

ZONE STUDY IMPACT OF IMPROVED TECHNICAL PARAMETERS OF THE ELBE WATER WAY IN CENTRAL BOHEMIA REGION ON SUSTAINABLE DEVELOPMENT

Středočeský kraj

Client

Central Bohemia Region, Zborovská 11, 111 50 Prague 5

Contractor

Atelier T-plan, s.r.o., Na Šachtě 497/9, 170 00 Prague 7

PRINCIPAL FUNCTIONS OF THE ELBE RIVER

■ Natural

- ✓ Landscape forming element
- ✓ Localities of highly valuable habitats related to surface and shallow groundwater regimes,
- ✓ Occurrence of strictly protected plant and animal species (EVL Natura 2000).

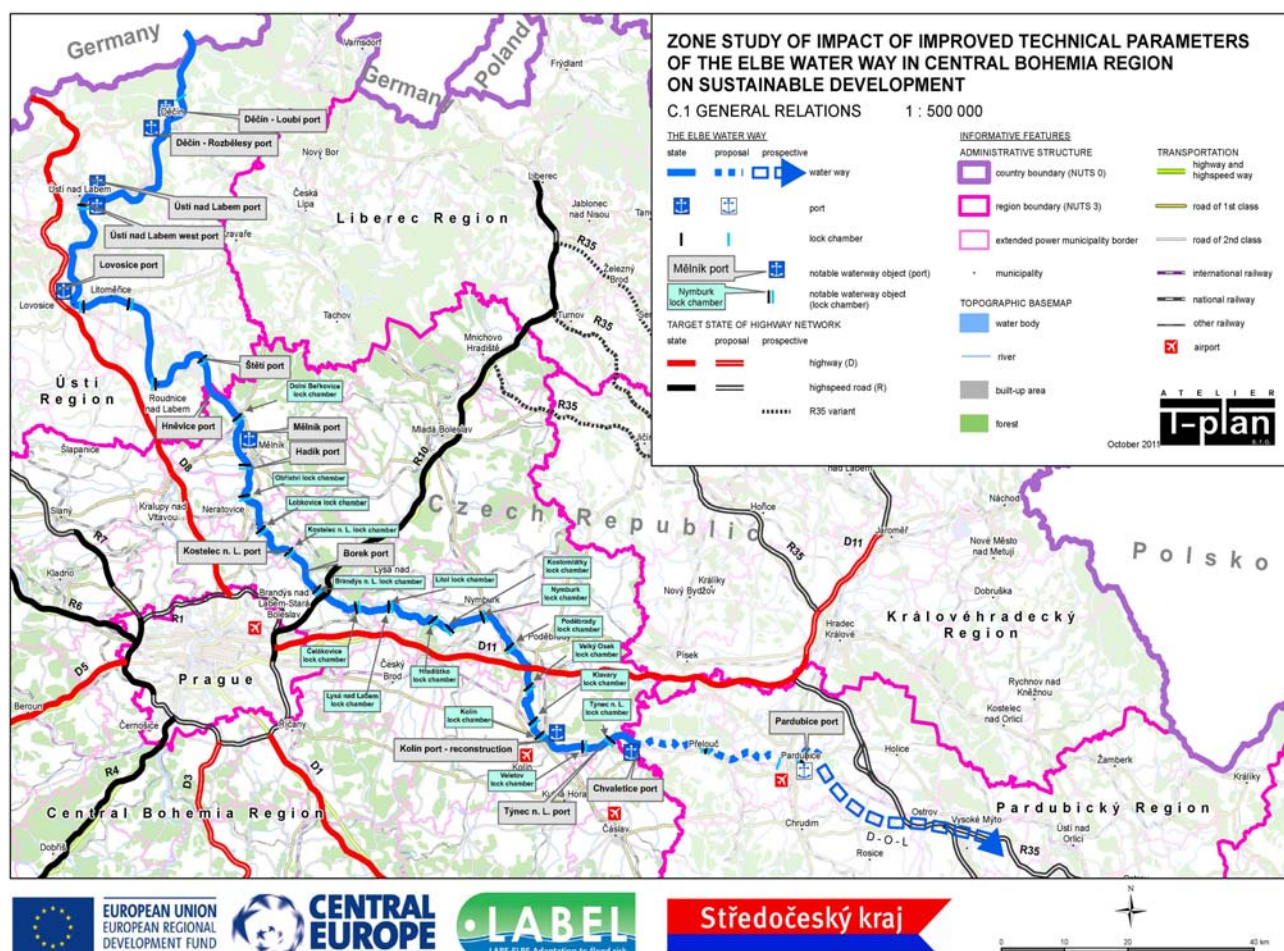
■ Water management

- ✓ Drinking water supply to agglomerations and individual settlements in the wide surroundings,
- ✓ Source of floods with a risk to cultural and historic values and tangible property → coordination of flood protection in large catchment areas

■ Transport – alternative transport mode (to road and railway transport)

THE ELBE WATER WAY IN CR (Current Status)

- **The Lower Elbe**; section Hřensko (GER/CR boundary) - Mělník
 - ✓ Water way class Va, or VIa
 - ✓ Total length 109.27 km
 - ✓ No all-year navigability in the section Hřensko - Ústí n. L., Střekov
 - ✓ All-year navigability in the section Ústí n. L., Střekov - Mělník
 - ✓ 6 navigation levels (sluices) with surged water surface
 - ✓ 2 adjacent lock chambers (small, big)
- **The Middle Elbe**; section Mělník - Chvaletice
 - ✓ Water way class IV,
 - ✓ Total length – 102.0 km
 - ✓ All-year navigability in the section Mělník - Chvaletice
 - ✓ 14 navigation levels (sluices) with surged water level
 - ✓ 1 lock chamber (small)



THE ELBE WATER WAY IN CENTRAL BOHEMIA REGION (Current Status)

- Total length: 112.040 km
 - ✓ The Lower Elbe (Hněvice port – Mělník port) 11.240 km
 - ✓ The Middle Elbe (Mělník port – Týnec n. L. lock chamber) 96.810 km
- Number of lock chambers: 16
- Ports:
 - ✓ Mělník, Kostelec n. L., Nymburk, Kolín, Týnec n. L.

SUBJECT OF STUDY

- **Variant “S”** (Standard) – regular maintenance of the existing Elbe Water Way within class IV parameters
- **Variant “V”** (Violent) - fundamental reconstruction of the Elbe Water Way to comply with parameters of class Vb with continuous two-way traffic

(Source: General Design of Navigability of the Elbe in the Sections Střekov – Mělník, Mělník – Chvaletice)

