



**Mixed Environment Transport External Expert Team (METEET)  
Training on Integrated Planning of Inland Waterways Transport Projects**

**Budapest, November 12, 2019**

**Involvement of Public &  
Transparency of the Planning Process in  
IWWs Infrastructure Project in Serbia**

**Dr Jasna Muskatirovic**



This project has received funding from the European Union's CEF under the Grant Agreement No. MOVE/B4/SUB/2015-426/CEF/PSA/SI2.719921



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Summary



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## Basic project data

- EU funding programme: IPA 2010
- EU funding rate: 100%
- Value: EUR 1.85 Mill
- Timeframe: 2011-2013
- Beneficiaries:
  - Ministry of Infrastructure and Energy
  - Directorate for Inland Waterways
- Goal: **Improvement of navigation safety**
- Measure: **removal of navigation bottlenecks**



### Towards a Smoother Inland Navigation



Preparation of Necessary Documentation for River Training Works on Selected Locations along the Danube River (IPA 2010)

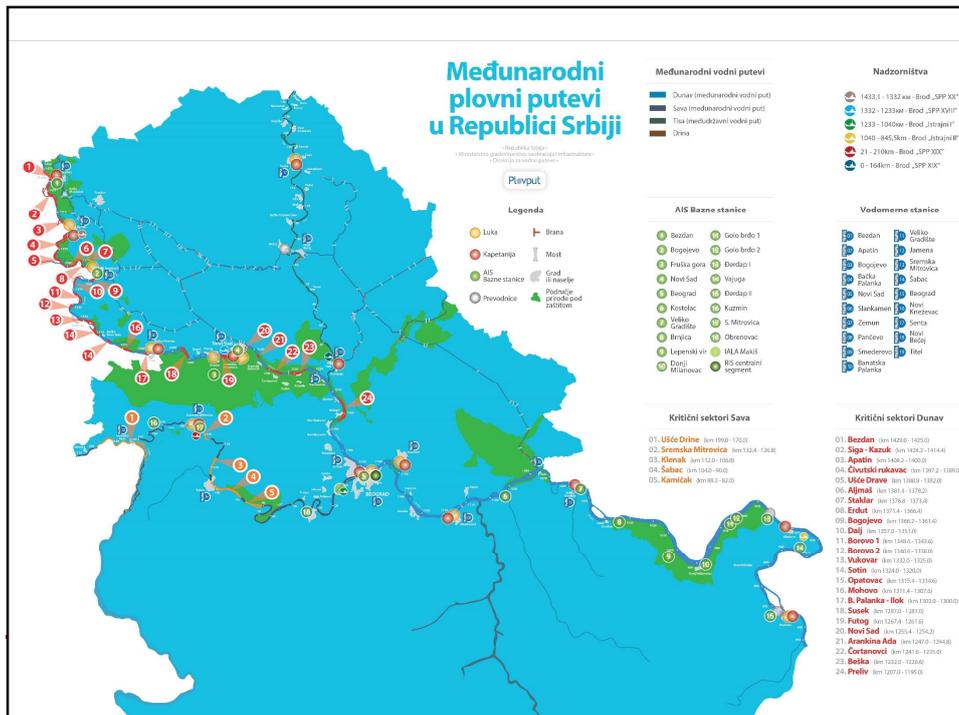


Plovput



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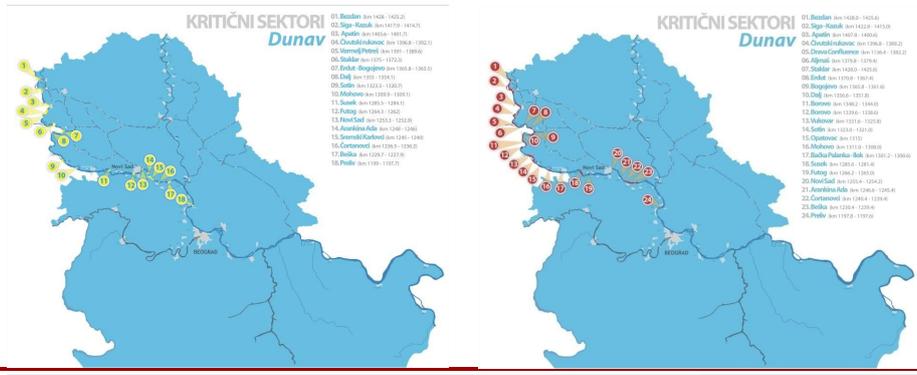
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# Critical sectors

