



# Waterways Directorate of the Czech Republic



**Labe/Elbe – cross-border river with challenges in low water, flooding and all uses**

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Leipzig 2.6.2022

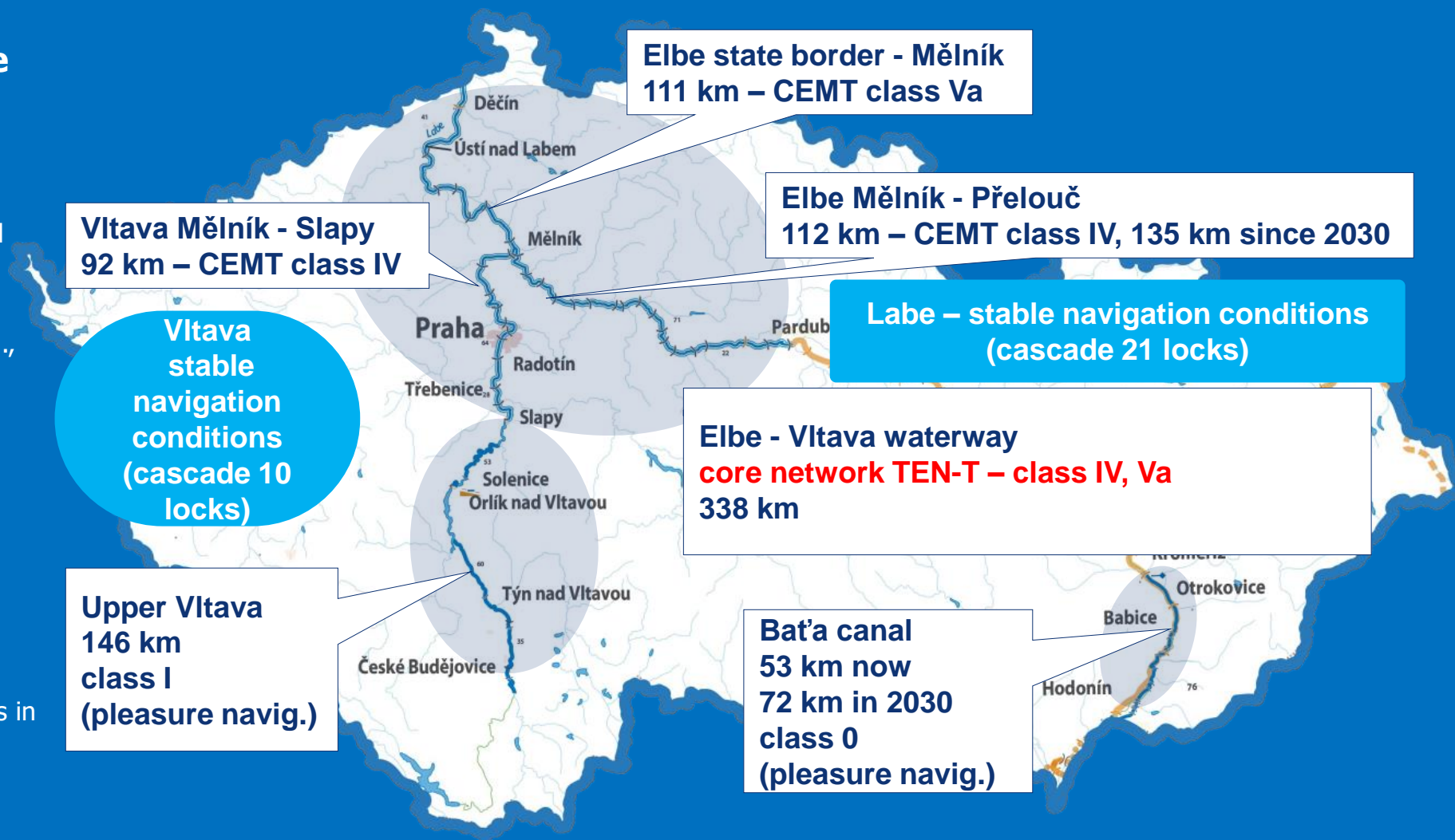
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# Inland waterways network in the Czech Republic