DESCRIPTION OF THE VARIANTS

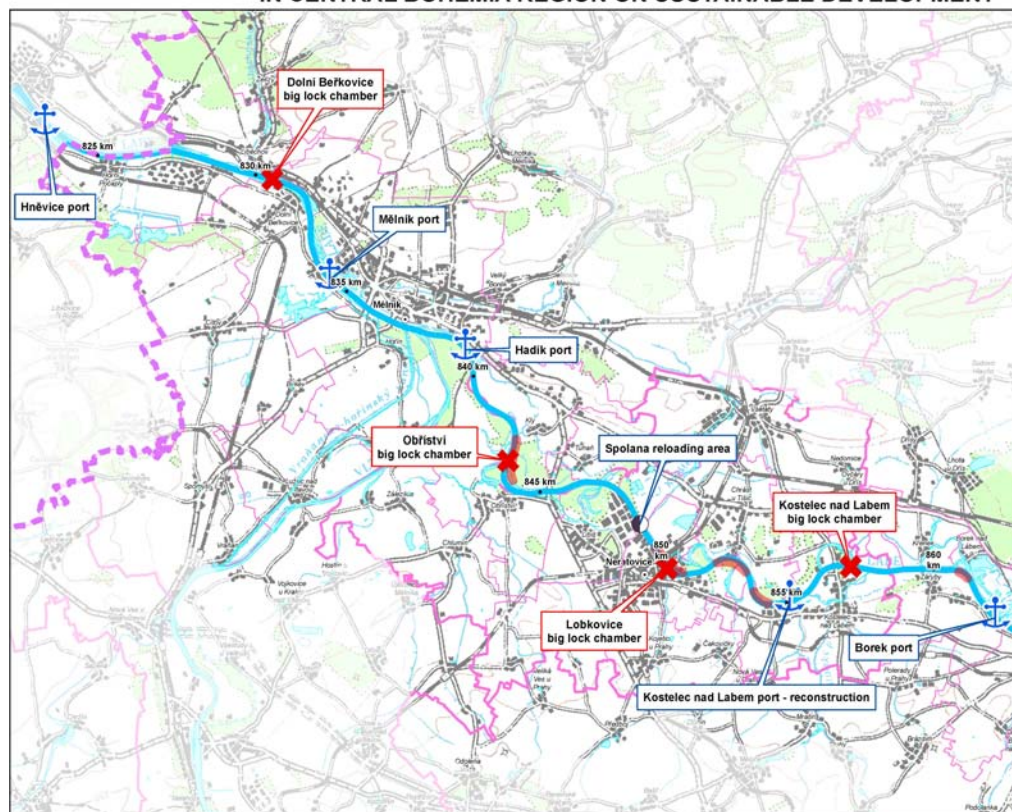
Variant "S"

- = Current operation condition of the Elbe Water Way
- Section Hněvice – Mělník: Big lock chamber Dolní Beřkovice for class Vb
- Section Mělník – Týnec nad Labem: 15 small lock chambers for class IV

Variant "V"

- Fundamental reconstruction of 13 small lock chambers → 2x big lock chambers (length 200m)
- Lock chamber in Dolní Beřkovice (1 functional big lock chamber) → 1x new big lock chamber (length 200 m)
- Lock chamber Obříství+PK Lobkovice (1 functional small lock chamber) → always 1x big lock chamber (length 200 m) – confined spatial limits
- Branching off the existing basin or new branches outside the existing river basin
 - ✓ 27.500 km (circa 30.5% of the total length in the territory of the region)

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C.2 MAIN DEVELOPMENT AIMS - VARIANT "V" (VIOLENT)