Master Plan (2006)  
18 critical sectors  
40 km total length

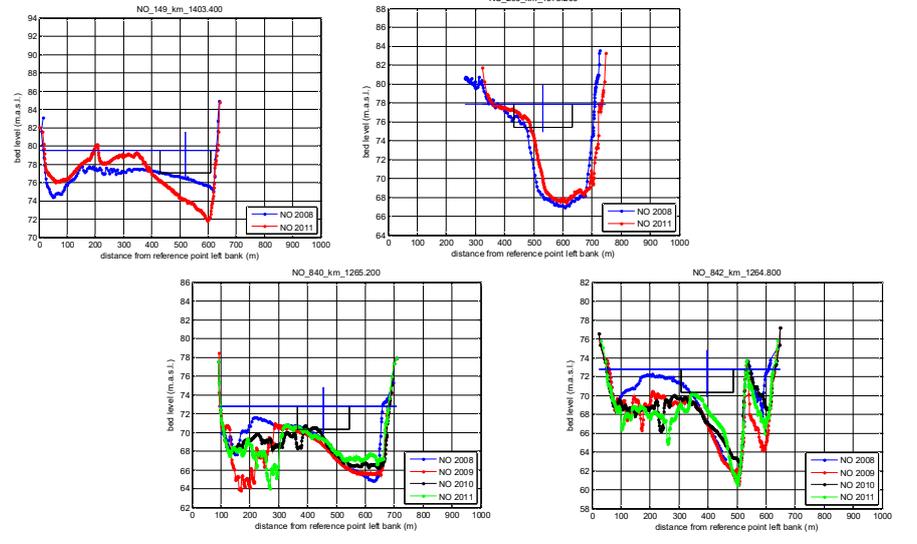
IPA 2010 project (2011)  
24 critical sectors  
70 km total length



