

2040 PORT DEVELOPMENT PLAN

SUMMARY

Quality, Sustainability,
Value Creation



Hamburg

Ministry of Economy
and Innovation

The background is a solid dark blue. It is decorated with several squares of different sizes and colors. In the top-left corner, there is a small red square. Below it, to the right, is a larger red square. In the top-right corner, there is another small red square. In the bottom-left area, there is a red square above an orange square. In the bottom-right area, there is a red square above an orange square, and to the right of that, another orange square.

2040 Port of
Innovation:
Quality,
Sustainability,
Value Creation

The path to the 2040 Port of Innovation

As a pan-European hub with strong links to international maritime trade routes, the Port of Hamburg secures a large number of jobs and makes a significant contribution to value creation – at regional, national and European level. Across Germany, around 607,000 jobs, some 51 billion euros of gross value added and 2.57 billion euros in tax revenue are directly or indirectly attributable to the Port of Hamburg.* Moreover, having reliable sea-ports and resilient supply chains is especially crucial in times of crisis. That was recently made very clear by the Covid-19 pandemic and the war in Ukraine, which occurred while the Port Development Plan was being prepared.

** Figures for the year 2019; source: Institute of Shipping Economics and Logistics (ISL), 2021.*

Keys to the Port of Hamburg's success include its exceptional hinterland connections and diversified business landscape. The port also benefits from being at the centre of an innovative, economically vibrant metropolitan region. Its unique inland location allows environmentally friendly, resource-efficient sea transport to the heart of one of Europe's main import regions. Another point that sets Hamburg apart is the high proportion of rail transport using the port railway network. At a length of almost 300 km, this network guarantees fast, environmentally efficient and cost-effective logistics.



Global megatrends such as climate change, digitalisation and the transformation of work are presenting ports with new challenges. So too are sector-specific developments such as changes in freight flows, growing ship sizes and intensifying competition. To maintain its success and vital economic function, in future the Port of Hamburg will need to flexibly adapt to new circumstances and requirements. It must remain fit for purpose and attractive to its customers. It must implement new business models and technologies. And it must embrace digital technology and achieve climate neutrality. This transformation will open up new opportunities for the port, the city and the entire metropolitan region.

The Port Development Plan describes how this can and will be achieved. The plan underscores Hamburg's clear commitment to its maritime future and the modernisation of the port. It sets out the guiding principles, key action areas and goals that the city and port must focus on in order to harness and expand the Port of Hamburg's potential in the period up to 2040. The vision 2040 Port of Innovation: Quality, Sustainability, Value Creation expresses a resolute ambition to open up new business segments and to maintain Hamburg's position in the European market as a central maritime hub and multipurpose port.

Cargo handling, cruise shipping and high-performance logistics will remain core segments for the Port of Hamburg. But they will be augmented by a broad, climate-neutral industrial base. The port sector's sustainable value creation makes it the economic engine for the entire region. Thanks to its customer-centric commercial development policy, the Port of Hamburg offers ideal development opportunities for established companies, for innovative start-ups and for the industries of tomorrow. Forward-looking infrastructure management and a resolute focus on digitalisation will secure the port's long-term competitiveness. Reflecting its special responsibility as a port based right in the heart of a city, the Port of Hamburg is committed to climate-neutral, resource-efficient operations and to creating attractive jobs for Hamburg and the metropolitan region.

Building on this vision, the Port Development Plan is guided by four principles:

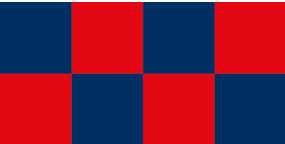
- 1. Value creation and quality**
- 2. Sustainability and climate action**
- 3. Innovation**
- 4. Customer focus and competitiveness**



The port’s goals and development opportunities for the coming years, and the measures that will be taken to implement the port strategy, are set out in seven action areas.