## Waterways Directorate of the Czech Republic

- established in 1998 by the Ministry of Transport of the Czech Republic
- State investor organisation (organisational unit of the state)
- development of transport-significant waterways according to Act 114/1995 Coll., on inland navigation
- construction, development and modernisation of waterways
- management and maintenance of the waterway components
- exercising state ownership rights to newly established waterway components
- operating public ports
- administration of the Czech port territories in Hamburg



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# Shot history of the navigability on the Elbe-Vltava rivers

year	event	lock chambers built
1841	cruise of the steamer Bohemia (the first made in the Czech Republic) on the line from Obříství to Dresden (there and back in 3 days)	
1869	Commission for canalization of the Vltava and Elbe Rivers in the Czech Republic was established	
1897	the 1st weir and lock on the Elbe - Vltava rivers was built in Roztoky - still in operation, without modernization meets the present requirements of the class IV AGN	
1901	Waterway Act No. 66 (on the construction of waterways and on the modification of rivers),	
1903	record volume of international transport on the Elbe - 4 million tons, Usti nad Labem the most important port of Austro-Hungarian Monarchy	
1898 - 1905	the lower Vltava to Mělník was navigated by canalization	5
1907 - 1919	canalization of the Elbe from Mělník to Lovosice (lock chambers Dolní Beřkovice, Štětí, Roudnice, Lovosice)	4
1919 - 1930	lock chambers Nymburk, Poděbrady, Kolín, Přelouč	4
1931 - 1944	lock chambers Střekov, Lobkovice, Kostelec, Brandýs, Čelákovice, Lysá, Kostomlátky, Srnojedy, Hradištko, Klavary	10
1945 - 1990	lock chambers Velký Osek, Veletov, Týnec, Pardubice, Obříství	5
after 1990	modernization of lock chambers only, no new weir and locks	
After the flood 2002	extensive construction of flood-protective quays for vessels	<i>Po vodě - ekologicky, levně a v pohodě</i>

## Eastern and East Mediterranean TEN-T core corridor



IV: Vla; Vlb; Vlc: Planned/under  
 Va/Vb: VII: constr.:  
 Urban node: ○

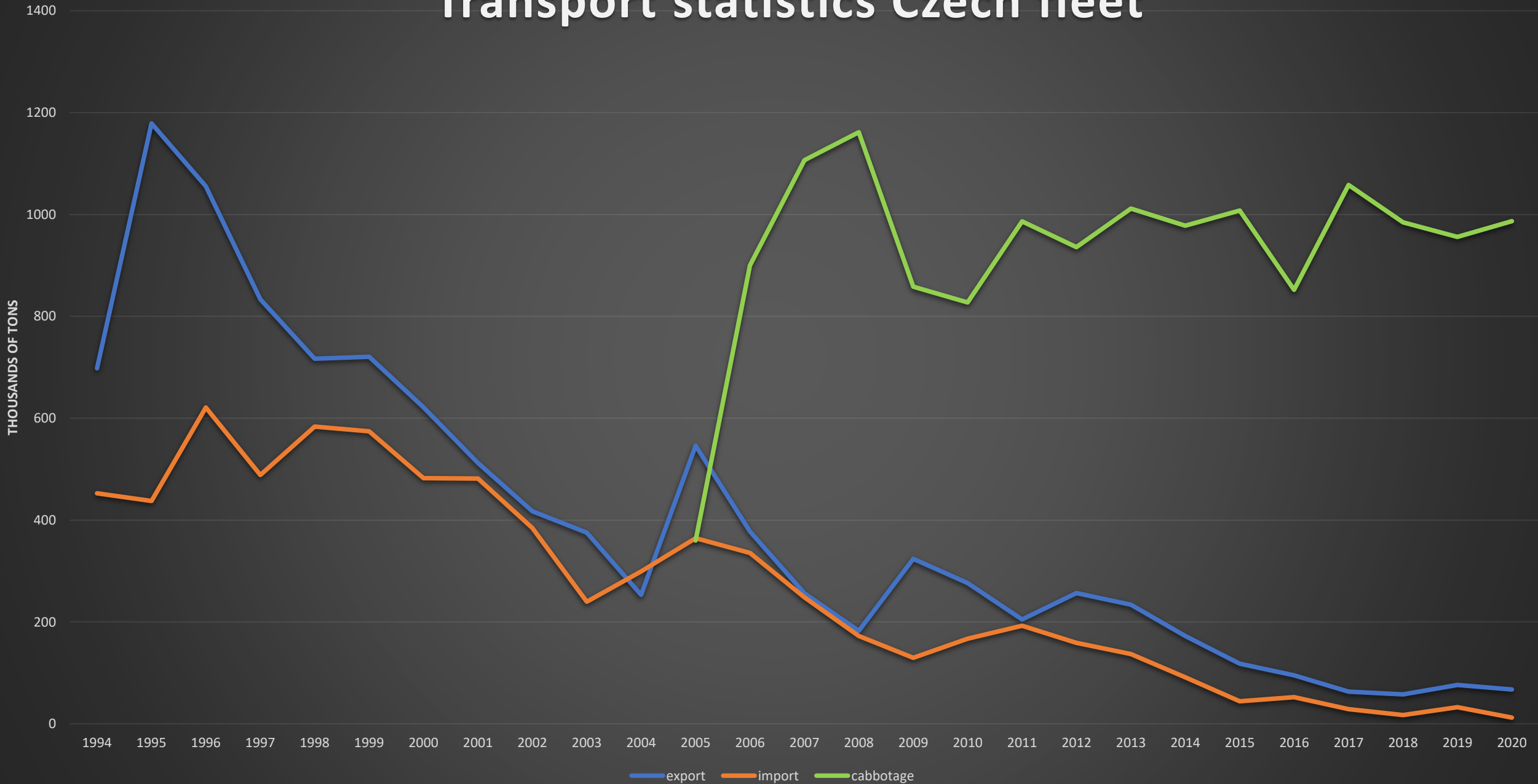
### Strategic bottlenecks of the whole corridor:

- unstable water levels on the river Elbe, as a cross-border problem in the Czech Republic and Germany.

### Other bottlenecks:

- navigability to the Pardubice agglomeration
- upgrade of the Vltava to Prague – fairway depth, underpass clearance under the bridges,
- insufficient reliability of nav. locks,
- incomplete implementation of RIS and cross-border interconnection with Germany.

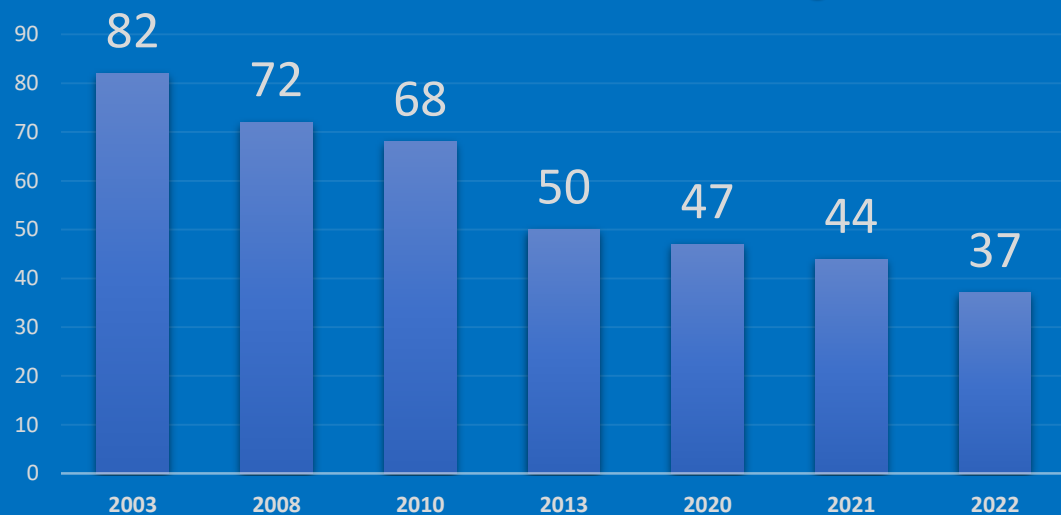
# Transport statistics Czech fleet





# Development of the cargo fleet under the Czech flag for international transport

vessels under the Czech flag

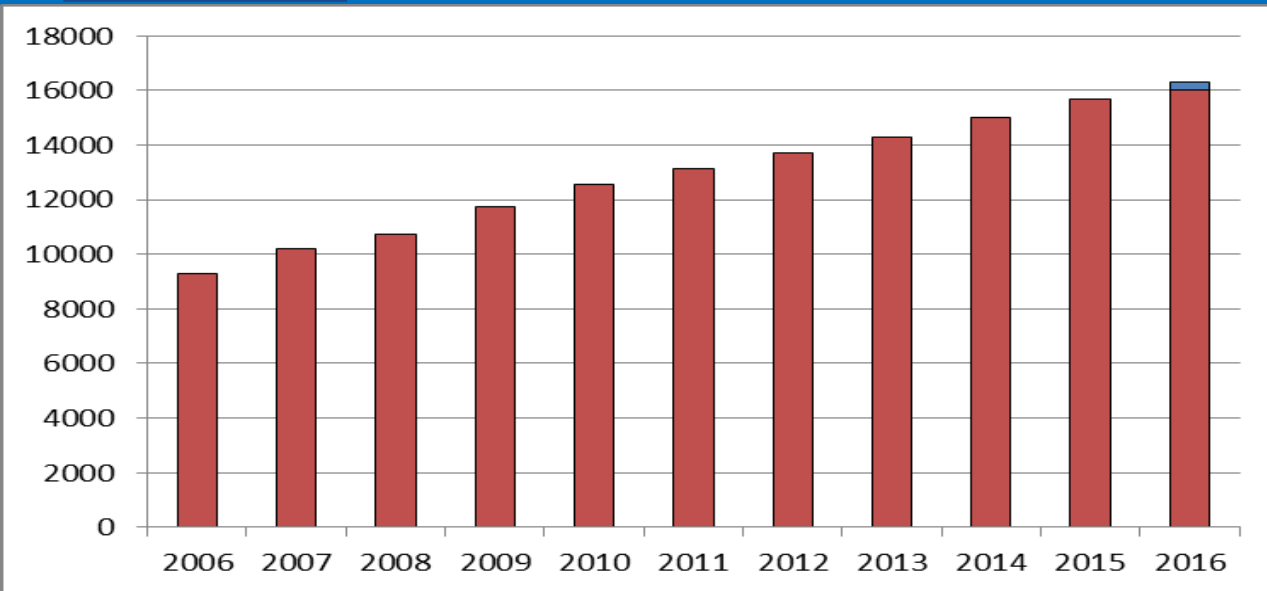


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# Development of the pleasure boats and passenger fleet registered in the Czech Republic – increase by 80 % in 10 years

years



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## Weir and lock Děčín



### Scope of the project:

- moving weir on the river km 737,12
- Lock chamber 200x24 m
- Small power plant
- concentration dikes and dredging adjustments on the section state border – the new weir
- revitalization and compensation measures