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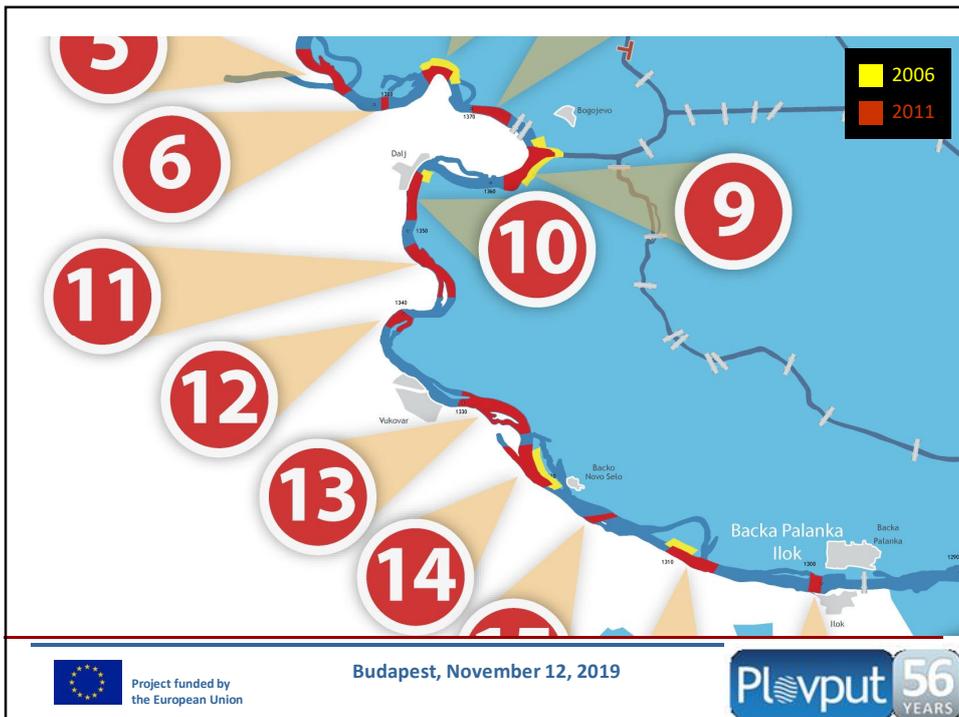
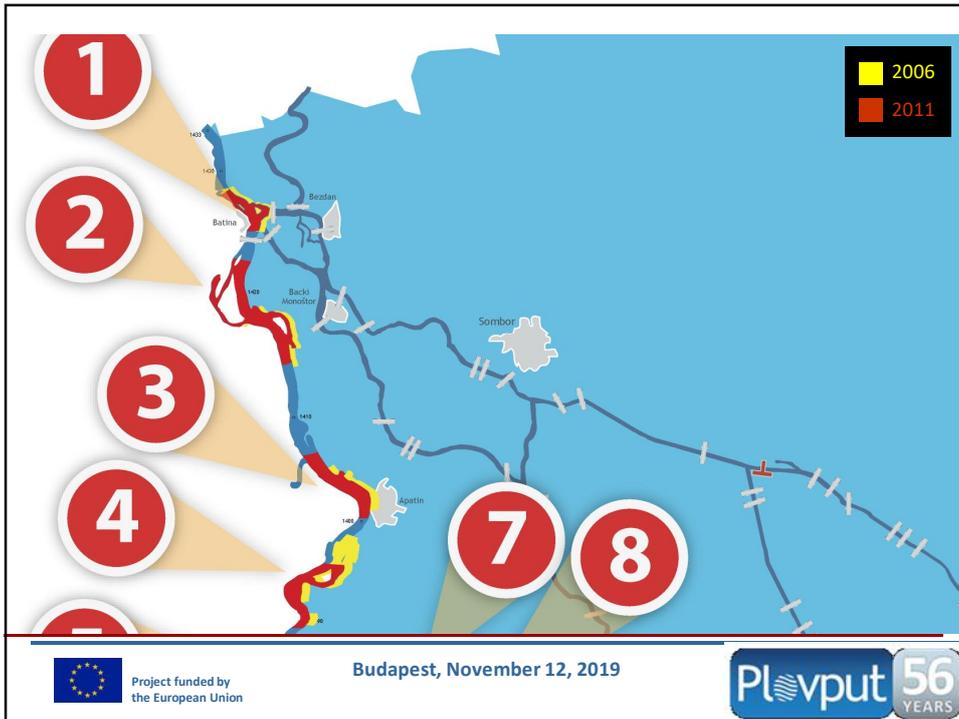


# Cross-section analysis



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## Range of the Project

- hydraulic models (1D and 2D)
- Feasibility study and conceptual designs for all critical sectors
- CBA
- EIA
- main designs and tender documentation for **6 critical sectors**
- IPA Major project application form
- Documentation is being prepared in accordance to **national legislation, as well as EU legislation**