1 : 100 000

SECTION: 822 000 - 863 600 m

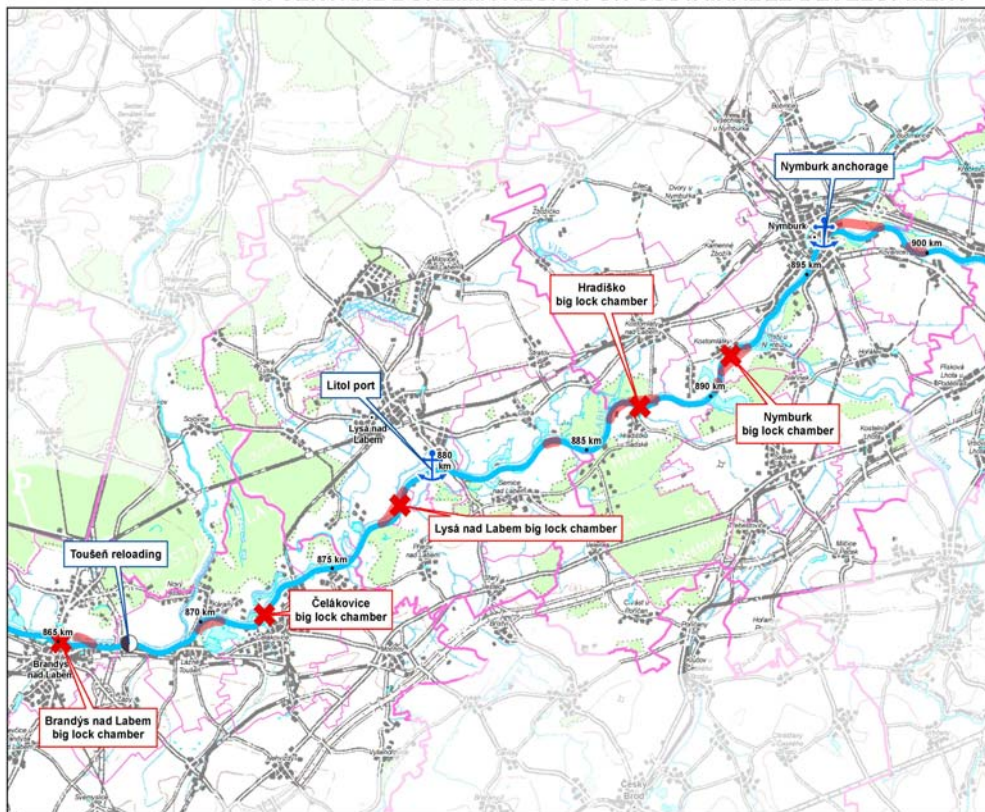
ADMINISTRATIVE STRUCTURE

- region boundary (NUTS 3)
- extended power municipality border
- municipality border
- extended power municipality
- municipality

THE ELBE WATER WAY

- river
- 895 km river mileage (by 5 km)
- port
- reloading area
- lock chamber
- new branch

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C.2 MAIN DEVELOPMENT AIMS - VARIANT "V" (VIOLENT)

1 : 100 000

SECTION: 863 600 - 902 300 m

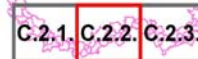
ADMINISTRATIVE STRUCTURE

- region boundary (NUTS 3)
- extended power municipality border
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- municipality