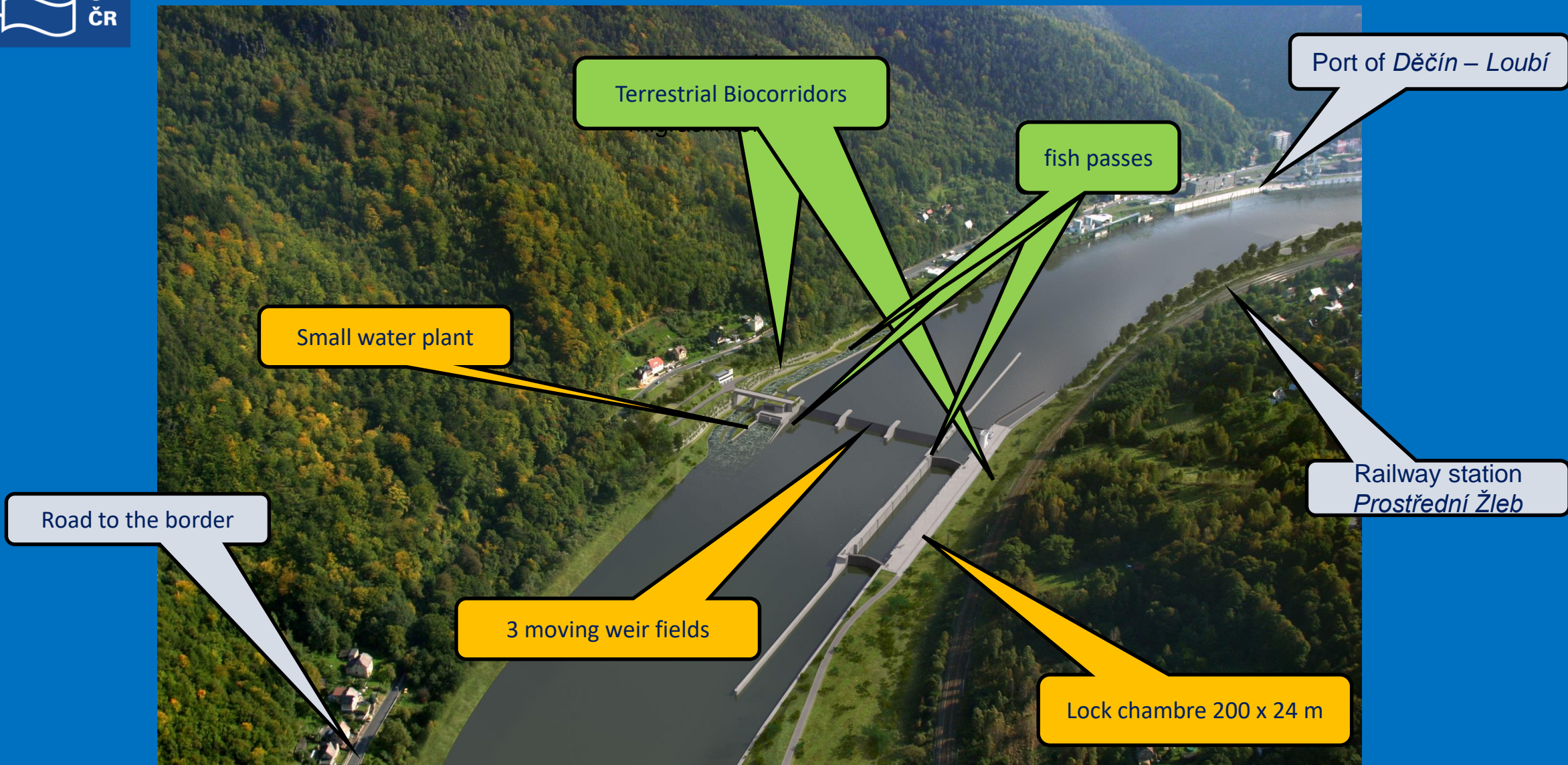


**Other  
considered  
variants of the  
navigability  
solution  
instead of the  
weir and lock  
Decin**

- Flat river vessels: economically unrealistic
- Regulatory adjustments only: do not ensure the sufficient draft
- regulatory adjustments with one-way sections: danger of the deepening the river bottom, degradation of the waterway
- temporary increasing the water flow from the upstream lakes on the Elbe, Vltava and Ohře rivers: insufficient capacity for navigation purposes, restrictions on other functions

**according to realized researches and foreign assessments  
there is no real solution without a transverse structure  
(ČVUT 2015, 1994, Rogge Marine Consulting 1996)**

# Weir and lock Děčín – final solution



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## A fish pass close to nature

- length 450 m
- width 15 m
- flow 10 m<sup>3</sup>/s
- slope between pools 0,1 - 0,2 m
- depth in the rest zone: 1,2 - 1,6 m
- depth on partitions: 0,3 - 0,5 m
- speed in the rest zone: 0,3 - 1,0 m/s
- speed at the partitions: 1,3 - 1,9 m/s

design according to the physical model  
by the Water management research  
institute TGM in scale 1:20