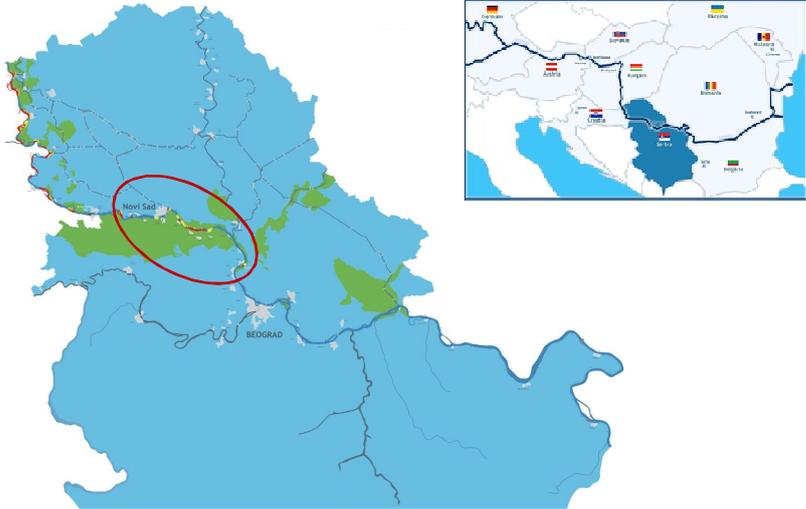
**KRITIČNI SEKTORI Dunav**

01. Begej km 1420.0 - 1425.0  
 02. Sipa-Kosač km 1422.0 - 1413.0  
 03. Begej km 1413.0 - 1404.0  
 04. Čvrski rukavac km 1392.0 - 1392.0  
 05. Čvrski rukavac km 1392.0 - 1392.0  
 06. Sipa km 1379.0 - 1379.0  
 07. Sipa km 1379.0 - 1379.0  
 08. Begej km 1370.0 - 1370.0  
 09. Begej km 1363.0 - 1363.0  
 10. Begej km 1363.0 - 1363.0  
 11. Begej km 1362.0 - 1362.0  
 12. Begej km 1359.0 - 1359.0  
 13. Mulavac km 1331.0 - 1325.0  
 14. Sipa km 1320.0 - 1320.0  
 15. Čvrski km 1315.0  
 16. Begej km 1310.0 - 1300.0  
 17. Begej-Palanka-Be km 1301.2 - 1300.0  
 18. Begej km 1291.0 - 1291.0  
 19. Futog km 1281.2 - 1281.0  
 20. Begej km 1274.0 - 1263.0  
 21. Begej-Be km 1265.0 - 1265.0  
 22. Cortanovci km 1264.0 - 1261.0  
 23. Begej km 1254.0 - 1254.0  
 24. Preliv km 1177.0 - 1177.0

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# Project area



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# Strategic and Legal Framework

<p><b>Strategic framework:</b></p> <ul style="list-style-type: none"> <li>• Master plan for IWW transport in Serbia(2006)</li> <li>• Serbian transport development strategy for the period 2008-2015 (2007)</li> <li>• General transport master plan (2009)</li> <li>• Spatial plan of the corridor VII (drafted)</li> <li>• EU strategy for the Danube region (2010)</li> </ul>	<p><b>Inland navigation:</b></p> <ul style="list-style-type: none"> <li>• DC Recommendations</li> <li>• AGN (UNECE)</li> <li>• SRB-CRO bilateral agreement on inland navigation and fairway maintenance (2009)</li> <li>• Law on navigation and ports on inland waterways (2010)</li> <li>• Bylaws</li> </ul>	<p><b>Water management:</b></p> <ul style="list-style-type: none"> <li>• Law on waters</li> <li>• Relevant bylaws</li> <li>• WFD (EU)</li> <li>• Danube River Basin management plan (ICPDR)</li> </ul> <p><b>Protection of cultural monuments</b></p> <ul style="list-style-type: none"> <li>• Law on cultural heritage</li> <li>• Bylaws</li> </ul>	<p><b>Environment:</b></p> <ul style="list-style-type: none"> <li>• ESPOO convention</li> <li>• Law on nature protection</li> <li>• Law on environment protection</li> <li>• Law on EIA</li> <li>• Law on SEA</li> <li>• Regulation on ecological network</li> <li>• Specific spatial plans</li> <li>• Relevant bylaws</li> </ul>
<p><b>Law on construction and spatial planning</b></p>			