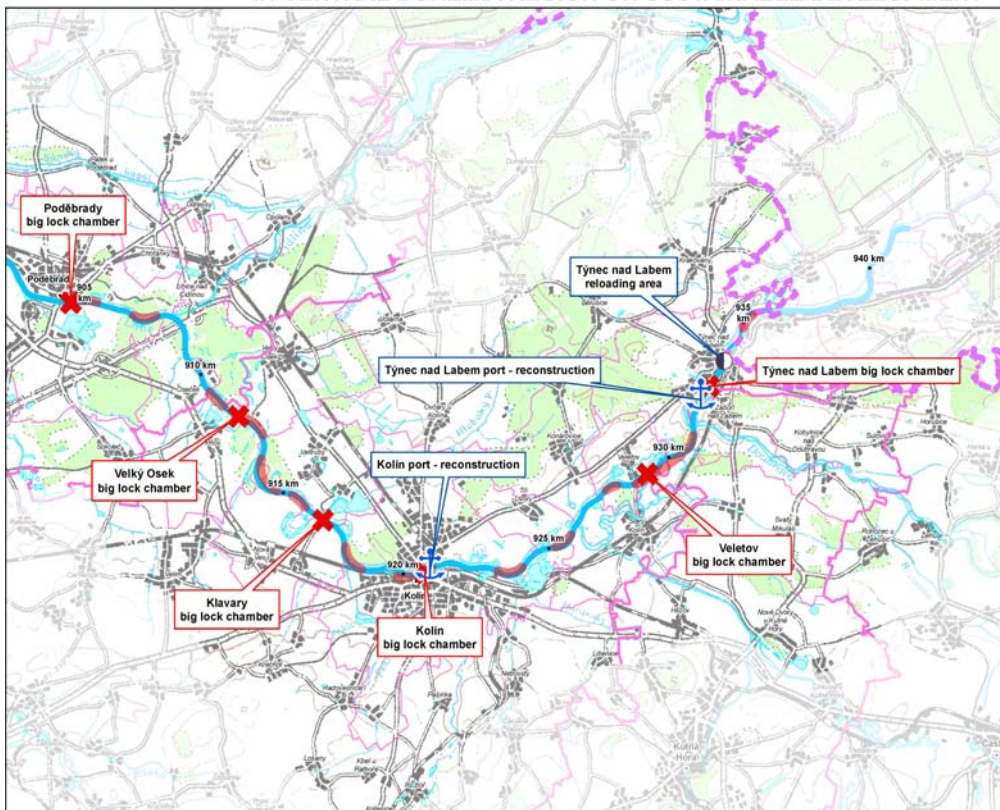
THE ELBE WATER WAY

- river
- river mileage (by 5 km)
- port
- reloading area
- lock chamber
- new branch

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MAP SHEET: C.2.2.
0 1.25 2.5 5 km



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C.2 MAIN DEVELOPMENT AIMS - VARIANT "V" (VIOLENT)

1 : 100 000

SECTION: 902 300 - 939 200 m