Strategic action areas, goals and measures →

Megatrends and opportunities



Digitalisation

Key enablers



Infrastructure maintenance and expansion



Climate action, circular economy and environmental sustainability



Commercial development and land use strategy



Transformation of work

A port in the heart of a city



City and port



E-commerce as a new business segment

A Digitalisation

The expansion of digital and autonomous systems is making the Port of Hamburg more efficient and climate-friendly, strengthening its ability to compete with other European ports and opening up new value creation potential.

Further digitalisation will allow optimised logistics management, comprehensive data-sharing and closer links between stakeholders. This will help to lay the foundations for new growth. A strategic commercial development and cluster policy will allow the port to participate in this economic dynamism and become a cradle of innovation in its own right.

A key role will be played in the digital transformation process by the ongoing expansion of communications infrastructure, with a particular focus on uninterrupted next-generation mobile coverage and a high-performance fibre-optic network. Building information modelling (BIM) and sensor technology will help support planning and predictive maintenance of the port's physical infrastructure. BIM can be used to compile relevant, up-to-the-minute data into digital asset twins over the port infrastructure's entire life cycle. These individual twins can then be integrated into an overarching Port Digital Twin.

Thanks to institutions such as the Hamburg Port Authority's (HPA) Nautical Center and the Hamburg Vessel Coordination Center (HVCC), Hamburg is one of the world's leading ports when it comes to digitalisation. To enable efficient collaboration at points where different port processes intersect, stakeholders will in future be connected by an ecosystem of new and existing platforms. At the core of this ecosystem will be a network of networks that supports further digital collaboration between privately organised logistics and public infrastructure/traffic management.

Cyberattacks and their effects are one of the greatest threats to companies and infrastructure. To make the system as a whole more resilient to such attacks, public-sector agencies and relevant port stakeholders are working together on a collective defence strategy.

The Port of Hamburg offers ideal conditions to build a world-leading hub for digital maritime logistics. One key foundation will be the homePORT innovation campus, which provides the maritime industry with a real-world laboratory for developing and testing innovative technologies. The national pilot project Border One Stop Shop (BOSS) is also working to further increase digital collaboration between the authorities responsible for goods import control at the Port of Hamburg.



B Climate action, circular economy and environmental sustainability

Decarbonisation, renewable energy, circular business models and conservation of vital natural resources will allow the Port of Hamburg to combine economic success with carbon neutrality and environmental sustainability.

Carbon-neutral cargo handling at the terminals, low-emission transport systems in the port and a high proportion of hinterland transport by rail will significantly reduce the climate impact of freight traffic. This will also allow the port to cater to growing demand for climate-neutral products and services. Furthermore, there will be various measures to help embed hydrogen technology in north Germany's industrial policy. Other steps to boost Hamburg's profile as an environmentally friendly, climate-neutral, future-ready port will include factoring the port's environmental importance into planning; attracting sustainable companies to the port; and supporting existing industrial partners to make the transition to circular business models.

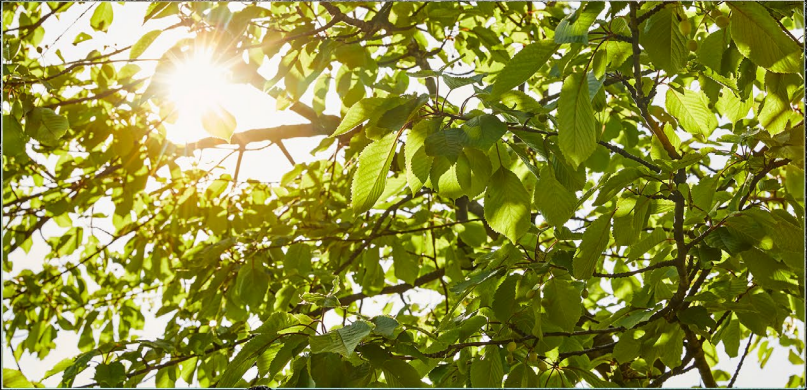
The Port of Hamburg is significantly reducing emissions of greenhouse gases and other pollutants from cargo handling and transport, with the goal of making its operations net zero carbon by 2040. To monitor and manage this process, standardised carbon reporting will be introduced for the port based on the methodology set out in the Hamburg Climate Plan. One key sustainability measure will be the transition to new energy sources. Greenhouse gas emissions will be significantly reduced by providing renewable shore power for container, inland and cruise ships. Another key goal is to further increase the modal share of eco-friendly rail and inland waterway transport.



