

REGIONAL ANALYSIS OF CHALLENGES AND NEEDS

for the Rostock Region

D.T1.2.1

Version 1.0

10 06 2020

Rostock Port





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1. Methodology

1.1. Territorial Analysis

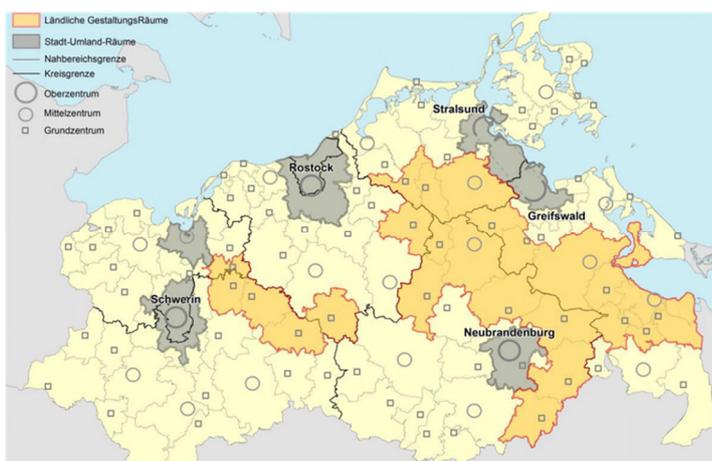
The Federal State of Mecklenburg-Vorpommern can be characterized by the following base facts:

- Capital: Schwerin
- Area size: 23,211 km²
- Inhabitants: 1.6 Mio. People
- GDP (nominal): 45 Billions EUR (2018); 28.700 EUR per capita
- Rate of unemployment: 6.7 % (2019)
- Area boundaries: Southern Baltic Sea, surrounded by the German counties Brandenburg, Lower Saxony and Schleswig-Holstein, to the east bounded by PL
- Natural conditions: long coastal region, 20 % forested areas, otherwise mainly characterised by plain areas and flat valleys, sandy grounds, partly knobby topography
- Important ports: Rostock, Wismar, Sassnitz, Stralsund

It is located along the Southern Baltic Sea in a triangle between the Sweden, Hamburg and Western Pomerania (Poland). High-capacity motorways (A19 in a north-south direction; A20 in a east-west-direction) connects the state with other countries and important growing industrial regions. A relatively dense rail network (in relation to the number of cities and population) allow convenient travel across the state.

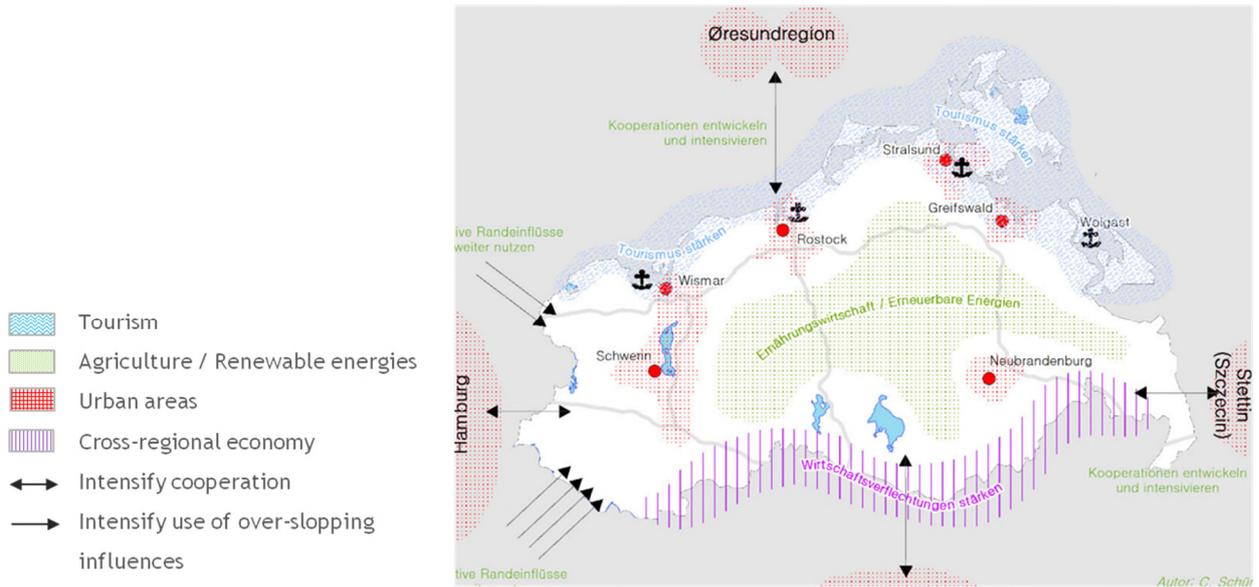
From an European point of view, the Federal state of Mecklenburg-Vorpommern is part of two core-network transport corridors: Orient-East Med and Mediterranean-Scandinavian. Both start or end in Rostock, the biggest city of the state, and underline the position of the city as well as the state as important hub for any transport flow between Central or South-East Europe and Northern Europe.