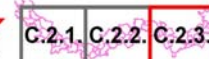
ADMINISTRATIVE STRUCTURE

- region boundary (NUTS 3)
- extended power municipality border
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THE ELBE WATER WAY

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MAP SHEET: C.2.3.
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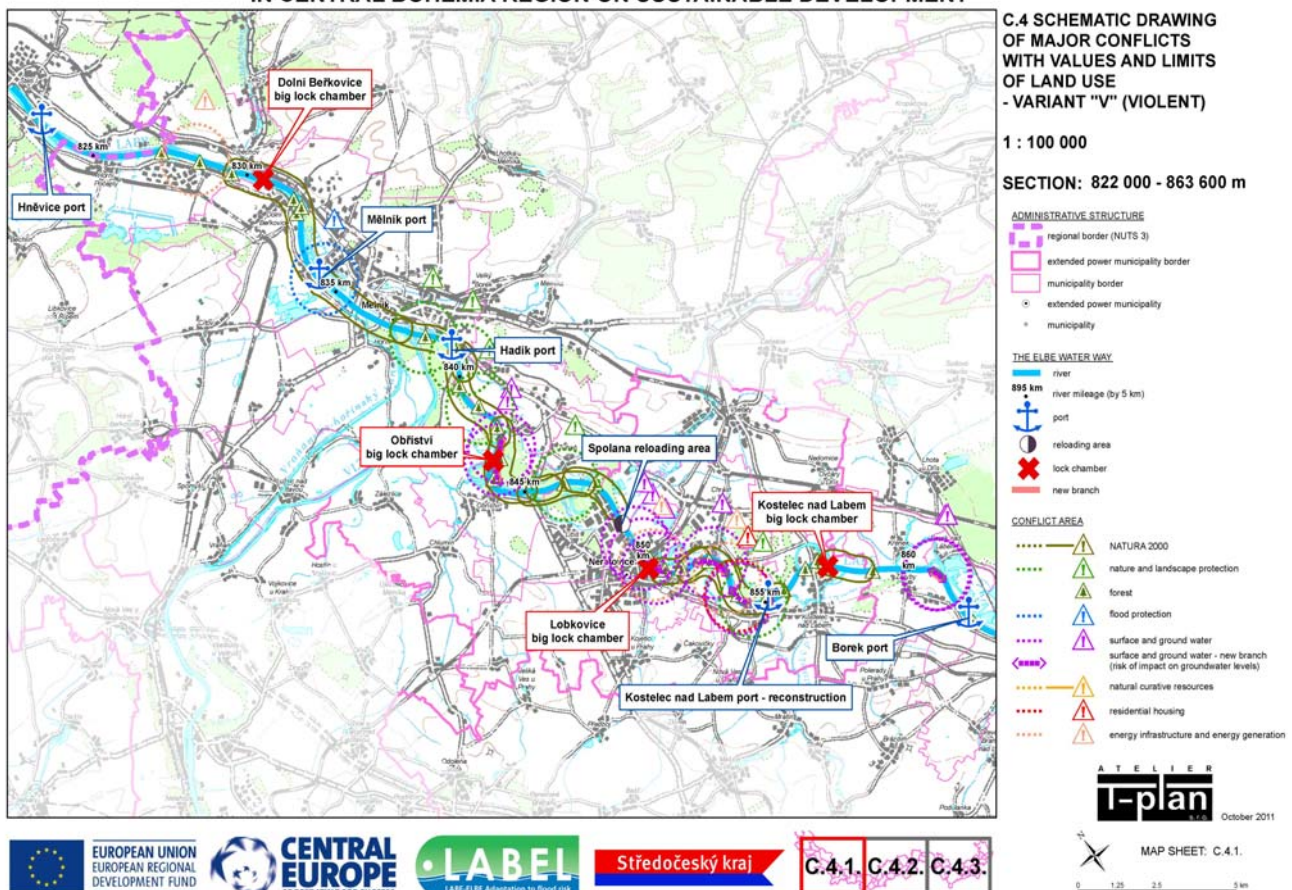


