work on future-oriented public transport facilities. The private sector is dependent on a functioning transport system. Especially in tourism, it is important that guests from Berlin and Hamburg can travel without a car and move around the region easily.

The innovative mobility solutions that we have proposed in the previous chapter are the core message of this Action Plan. In this chapter we want to propose possible starting points for turning these innovative approaches into reality.

Instruments

An instrument is a means to an end that is used to carry out an innovative solution. There are legal, planning or financial instruments. For example, a planning instrument is a mobility concept, a legal instrument is a law, and in the area of funding and financing it can be a federal programme or an ideas competition.

Possible instruments in and for LUP include:

- In chapter 3 above (“Challenges of transportation models and recommendations for improving mobility offers in policy and planning documents”) we assessed the relevant policy and planning documents that could uptake some of the findings (gaps, action fields, innovative solutions) in order to create an enabling political framework. The following list shows that some of them will be updated soon:
 - State regional development program for Mecklenburg-Vorpommern: Update process starts 2021

- Regional development program of the planning region Westmecklenburg: Update process starts 2021

The Ministry of Energy MV is planning to tender an investigation into the possibilities of spatial planning, especially at the level of regional planning, with regard to the introduction or further development of demand-oriented public transport services (e.g. call-a-bus systems) in rural areas in addition to the fixed route network. Consideration should also be given to dealing with seasonally varying user groups of local public transport, e.g. in tourist regions. The results of this spatial planning expertise shall serve as orientation for regional planning in Mecklenburg-Vorpommern and other interested federal states for any new spatial planning specifications in the context of updating the regional planning programmes.

On the district level it is not foreseen to update neither the regional transport plan of the planning region Westmecklenburg (adapted in 2014) nor the integrated district development concept Ludwigslust-Parchim 2030 (adapted in 2017), which is indeed a relatively new planning document which has already formulated some of the challenges that are also part of this document. The same holds true for the integrated state transport plan for Mecklenburg-Vorpommern

- Two Rural Development Areas („Ländliche GestaltungsRäume“ - LGR) are located in LUP. The LGR have their own financing instrument, the “LGR-Fonds”. This fund was established to finance innovative, exemplary projects from various fields of action. Among them explicitly mobility/accessibility is mentioned as very important. This could help to pilot some of the innovative solutions.
- The ERDF for Mecklenburg Vorpommern will soon launch its new operational programme for 2021-2027. In the programming period public transport was among the objectives.
- LEADER projects are in particular relevant for mobility projects of the tourism sector : LEADER regions are defined at the beginning of a funding period (hence now in 2021). In the LEADER region, local actors from a wide range of interest groups join together to form a local action group and draw up a regional development concept covering the period of the funding period. Based on the regional development concept of their LEADER region, the local working group selects projects for the promotion of rural areas that are to receive funding from the EAFRD.

In the Gap Analysis one finding was that the district needs to have an own budget line dedicated to innovative mobility models (other than train or bus transport). Public financing is not supporting sufficiently innovative mobility models (e.g. community bus/transport service, driver qualification of volunteers or those with side jobs). If financing beyond singular project funding would be available operators of innovative mobility offers (citizen buses, sharing concepts or mobility platforms) would receive a boost.

Implementation aids for operators and administration

Implementation aids are meant to support transport operators and planners in the process of developing and implementing new mobility solutions. They can be grouped in the categories marketing and communication, implementation basics, citizen participation and project organisation.

- Especially marketing and communication are crucial for the success of mobility offers. This requires a good marketing and communication strategy that makes use of different formats and channels.
- The necessity for marketing and communication was identified as one action field in LUP. This might call for of a marketing- and communication strategy which has to target a specific user group, e.g. tourists or elderly people. Depending on the identified user group means could include social media, flyer, vouchers, websites, press articles or radio programmes.
- Implementation baselines serve to methodically record the initial situation and thus create an important prerequisite for the identification of needs for action and the development of suitable solution approaches. The stocktaking can be directed at different objects of investigation, e.g. accessibility or the existing mobility offer. When identifying needs for action and developing solutions, it is advantageous to take different perspectives. An important instrument here is the survey of different actors, e.g. the survey of customers, of people with expertise or of public transport authorities.

The transport company VLP has identified together with the Ministry of Energy MV and the MARA project the necessity to identify and analyse the mobility patterns of the inhabitants (and tourists) with the help of new visualization tools. The analysis will be subject of a pilot case of the MARA project in LUP and will be based on mobile phones data that allows to model the mobility streams of all people – regardless of the user group. Mobility needs will be ascertained by analysing the accessibility of different destination types (work places, public and private service facilities, points of interest). The existing mobility offers will be identified and assessed against the results of this (prior) analysis. One of the results will be the identification of the public transport supply gaps in order to improve the mobility offers.

- The planning and implementation of a mobility project requires an efficient project structure. The project structure is important for the success of the project.
- The last important point to mention is public participation. Public participation makes sense in many phases of a mobility project, from the identification of the need for action to the development of options for action to the concrete implementation and evaluation.