The following pictures show important spatial aspects from the region:



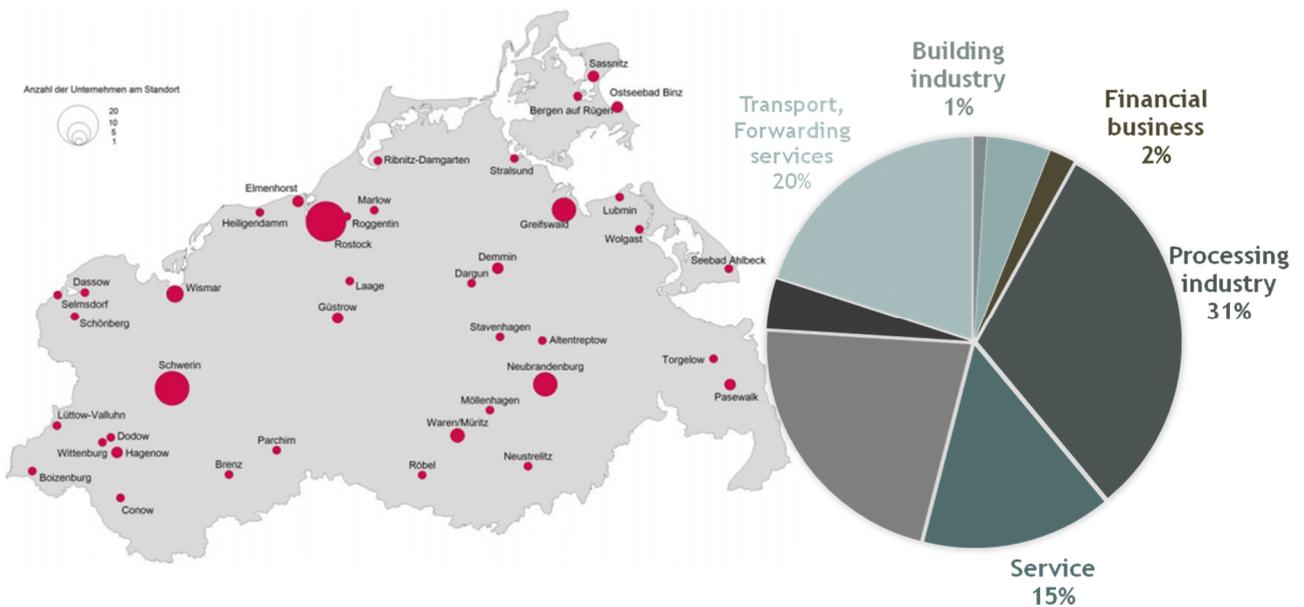
Settlement and Strategic / Spatial Aspects

- Rural areas
- Rural space of action
- (Sub-)Urban areas
- District border
- High-order centre
- Middle-order centre
- Low-order centre