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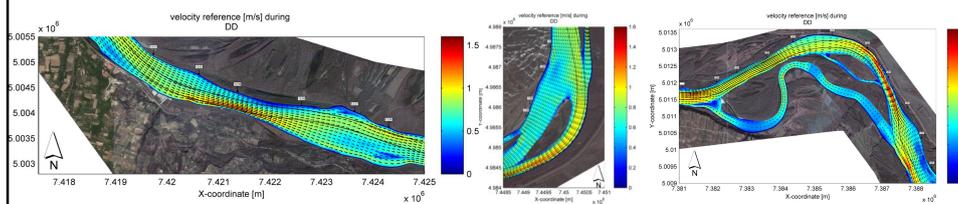
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## Basic Orientation

Ensuring **minimal width and depth** of the fairway during the low water periods, while **respecting environmental requirements**

- Preserving **connectivity** conditions
- Preferring **detached structures**
- Ensuring **mitigation measures**
- Preserving **sediment equilibrium**

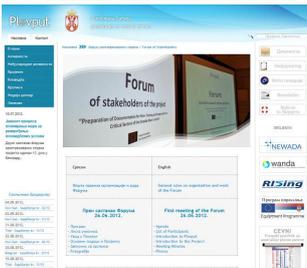


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## Dissemination



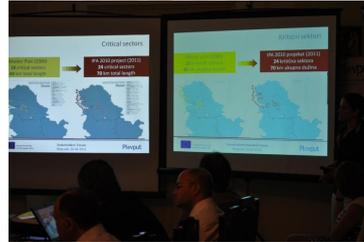
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## Stakeholders' Forum

- **Interdisciplinary** approach
  - inland waterway transport
  - hydrotechnics
  - industry
  - nature and environment protection
  - archaeology
- Kick-off: **26<sup>th</sup> of June 2012**
- Ensuring **transparency**
- Using **multi-criteria analysis**
- **Methodology** of the work ensuring **comparability of options**



## Building trust



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## Forum members



## Asking each others



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## Stakeholder's Forum - Basic principles of work

- Membership is **voluntary**
- Membership is **free of charge**
- Recommendations of the Forum have **advisory** character
- **Mutual respect** and acknowledgment of standpoints of others



### Acknowledging each others



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## Basic principles of the work

- All documents are in both **Serbian and English**
- Work of the Forum is **public** and **transparent**
- **Observers** are welcomed



### Respecting each others



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## Results

- **General rules** on organization and work of the Forum
- **Annex I** to the General rules – list of members and deputy members
- Active participation of observers
- **Methodology** of the work ensuring **comparability of options** and **choosing the best**

**Learning from each others**



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## Results

- Results of **evaluation** of the work of the Forum
- **6 critical sectors** presented and discussed
- Detailed discussion and fruitful inputs

**Common understanding**



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## Results

- Identification and **common agreement on the preferred options** for further modeling for 6 critical sectors on Serbian stretch of the Danube
- **2.500 hits** on Plovput web site – section Forum
- All documents available in **Serbian and English**
- Short **movie** about the Forum



## Planning together



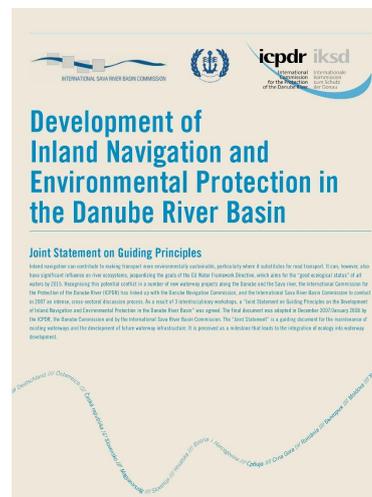
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## Joint Statement on Guiding Principles

- Adopted by ICPDR and Danube Commission in December 2007
- Annual follow-up meetings (Zagreb - September 2017, Vienna - September 2018, Budapest – September 2019, next Zagreb – fall 2020)