The Port of Hamburg will be developed into a leading hydrogen hub. It offers potential unrivalled anywhere else in Germany to consolidate and integrate the hydrogen value chain and hydrogen logistics. One key project at the port will be the construction of a large electrolysis plant with an initial capacity of 100 MW on the former site of the decommissioned Moorburg power station.

The circular economy also offers great potential for value creation and sustainability; an analysis of this potential will be undertaken with the involvement of all relevant companies and stakeholders. Measures are also planned to foster a circular, resource-sensitive planning and construction regime.

The port’s water and land areas also make an important contribution to biodiversity. This contribution will be further enhanced in line with the Port Development Plan’s guiding principles: for example, by extending conservation measures and minimising soil sealing and light/pollutant emissions.



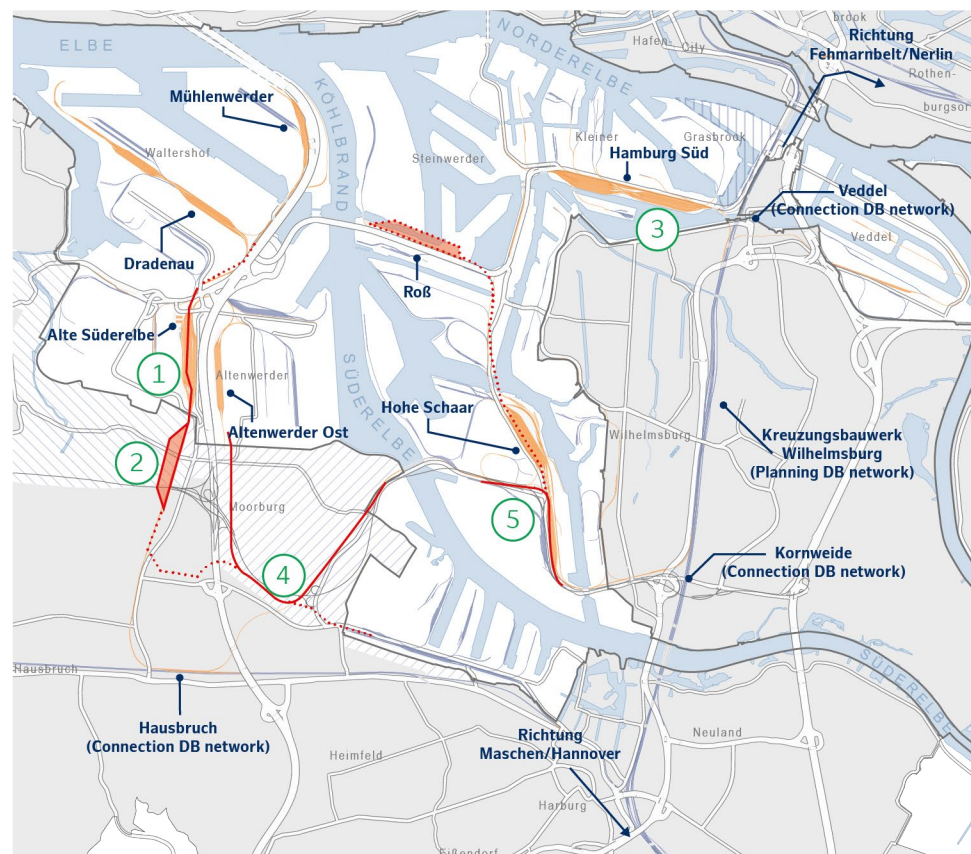
C Infrastructure maintenance and expansion

Fit-for-purpose infrastructure is essential for efficient, competitive and sustainable port operations. The infrastructure will be expanded in line with demand and used in a resource-efficient manner.