SIGNIFICANT CONFLICTS OF THE VARIANTS WITH VALUES AND LIMITS OF LAND USE

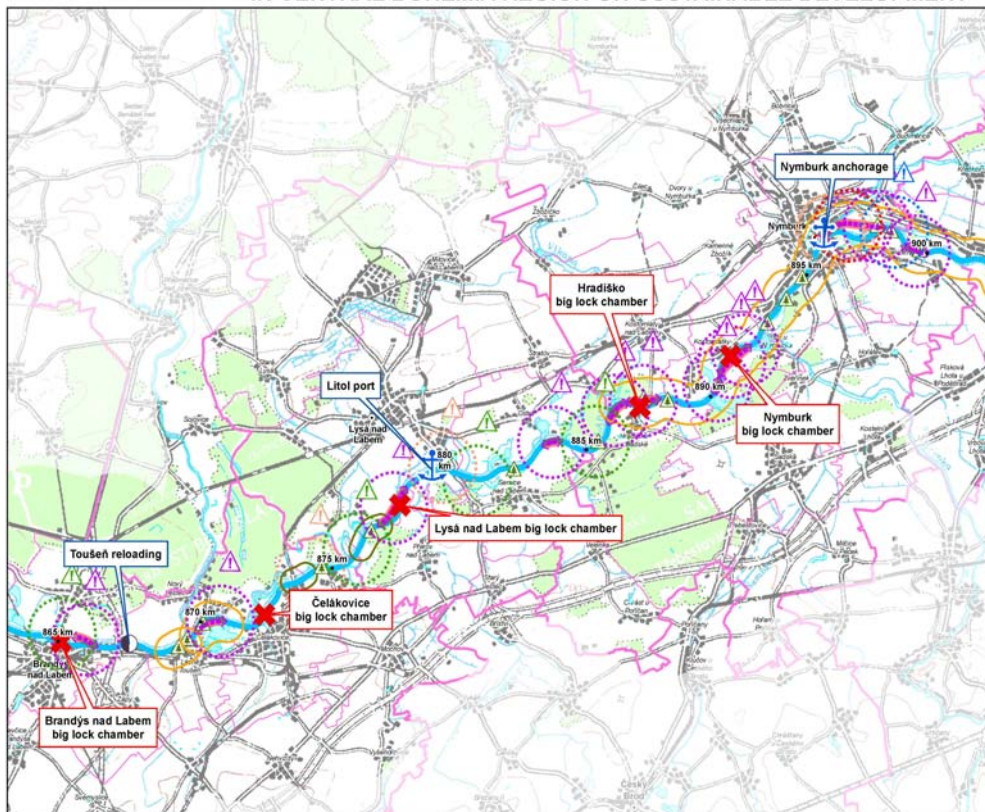
■ Evaluation of significant conflicts of variant "V" (Violent) with regard to impact on:

- ✓ Residential and recreational housing
- ✓ Water regime
- ✓ Nature and landscape
- ✓ Forest stands
- ✓ Water management infrastructure
- ✓ Energy infrastructure
- ✓ Cultural and historic values of the region

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C.4 SCHEMATIC DRAWING
OF MAJOR CONFLICTS
WITH VALUES AND LIMITS
OF LAND USE
- VARIANT "V" (VIOLENT)

1 : 100 000

SECTION: 863 600 - 902 300 m

ADMINISTRATIVE STRUCTURE

- regional border (NUTS 3)
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THE ELBE WATER WAY

- river
- river mileage (by 5 km)
- port
- reloading area
- lock chamber
- new branch

CONFLICT AREA

- NATURA 2000
- nature and landscape protection
- forest
- flood protection
- surface and ground water
- surface and ground water - new branch (risk of impact on groundwater levels)
- natural curative resources
- residential housing
- energy infrastructure and energy generation

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MAP SHEET: C.4.2.
0 1.25 2.5 5 km



EUROPEAN UNION
EUROPEAN REGIONAL
DEVELOPMENT FUND



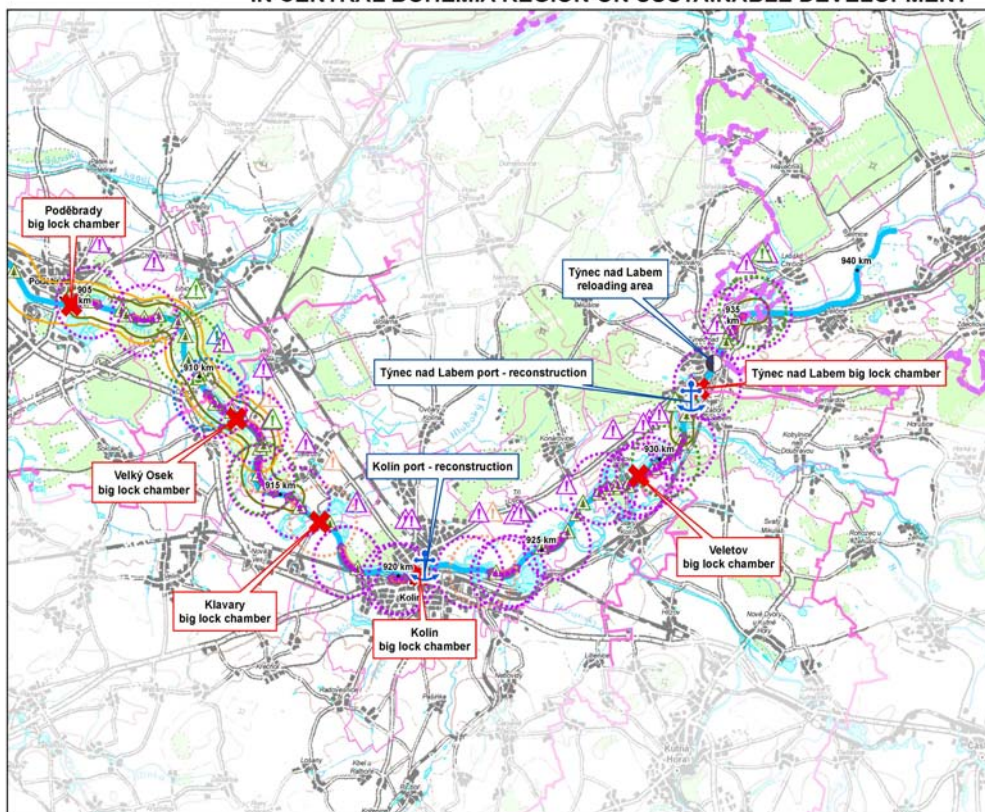
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COOPERATING FOR SUCCESS



Středočeský kraj

C.4.1. C.4.2. C.4.3.