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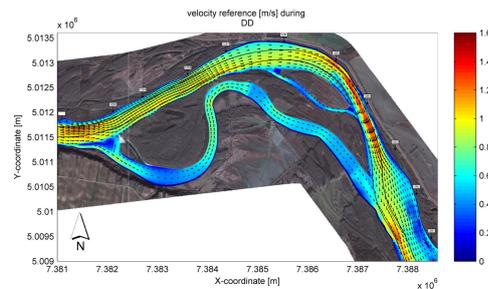
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## 01. Application of JS

**JS: ...supporting a dynamic equilibrium and adequate connectivity conditions...**

- Adopted design approach:
  - Preserving connectivity conditions



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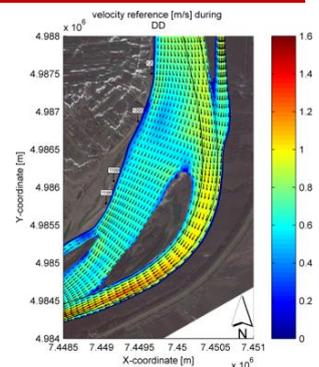
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## 02. Application of JS

**JS: ...undisturbed longitudinal and lateral migration of all fish species and other water-related species to ensure their natural and self-sustaining development...**

- Adopted design approach:
  - Preferring detached structures



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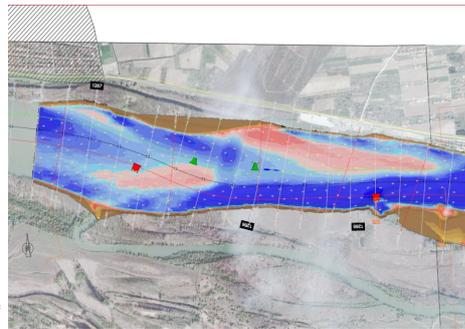
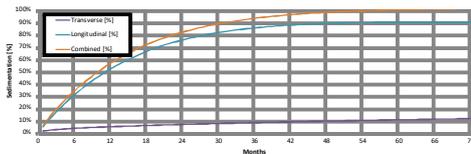
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### 03. Application of JS

**JS: ...a balanced sediment budget...**

- Adopted design approach:
  - Preserving sediment equilibrium



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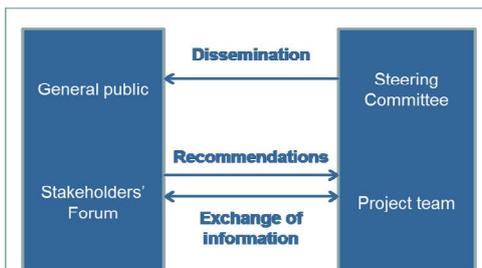
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### 04. Application of JS

**JS: ...Establish interdisciplinary planning teams involving key stakeholders...**

- Stakeholders' Forum established



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## 05. Application of JS

**JS: ...Set-up a transparent planning process (information/participation)...**

- Stakeholders' Forum established
- Web site, no restrictions (2.000 hits monthly)
- Serbian and English language
- 9 Forum meetings
- 2 site visits
- 26 presentations on events
- 24 articles
- 1 movie



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## 06. Application of JS

**JS: ...Ensure the comparability of alternatives...**

- Multi-Criteria Analysis
  - Navigation
  - Environment
  - Technical feasibility
  - Costs



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## 07. Application of JS

**JS: ...Inform and consult the international river commissions in the Danube River Basin...**

- Stakeholders' Forum



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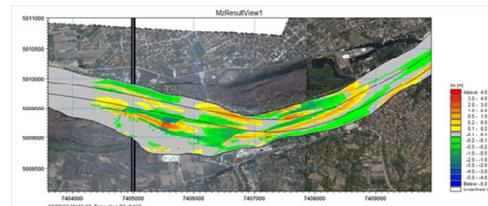
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## 08. Application of JS