Infrastructure needs to be adapted to changing customer requirements and rising freight volumes. Digital traffic management will improve the performance of existing systems. In order to reduce carbon emissions from freight transport, the port railway and rail connections to the hinterland will be further strengthened and expanded.

The adjustment of the river Elbe fairway, which was completed in 2022, is crucial to maintaining the Port of Hamburg's functionality as a multipurpose port and ensuring it can still be accessed by large ships. Another important measure is the enlargement of the access channel to the container terminals at Parkhafen and Waltershofer Hafen ("Western expansion" project). Berths, waiting areas and quay walls will also be extended and maintained in the coming years.

Effective, adaptable sediment management is likewise vital to ensure reliable seaward access and protect biodiversity in the tidal section of the Elbe. That will require suitable disposal sites for dredged material with adequate capacity to be maintained or established over the long term at the mouth of the Elbe estuary and in the German Bight. These measures must give high priority to environmental factors and water/marine conservation.



Planned measures for the port railway

Priority expansion:

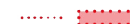


Network-wide measures

- 1 Alte Süderelbe west bypass
- 2 New Alte Süderelbe Süd sidings
- 3 Refurbishment of Hamburg Süd station section
- 4 Altenwerder southern rail connection
- 5 Hohe Schaar two-track expansion

- Expansion for 740 m trains
- ETCS implementation

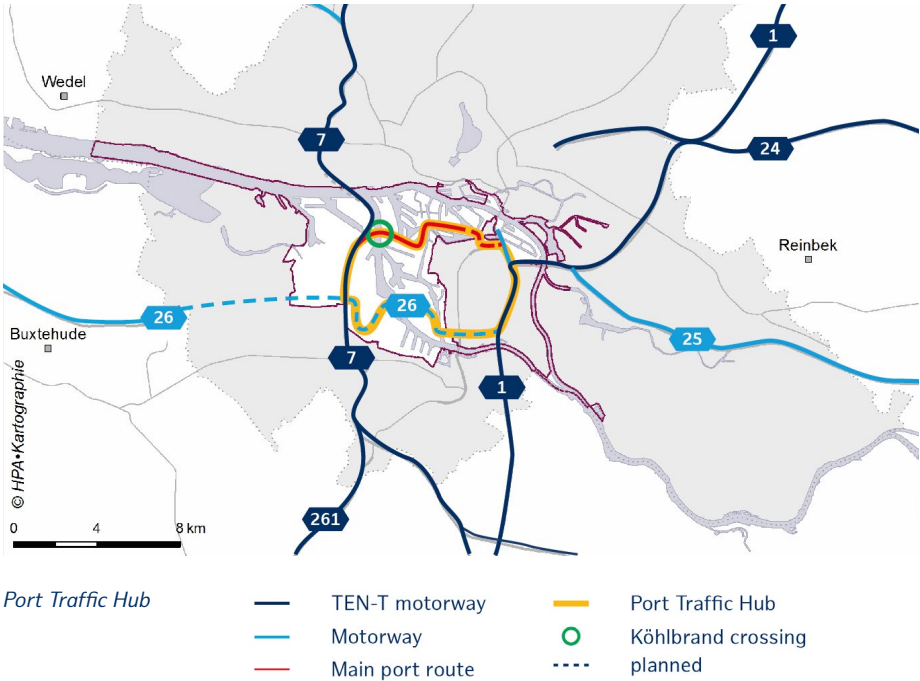
Strategic expansion:



- HPA tracks
- Other tracks:
In the port = private loading points
- Outside the port and Bf Hamburg
Unterelbe Seehafen = DB network

One particular focus will be the expansion of the port railway in order to improve the port's capacity and facilitate its transition to climate-friendly transport. To promote the transport of freight by rail, connections to the port rail network will be prioritised in development projects and incentives will be put in place to shift intra-port and hinterland transport from road to rail. The HPA has developed an extensive expansion programme to strengthen the port railway network and make it more attractive. The programme comprises a number of measures that will be rolled out in phases.