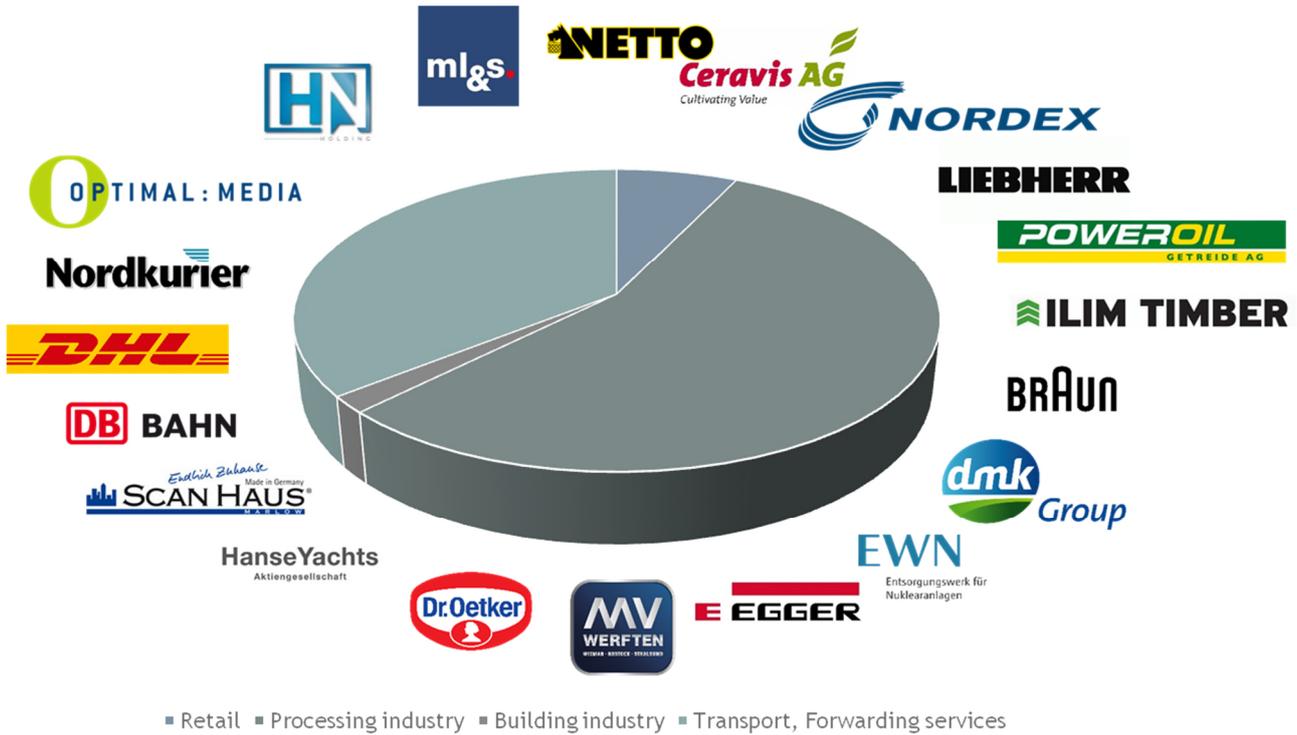


Source: Oberste Landesplanung (2016) and RRG (2013)

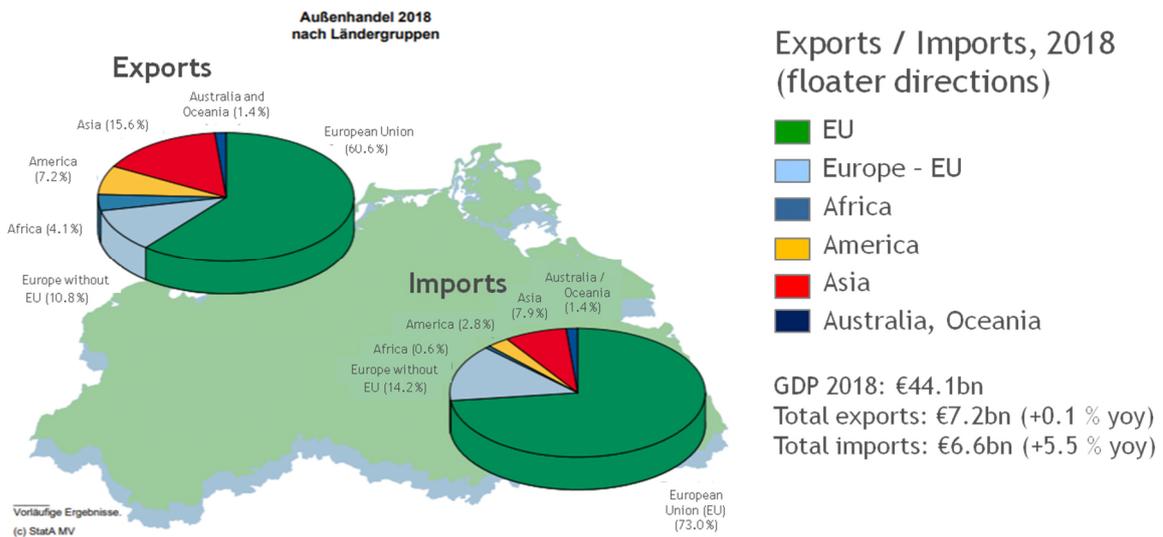
An overview about business/industry settled in the state comes from the following picture:



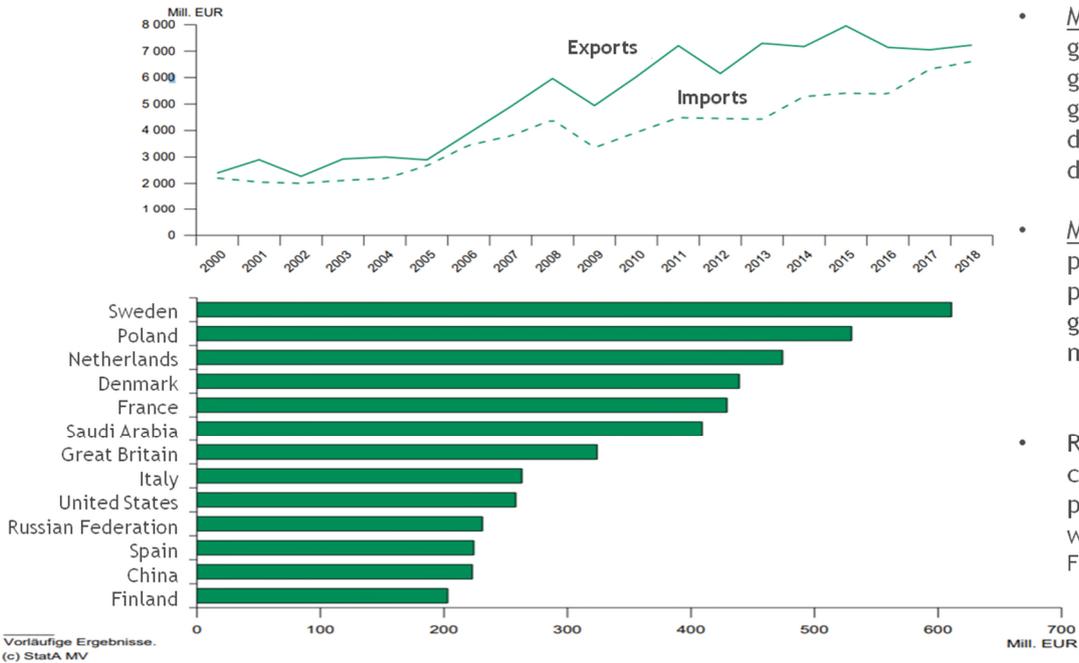
It is clear to see, that the transport and logistics industry has with 20% an important share of all industries active in Mecklenburg-Vorpommern. Even the processing industry is well established in this state. A selection of the most important companies settled here comes from the next picture:



The economic activities of Mecklenburg-Vorpommern are dominantly focussed on the European Union. The second and third most important trade partners are the Americas and Asia. A comprehensive overview about this relationships show the picture below:



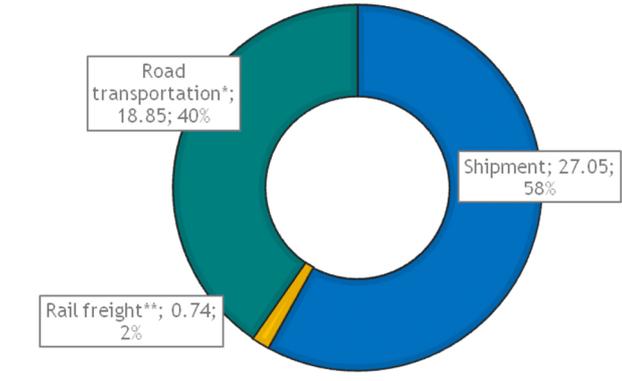
As "agriculture" country the main export is focussed on such goods. But even the industries which needs seaports to export or import their goods and raw materials have a remarkable impact on the trade statistics. Such companies moved their business from locations in Germany and Austria f.ex. to Mecklenburg-Vorpommern (Liebherr; Egger etc.) as the products they sell could not longer transported on roads and rail to seaports due to the increased size. A production facility in ports is in that sense of huge advantage and Mecklenburg-Vorpommern had sufficient space in its seaports.