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- VARIANT "V" (VIOLENT)

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Středočeský kraj

C.4.1. C.4.2. C.4.3.

CONDITIONS OF SUSTAINABLE DEVELOPMENT OF THE TERRITORY OPPORTUNITIES x THREATS

VARIANT “V” (Violent)

Evaluation of opportunities and threats across three pillars of zoning development:

- Environment
 - ✓ Water protection
 - ✓ Nature and landscape protection
 - ✓ ZPF and PUPFL protection
- Economic progress
- Social cohesion

ASSUMPTIONS AND OBJECTIVES OF REALISTIC DEVELOPMENT OF THE ELBE WATER WAY

- Follow the reconstruction to parameters of class Vb (pursuant to the General Design) just as a long-term target conditioned by potential implementation of the adjacent Elbe branch of the canal connection the Danube – the Odra – the Elbe
- Follow the strategy of reconstruction in stages of the water way to parameters of class Va
- Assets of the proposed reconstruction in stages:
 - ✓ Investment cost saving together with compliance to the terms and conditions of the AGN agreement and parameter requirements of TEN-T network
 - ✓ Significant reduction of territorial and spatial demand with exclusion of a number of significant conflicts with the values and limits of the land use
 - ✓ Transport effectiveness of the water way corresponding to the expected traffic demand and economic return of the incurred investments

PROPOSED STAGES

■ Short-term horizon

- ✓ Implementation of new small lock chamber in Brandýs nad Labem in compliance with parameters of class Va (existing small lock chamber structure damaged)
- ✓ Implementation of backup small lock chamber in Nymburk in compliance with parameters of class Va (length 115 m) next to existing small lock chamber complying with parameters of class IV

(conditioned by construction of the navigation levels Děčín & Malé Březno)

■ Medium-term horizon

- ✓ Implementation of the other new small lock chambers in compliance with parameters of class Va (length 115 m) next to existing small lock chambers (in wider contexts up to Pardubice level)

■ Long-term horizon

- ✓ Implementation of big lock chambers (length 200 m) including other water way adaptations (in harmony with General Design) – conditioned by potential implementation of the Elbe branch of the canal connection the Danube – the Odra – the Elbe

CONCLUSION AND RECOMMENDATIONS - 1

- Verify and propose adaptation of the Elbe Water Way in stages with priority reconstruction and new development of objects and equipment in compliance with European Classification of Water Ways and conditions of TEN-T to achieve parameters of class Va on condition of:
 - ✓ Utilisation of the existing basin, widened in selected arching sections by 4.0 – 7.5 m (max. 9.5 m) and with deepened navigation rouse in the existing basin to the navigation depth of 3.3 m
 - ✓ Reconstructions of objects and equipment to comply with parameters of class Va with utilisation of existing small lock chambers as the second chamber next to the newly built big lock chamber in size corresponding to class Va (length 115 m)

CONCLUSION AND RECOMMENDATIONS - 2

- Coordination with requirements of:
 - ✓ Concept of flood protection
 - ✓ Protection and water management utilisation of the quaternary groundwater collector (gravel-sand terraces of the Elbe)
 - ✓ Nature and landscape protection (EVL Natura 2000)
 - ✓ Forest functions protection
- Zone study – basis for strategic decision-making about possible scope of economically justifiable and environmentally acceptable modernisation of the Elbe Water Way in stages including mutual coordination with the other intentions and functions of the territory.

CONCLUSION AND RECOMMENDATIONS - 3

- Verified and agreed basic material for the reconstruction stages for inclusion of short-term and medium-term intentions in the zoning plans of Central Bohemia Region and the affected municipalities.
- In coordination with Ústecký and Pardubický regions apply the requirement of upgrade of the Elbe Water Way to parameters of class **Va** including verification of its technical, economical, zoning and environmental aspects in the context of updates of the Policy of Regional Development of CR.

THANK YOU FOR ATTENTION



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