To keep the port functional and competitive, the road network will also be maintained and expanded to ensure it is fit for purpose. In the coming years, the existing bridge over the Köhlbrand will be replaced by a suitable crossing in order to secure the long-term capacity and functionality of the vital east–west axis. The federal government’s planned construction of the A 26 (East) motorway will also further improve the port’s connection to the national road network. Strong hinterland connections are likewise key to the port’s competitiveness. The Hamburg Senate is therefore lobbying both the federal government and EU for an expansion of transport infrastructure (especially rail infrastructure) to meet demand.



Another goal is to develop Hamburg into one of Europe’s most diverse and sustainable cruise ports. Further improvements will be made to the necessary infrastructure, including increasing terminal capacities to meet demand. The focus will be on constructing the new Cruise Center HafenCity and evaluating options for expanding the Cruise Center Steinwerder.

D Commercial development and land use strategy

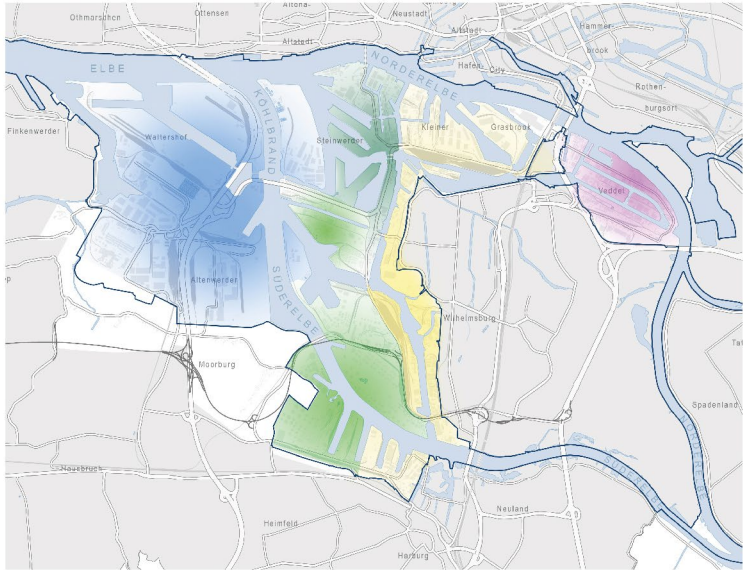
Strengthening the multipurpose port through active land management that ensures a future-focused industry mix, more efficient use of land and increased value creation.

The land use strategy is key for shaping future-oriented port development. The aim is to retain successful companies in the port, to actively support structural change and to increase value creation. Hamburg's multipurpose port will be strengthened and further developed by attracting new companies and industries. When allocating land, increased emphasis will be placed on the relevance to port operation as well as the guiding principles of value creation, sustainability and competitiveness.

The central port area is a key development priority. The area will be transformed to enable attractive new developments, especially in the Steinwerder Süd area. The Waltershof area, which is focused on container handling, will likewise be developed in the coming years to increase its capacity. The "Western expansion" project, for example, offers potential to expand the existing terminal area at the Predöhlkai and install two new berths suitable for large modern container ships. The Port of Hamburg will also seek to position itself as a centre for sustainable energy: companies from the sustainable energy sector (storage, processing, suppliers, service providers, etc.) will be prioritised for developments on former fuel depots. The port expansion area Moorburg also offers further potential capacity.

Port areas that are suitable for multimodal transport connections will be strategically developed; the option to make increased use of rail and inland waterways could significantly enhance these areas’ value in terms of logistics and sustainability.

Given the high demand, it will also be necessary to make more efficient use of the scarce space that is already available, primarily through multistorey developments. To promote synergies and networking, companies from the same sector or with similar (infrastructure) requirements will be concentrated into geographic zones defined by certain uses. This will be achieved through a long-term transformation of land that is or becomes vacant.



Map of future hubs in the Port of Hamburg.