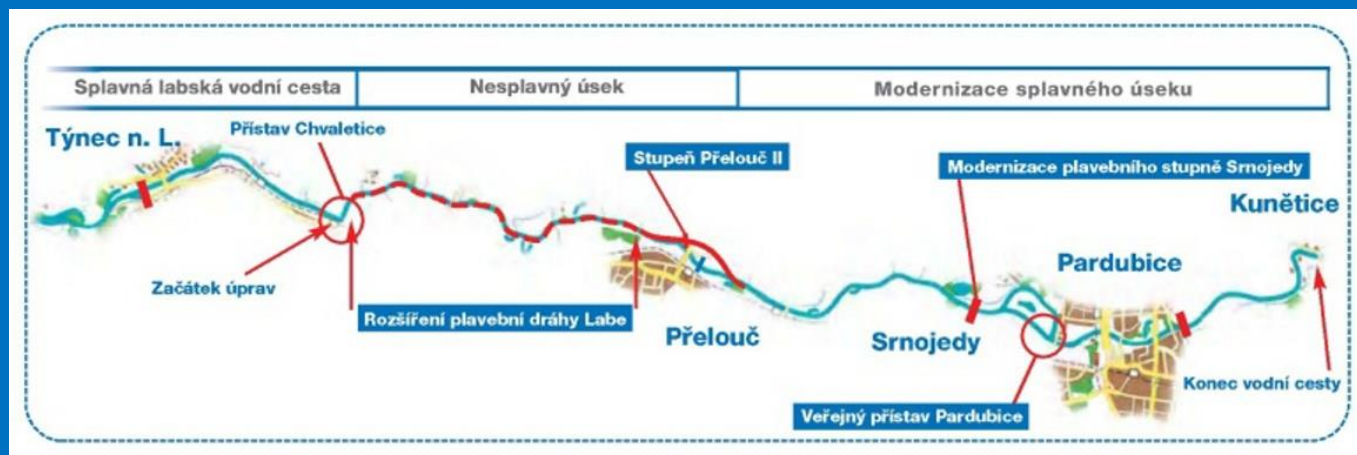




# Side effects of the weir and lock Decin

- reducing drying up of the banks
- stabilizing the groundwater level
- producing electricity for all the households in the city of Decin (50 000 inhabitants)
- increased protection of the population and their property against floods
- stabilized level in the inner city of the city will prevent overgrowth of the riverbed, illegal landfills and development in the floodplain
- slight reduction in the peak levels of floods in the area above the weir due to reduced roughness in the non-growing riverbed

# Navigating the Elbe up to Pardubice



- Stabilization of the fairway in the port of Chvaletice  
Čekací stání v přístavu Chvaletice
- Modification of the Elbe riverbed in the section - Přelouč - completed
- Lateral canal Přelouč II
- Road bridge over the Elbe between Valy and Mělice - completed
- Modernization of the Srnojedy lock chamber
- Deepening the fairway in the section Přelouč – Pardubice
- Public port of Pardubice



# Increasing the parameters of the Vltava waterway



Modification of Hořín navigation lock



Securing bridge heights

Increase draught

Modernization of Štvanice nav. lock



Spolufinancováno Nástrojem Evropské unie pro propojení Evropy

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# River Information Services on Elbe corridor RIS COMEX project – largest RIS project in EU



- International project of 13 countries, total project costs 26,5 mil. €
- Extension and improvement of RIS services for users on entire waterway corridors including Elbe and Vltava
- Implementation 1/2017 – 6/2022, **development in finalisation**
- Full coverage of information services on navigable Elbe from Přelouč to Hamburg



The screenshot displays the RIS COMEX web portal. At the top, there is a search bar and navigation tabs for 'Aktueel', 'Waterweg', 'Diensten', 'Over RIS', and 'Mijn RIS'. The main content area is divided into several sections:

- AKTUÁLNÍ SITUACE**: A map of Europe showing various navigation points marked with icons and numbers.
- PLÁNOVAČ PLOVBY**: A section for voyage planning, including a search bar, a dropdown menu for 'Z', and a button 'Vypočítat plavbu'.
- NOVINKY**: A section for news, featuring a 'New backgroundmap' announcement.
- NOVÉ ZPRÁVY VŮDCŮM PLOVIDEL**: A section for news for vessel masters, featuring two news items with dates and titles.
- HYDROMETEO INFORMACE**: A section for hydro-meteorological information, featuring a photo of a weather station.

- Information in 11 languages on the single web portal
- Actual navigation conditions, digital navigation charts, operation hours and status of objects (locks, bridges, berths)
- Intelligent voyage planner with actual navigation conditions (water levels, limitations etc.)
- Actual vessel position, tracking of vessels and loaded cargo
- Full use of the harmonised board equipment (AIS, ECDIS) – mandatory carriage on the entire Elbe

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# Work schedule

## Weir and lock Děčín

- 2023/2026 - EIA assessment and determination of compensatory measures
- 2026/2028 - project documentation for the building permission,
- 2028/2030 – building permission,
- 2030/2032 - realization.

## Navigating the Elbe to Pardubice

- 2023 - SEA assessment
- 2025/2026 - EIA assessment
- 2026/2027 - project documentation for the building permission,
- 2028/2029 - building permission,
- 2029 - 2031 - realization.





# THANK YOU FOR YOUR ATTENTION

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