- **Main exports:** grain, metal goods, power generation / distribution devices
- **Main imports:** petroleum, paper, metal goods & machinery
- Regional cross-border partnerships with PL, RU, FI, FR, USA

The modal split of the external trade of Mecklenburg-Vorpommern is dominated from shipping due to its location at the Baltic Sea coast. But this not only trade with origin in Mecklenburg-Vorpommern, it is even coming from origins far away, as the state is a typical transit state with its high-capacity transport network. The share of rail transport is very low, there are several reasons for that. Details about these flows comes from the chart below:

Trading volumes by transport mode 2018 (in million tons)



Total (2018):
46.64 Mio. t

- Established corridors:**
- North Sea - Baltic (TEN-T)
 - Scandinavian - Mediterranean (TEN-T)
 - Orient/East - Med (RFC)

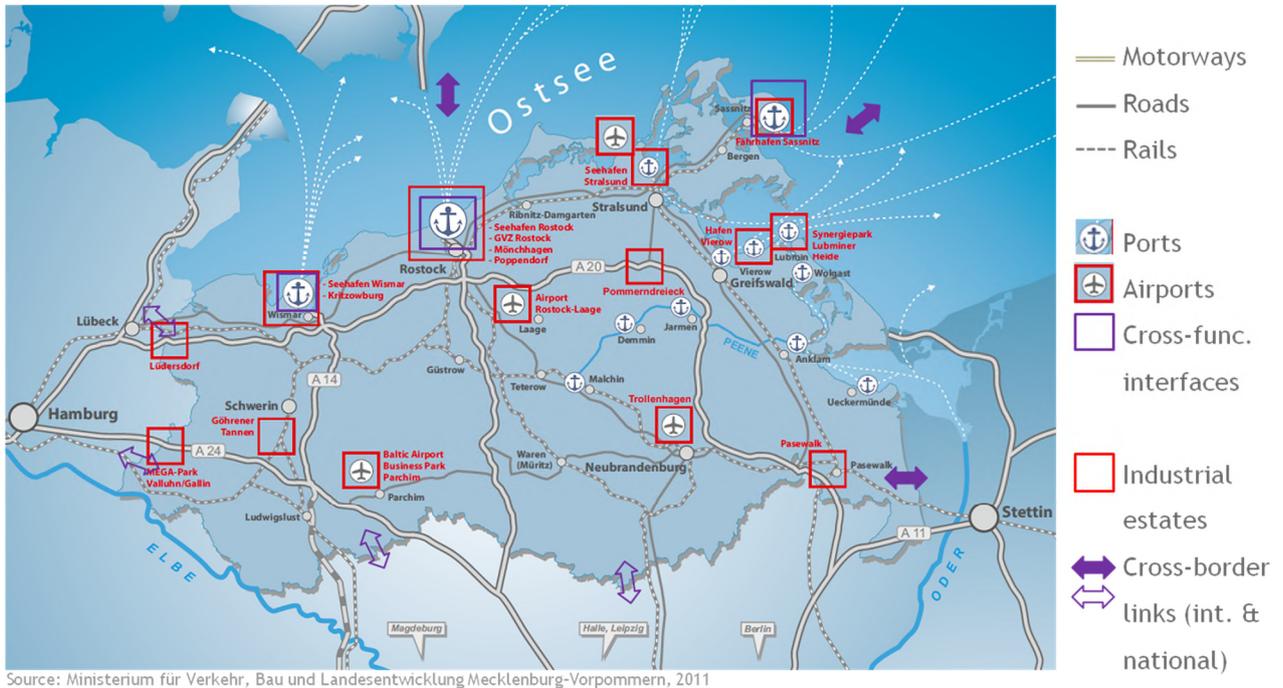
■ Shipment ■ Airfreight ■ Rail freight** ■ Road transportation*



The transport infrastructure network with an overview about all transport modes show the map below:

Even

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Even if the rail transport share is comparably low, it is the backbone intra-European transport chains. The majority of rail transport to and from Mecklenburg-Vorpommern is intermodal and have its origin or destination in the ports. From there it is going on ships to worldwide destinations or destinations in Northern Europe or the Baltic States/Russia. For example the dense intermodal transport network to/from the Port of Rostock with its connections across the Baltic Sea in the following chart:



Transport Infrastructure system

Seabed depth of 14.5 m, no watergates, no tides, suitable for ships up to 300 m*45 m*13 m

- Regular rail freight operations
- Regular ferry and ro-ro traffic
- Excellent location with respect to Eastern European markets
- Direct port connection to motorway A19, close access to motorway A20

- KV direct link
- - - KV direct link planned
- Ferry/ro-ro links

Direct railway links to Verona, Treviso, Cervignano, Brünn, Lovosice, Curtici, Wuppertal & Halle/Schkopau.