Future hubs 2040

- | | |
|---|---|
| <div><div></div><div>Deep Sea Hub</div><div><i>Accessible for large vessels; high-performance, trimodal infrastructure that can be used for heavy goods handling; focus on container handling and primary industries.</i></div></div> | <div><div></div><div>Multipurpose Hub</div><div><i>High-quality, trimodal plots; focus on non-containerised cargo; will be directly linked to the motorway.</i></div></div> |
| <div><div></div><div>Maritime Tech and Innovation Hub</div><div><i>High value creation; port zone closely interlinked with the city.</i></div></div> | <div><div></div><div>Port and City Services Hub</div><div><i>Plots close to the city for logistics and port-related technical services/skilled trades.</i></div></div> |
| <div><div></div><div>Sustainable Energy Hub</div><div><i>Large-scale industrial and cargo handling companies; sufficient distance from residential areas; highly integrated into energy grid/pipeline network.</i></div></div> | |

E Transformation of work

The Port of Hamburg will effectively manage the transition to a new world of work.

Secure jobs, decent working conditions and future-focused training will make it possible to retain existing employees and attract new ones.

Committed, qualified workers are crucial to the port's long-term functioning. But their training needs are changing due to the transformation of the world of work, including specific trends in maritime logistics and port-related industries. Building on existing networks and on local and global knowledge transfer, education/training programmes will be developed and updated to meet demand, in collaboration with social partners. Another goal is to invest in making the port a more attractive place to work, so that it can compete for top talent.

Developing and implementing effective measures to support the transformation of work in the port will require continuous dialogue and collaboration by all relevant stakeholders and social partners. One overarching measure to help achieve this will be to establish a port working group in the Hamburg network for education and employment (ABBH/FKN).



Megatrends and developments such as sustainability, the energy transition, digitalisation and automation are transforming jobs and the associated training needs. Future skills/skilled labour needs will be identified and compared with the skills and qualifications of the existing workforce. Based on this analysis, education and training programmes will be updated accordingly. A first important step towards this goal is the study PortSkill 4.0, which is analysing the impact of the digital transformation on port-related careers and running pilot studies on new careers and learning methods.

Perceptions of the port as a place to work and train will also be analysed, as will the younger generation’s expectations of their workplace and work environment. Based on this analysis, a promotional campaign aimed at skilled workers will be developed, which will seek to increase awareness of port companies/careers and improve the Port of Hamburg’s image as an attractive place to work.



F E-commerce as a new business segment

The Port of Hamburg is a central e-commerce hub and is developing innovative logistics solutions for this segment.



E-commerce is growing strongly and permanently establishing itself alongside traditional brick-and-mortar retail. As central logistics hubs, seaports are ideal places to organise the highly complex supply chains in this sector more efficiently and sustainably. A regional focus will be established by attracting relevant businesses, building links between existing stakeholders and supporting applied research. New delivery models will also be developed and tested, with the port and city serving as a real-world laboratory.

A study will examine potential for attracting further e-commerce logistics companies, possible land options and the establishment of an e-commerce excellence centre. These measures will build on existing initiatives, such as homePORT and Next Commerce Accelerator.




G City and port

The port has long been both a driver of economic prosperity in Hamburg and a symbol of the city that its residents positively identify with.

One thing that sets the Port of Hamburg apart is its central location in the heart of the city. Being a good neighbour requires the port to consider the interests of all relevant groups and stakeholders, without neglecting its own needs. It is important to be mindful of the impact of port traffic and emissions on local residents' quality of life. At the same time, port businesses need reliable infrastructure and conditions for their operations and logistics.