**JS: ...Seek to avoid or, if this is not possible, to minimize the impacts of structural/ hydraulic engineering interventions...**

- For each of 6 sectors, at least 5 conceptual alternatives
- For conceptual alternatives, up to 35 simulations



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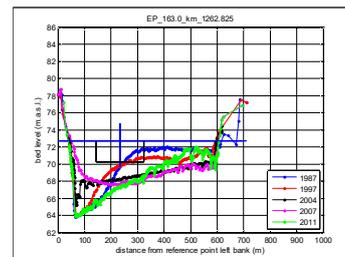
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## 09. Application of JS

### Use of best practice measures to improve navigation...

- Using all available practice, to identify the most suitable solution for each sector, by case-by-case approach



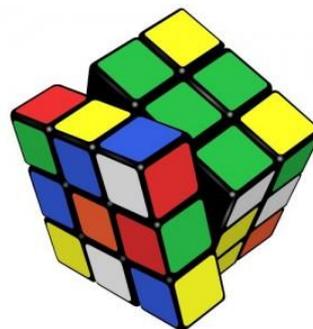
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## 10. Application of JS

JS: ...Ensure flexible funding ... to enable integrated planning and adaptive implementation & monitoring...



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## 11. Application of JS

**JS: ...Monitor the effects of measures...**

- **Environmental monitoring ensured: before, during and after works**
  - Hydro-morphology
  - Water and sediment quality
  - Biology



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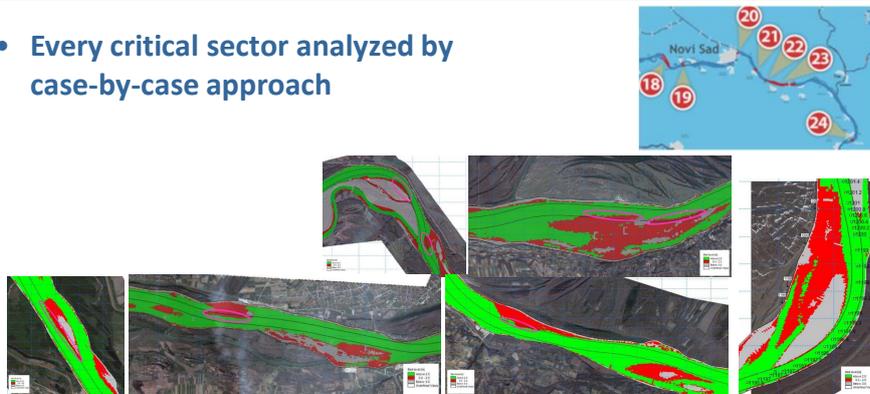
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## 12. Application of JS

**JS: ...Use a case-by-case approach...**

- **Every critical sector analyzed by case-by-case approach**



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## 13. Application of JS

JS: ...“working with nature” ... following the principle of minimum or temporary engineering intervention...

- Mostly applied solution is dredging, with refilling the sediment back into the river
- Minimum structural interventions by application of different pilot solutions
- All structures detached



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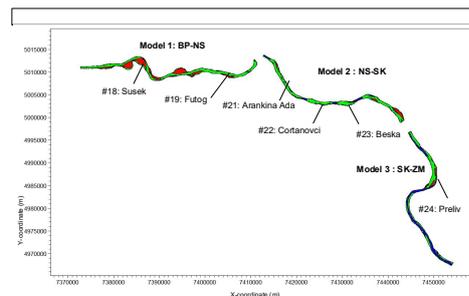
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## 14. Application of JS

JS: ...Integrated design of regulation structures, equally regarding hydraulic, morphological and ecological criteria...