Ferries to Gedser, Trelleborg, Helsinki, Hanko & Kotka.

*all simplified

In order to be competitive from an industrial point or transport related point of view, the federal government currently analyse the situation and draft respectively agree on transport development plans or spatial planning strategies for the region. Some important trends affecting this are mentioned below:

- Constantly increasing trade relations among Baltic Sea neighbouring states
→ More employments in ports and forwarding service companies, higher regional income from port handling activities, increasing export range for regional agricultural and energy products
- Ship sizes tend to increase, boosting throughput volumes per ship
→ port infrastructure amendments must take place to serve changing developments and to keep competitive
- Freight throughputs on new Silk Road increase
→ goods will enter the BSR through sea ports by more hinterland rail transport; development might impact positively M-V's port throughputs
- New corridor build-ups/extensions
→ Change to generate attractive location places for new companies and industries in M-V, especially at infrastructure interfaces and preferably for processing industry
- To strengthen corridor nodes in M-V, especially the ports
- To serve higher demand and to adapt to increasing ship sizes approach fairways in Rostock and Wismar need to be deepened
- Port hinterland infrastructure in catchment area must improve to enhance node practise
- Newly developing port storage and operation areas should/must be accessible by rail
- Ongoing port electrification and digitalisation must take place to keep the ports competitive and to comply and to enable networking activities



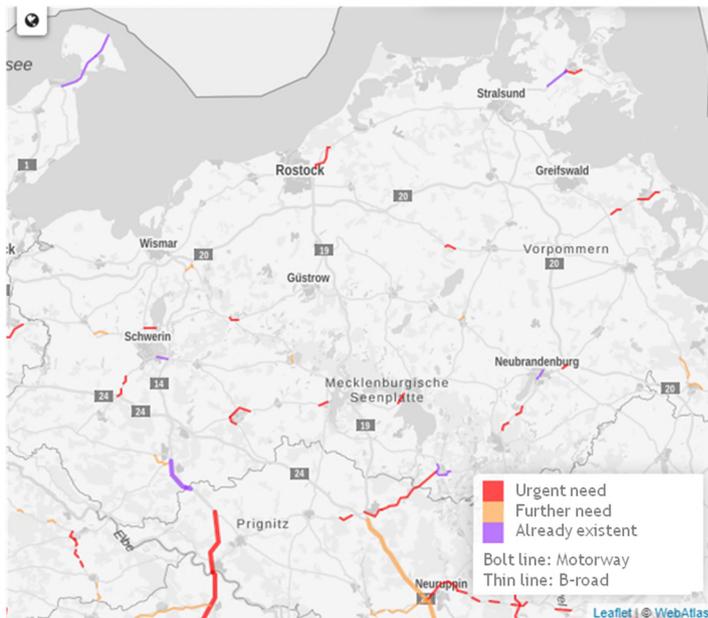
- Sufficient human capital and technical equipment to secure node efficiency
- Railway upgrading to forward goods timely in proper quantities

In order to reach the mentioned overall aim, the government identified several actions which foremost shall be realized. A selection of projects and the relevant planning documents are mentioned below:

- Federal Transport Infrastructure Plan 2030 (road construction projects along federal roads: B96, B104, B105, B110, B111, B189, B191, B192, B196, B321 and adaption of port infrastructures to the current development of increasing ship sizes in Rostock and Wismar)
- Core-network development plan for the Orient/East-Med Corridor (increase of speed and infrastructural realization of the corridor to establish fast and resilient Rostock ↔ Berlin freight links)
- Enhancement of port hinterland infrastructure → making M-V attractive for processing industries
- Infrastructural preparation for Fehmarn Belt Fixed Link impacts by 2030 and beyond (re-directioning of rail freight through construction of a rail “Southern curve” in M-V, near Schwerin)

As these are just the basic strategies for the development, the government decided to established special infrastructure projects across the state in order to reach the overall aim. The following three pictures map a selection of them for each transport mode:

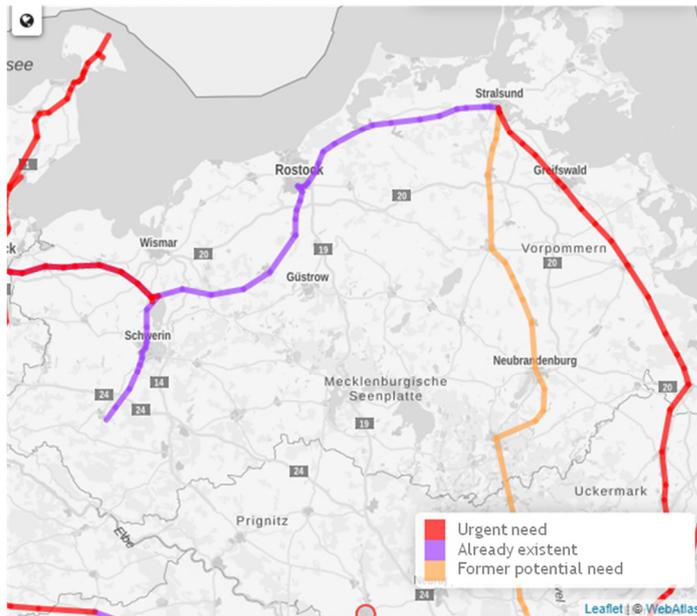
Contents of strategies and documents, completed and ongoing projects and actions → infrastructure amendments: Road (M-V)



- Termination of motorway A14 Magdeburg-Schwerin
- Federal road Mirow-Wittstock
- B96 extension Neubrandenburg-Berlin
- Fixing motorway A20
- Construction of federal road B192/B392
- Usedom infrastructure enhancement & “Karniner Bridge” re-construction
- Many small linking connections planned
- Construction of bypass roads out of the Federal Transport Infrastructure Plan 2030 to reduce future emissions

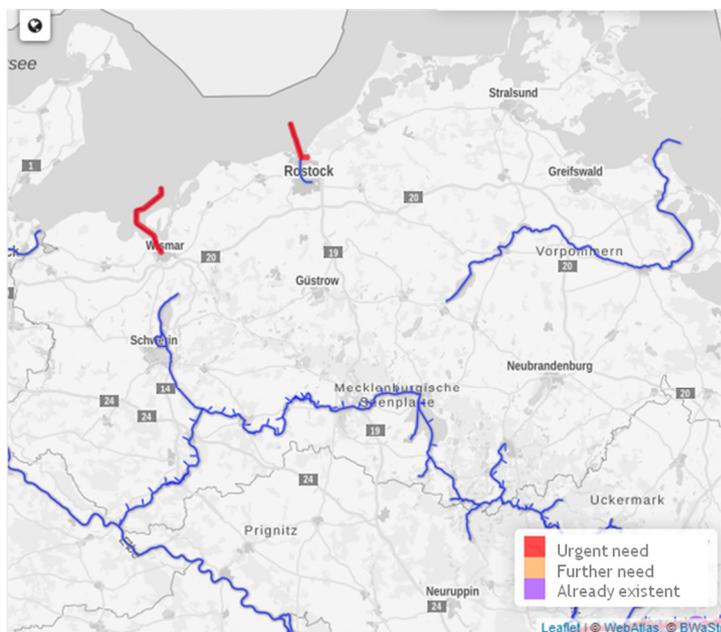


Contents of strategies and documents, completed and ongoing projects and actions → infrastructure amendments: Railways (M-V)



- Speeding up designated railway corridors:
 - Berlin-Neubrandenburg-Stralsund
 - Berlin-Pasewalk-Stralsund
 - Lübeck-Stralsund
 - Hagenow-Stralsund
- Increasing axle load capacities up to 25 t on Rostock-Berlin & Stralsund Berlin corridors
- Rail amendments to withstand FFBQ
- Hamburg-Szczecin: higher speed capacity (120 km/h) and additional siding tracks
- Re-activation of Berlin-Swinoujście railway link

Contents of strategies and documents, completed and ongoing projects and actions → infrastructure amendments: Ports (M-V)



Rostock/Wismar:

- Deepening of approach fairway to 16.5 m (ship max. draft 15 m)
- Secure rail access to established and recently renewed port sections
- Reduction of shunting times by optimising shunting routes
- Strengthening of electrification

Sassnitz: Off-shore wind park build-up

Stralsund: requires ongoing excavation to comply with designated fairway depth

In addition to the last picture, the following more general strategies have been formulated to make the port industry in Mecklenburg-Vorpommern fit for the future:

- Fairway deepening at Rostock
- Strengthening the rail infrastructure by modern intermodal terminals
- Further port extension projects must/should consider appropriate accessibility by rail



- Widening port electrification
- Environmental side projects to compensate higher operational traffic and pollution
- Employee trainings to handle heavier unit cargos, for employee competence and efficiency
- Commission of more “green”-fuelled forwarding ships/hybrid vehicles
- Sustainable transport solutions on all modes

IT plays an important role here. Not only with regard to the optimization of data exchange processes, but even on safety and security. To further improve the situation in maritime based logistic chains, the Port of Rostock has implemented a comprehensive terminal handling and control system. But this needs to be extended with interfaces to transport operators like logistic forwarders or train operating companies.

This extension shall be based on the existing infrastructure. The core activity is the development of interfaces to stakeholders to enable data exchange processes between them. These data are stored and used in the terminal system to allow tracking and tracing of transport units, intra-terminal handling processes, the documentation of risk transfer between the stakeholders and so on.

The terminal handling system is operated by the port company and connected to all stakeholder via interfaces. Even to other IT-components like scanning facilities, interface are needed and shall be developed to realize the overall aim of an IT-based port operation management.

1.2. Stakeholder mapping and management

Definition of stakeholder:

“An individual, group or organization
who may affect, be affected by,
or perceive itself to be affected by
a decision, activity or outcome of the project.”
(PMBOK Guide, 5th Edition)

The key stakeholders of the project with regard to a general development plan have been identified and grouped into different categories as shown in the picture below. These stakeholders are different companies, organizations, public authorities and institutions which are somehow connected to the project. They are at least be kept informed about the project and its results on suitable communication channels and as far as possible support or ease the implementation of the project.



	„Keep satisfied“	Key players
+	1. Freight Forwarders (especially DB Schenker, DHL, DSV, LKW Walter) 2. Railway operators 3. Terminal operators 4. Customs Agency 5. Smaller ports	1. Ports (Rostock Port, Wismar, Mukran etc.) 2. Administration on regional level 3. Federal administration of M-V 4. Key operators in the ports 5. Important companies
<i>Level of influence and power</i>	Monitoring	„Keep informed“
-	1. Research institutes 2. Universities 3. Companies in general	1. Politics (ministries on national level) 2. Chambers of commerce 3. Publicity 4. EU
	-	+
	<i>Level of commitment</i>	



1.3. SWOT analysis

SWOT analysis serves to identify key internal and external factors perceived as important to achieving project objectives as they stem from previous project activities. All relevant elements are divided into two main categories:

1. Internal factors – Strengths and Weaknesses
2. External factors – Opportunities and Threats

Analysis may view the internal factors as strengths or as weaknesses depending upon their effect on the project objectives. Factors are derived from the previous steps of territorial need assessments, such as the examination of the respective hub/node, future scenarios, stakeholder involvement and their feedback. The external factors may include stakeholders, technology, regulations and policies, cultural aspects, infrastructure, market demands.

SWOT analysis of the system of freight transport in M-V

Strengths	Weaknesses
<ol style="list-style-type: none"> 1. M-V holds a long coastal area with several sea ports (gateways to the Baltic Sea) 2. Rostock Port is one of the most competitive German Baltic Sea Port 3. Established links (A19, A20, A14 [M-V to BR], A24, E55, E251), fast connection to Scandinavia and Adria 4. Frequent trading 5. Intermodal Hubs 	<ol style="list-style-type: none"> 1. Some hinterland infrastructure issues (conditions of established infrastructure) 2. Tight approach fairways (e. g. Wismar) 3. Fairway depth 4. Last mile connections
Threats	Opportunities
<ol style="list-style-type: none"> 1. Sediment displacement 2. Enlarging container terminals/feeder in BSR 3. Intensification of direct Baltic Sea approaches by large container ship 4. Technical issues (Cyber security with ongoing digital practise) 5. Less throughputs caused by disease outbreaks or government interventions (currently: Corona virus) 	<ol style="list-style-type: none"> 1. Higher throughputs with enhanced hinterland infrastructure 2. Connecting existing infrastructure 3. Extension/intensification of current trade routes 4. OEM corridor 5. Access to European funds for the strengthening of port and inland port infrastructure 6. Increase in handling efficiency

Source: online.visual-paradigm.com