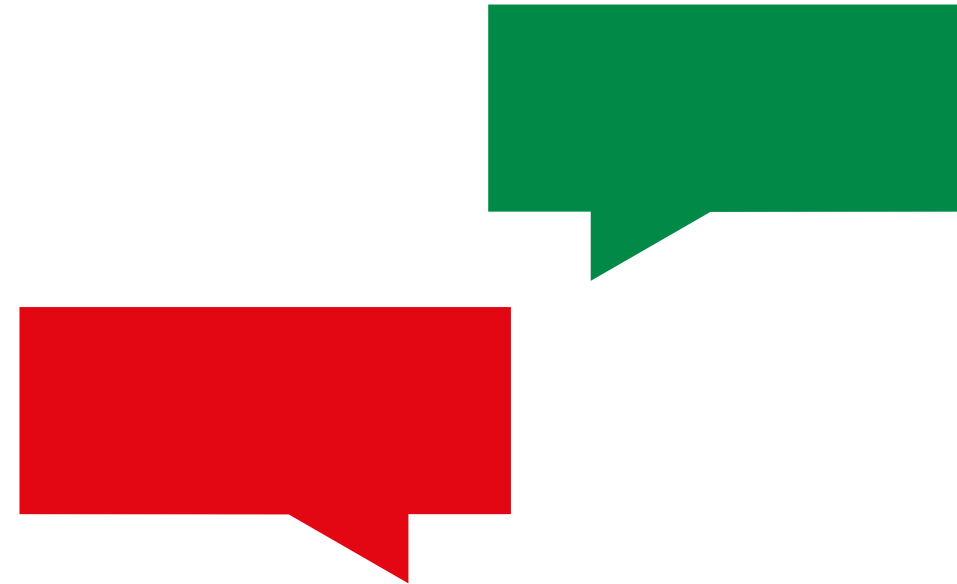
One particularly important project is the development of the new Grasbrook district near the port, which alongside new residential areas will also include the Hafentorquartier: a forward-looking commercial quarter for innovative, value-creating companies with a connection to the port.

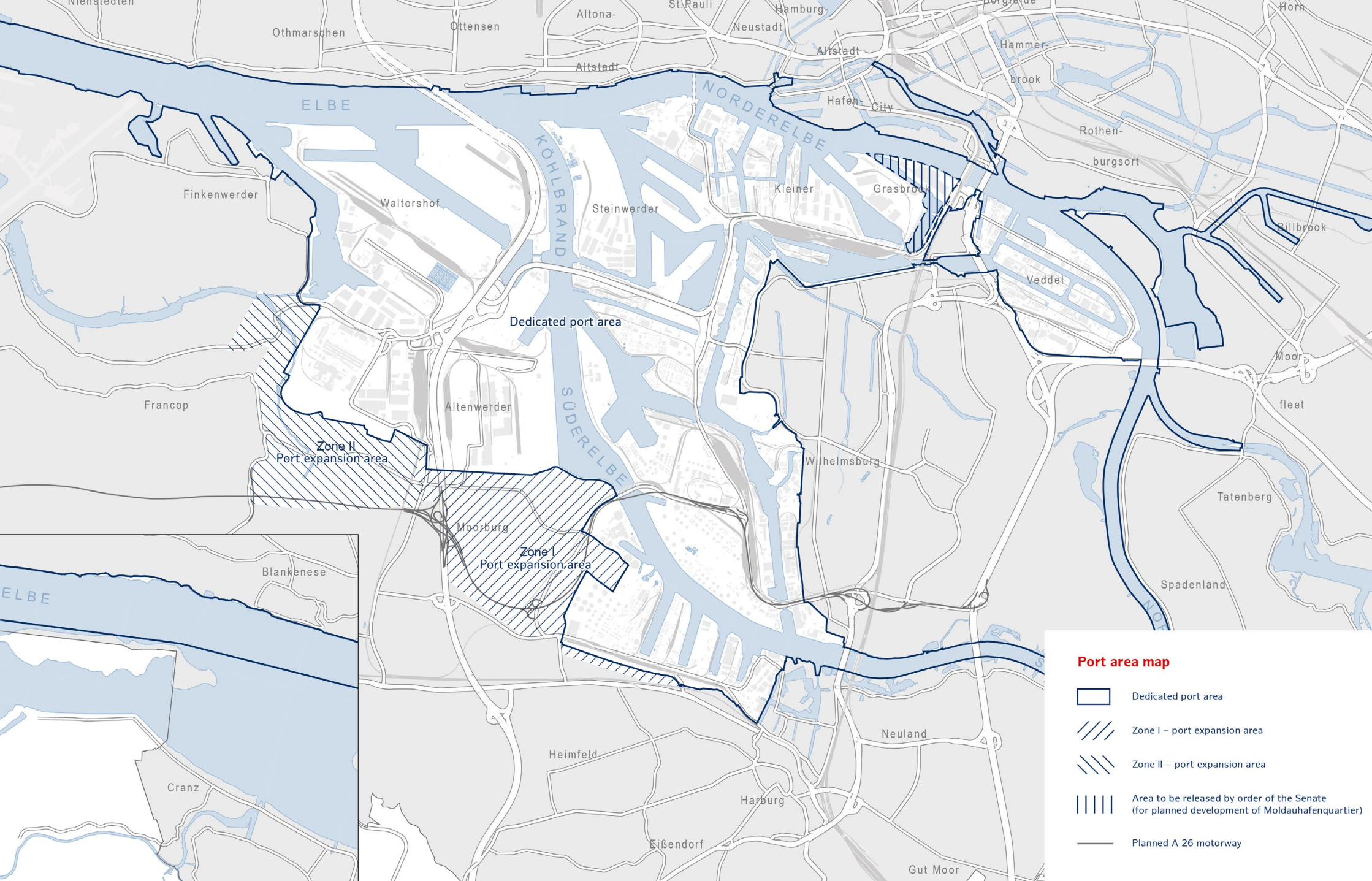
The port also offers a wealth of interesting places, viewpoints and experiences. It is important to improve access to and between these attractions for visitors, residents and port workers, whether they are travelling on foot or by bicycle, public transport or private motorised vehicle.



Building on strengths
and harnessing
development
potential – the path
to the 2040 Port of
Innovation

The Port Development Plan underscores the Senate's commitment to Hamburg's maritime future and the steps necessary to make that future a reality. This plan will involve many changes at the port (not for the first time in its history). Its current strengths will be expanded, while global megatrends, such as digitalisation, sustainability, the circular economy, the transformation of work and e-commerce, will be used as opportunities to transform the port and prepare it for the future. The aim is to strengthen Hamburg as a multipurpose port and leading maritime hub. The Port of Hamburg will continue to guarantee security of supply and prosperity in the metropolitan region, in Germany and in connected European regions. To that end, infrastructure and land will be used efficiently and developed in line with requirements. Development of the port will be guided by the principles of value creation and quality; sustainability and climate action; innovation; and customer focus and competitiveness. The Hamburg Senate will make the port fit for the future, following the vision **2040 Port of Innovation: Quality, Sustainability, Value Creation.**





Port area map


-  Dedicated port area
-  Zone I – port expansion area
-  Zone II – port expansion area
-  Area to be released by order of the Senate (for planned development of Moldauhafenquartier)
-  Planned A 26 motorway

Image index

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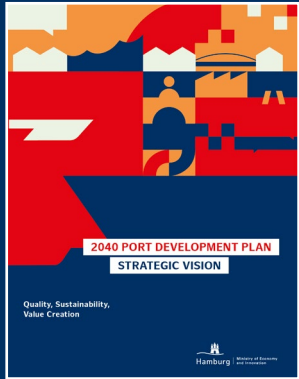
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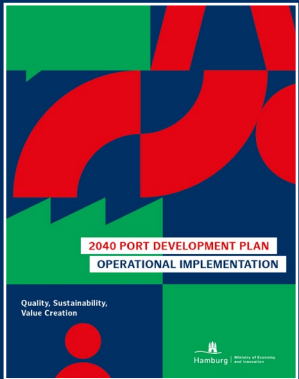
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The 2040 Port Development Plan is divided into two parts:



2040 Port Development Plan –
Strategic Vision

Part 1 (Strategic Vision) sets out
the overarching goals and priorities
for port policy.



2040 Port Development Plan –
Operational Implementation

Part 2 (Operational Implementation)
describes key measures for achieving
the strategic goals.

The full 2040 Port Development Plan can be
downloaded at hafen2040.hamburg.