- Multi-Criteria Analysis
  - Navigation
  - Environment
  - Technical feasibility
  - Costs



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## 15. Application of JS

**JS: ...implementation of measures in an adaptive form (e.g. river bed stabilization by granulometric bed improvement, low water regulation by groynes)...**

- All structures design to have impact only during low water periods



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## 16. Application of JS

**JS: ...Optimal use of the potential for river restoration (e.g. river banks restoration) and side channel reconnection...**

- Budget for (during monitoring programme) identified additional environmental compensation measures insured



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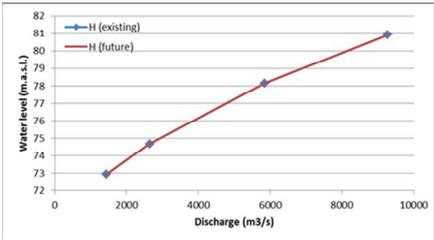
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# 17. Application of JS

**JS: ...Ensuring that flood water levels are not exacerbated and, ideally, are reduced...**

- No long-term impact on water levels

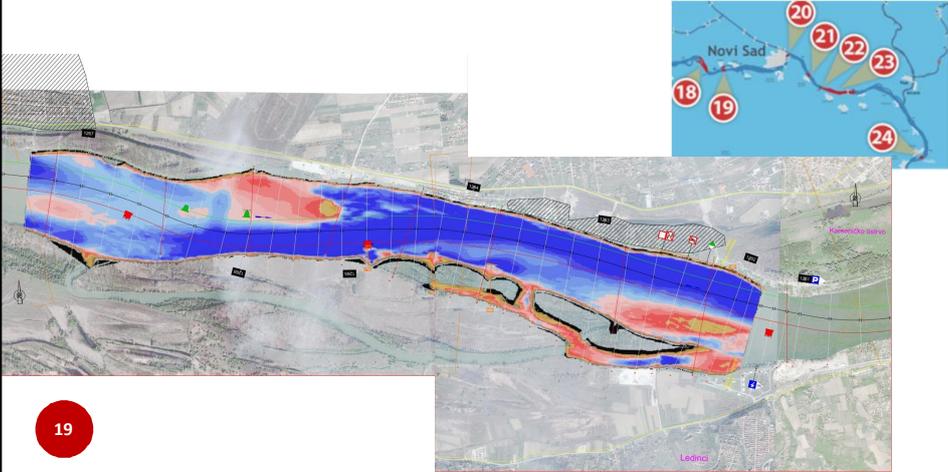


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# Current navigation conditions

Critical sector **FUTOG** – available depth, August 2012

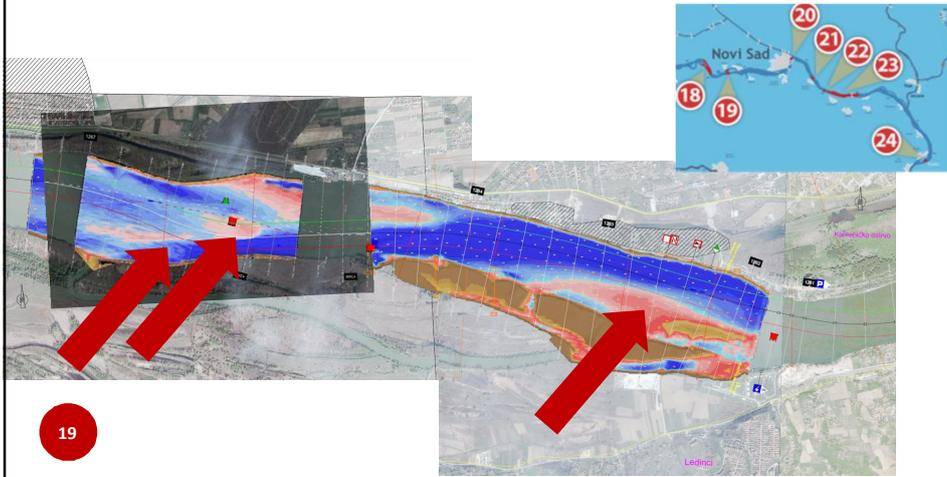


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## Current navigation conditions

Critical sector FUTOG – available depth, August and December 2013



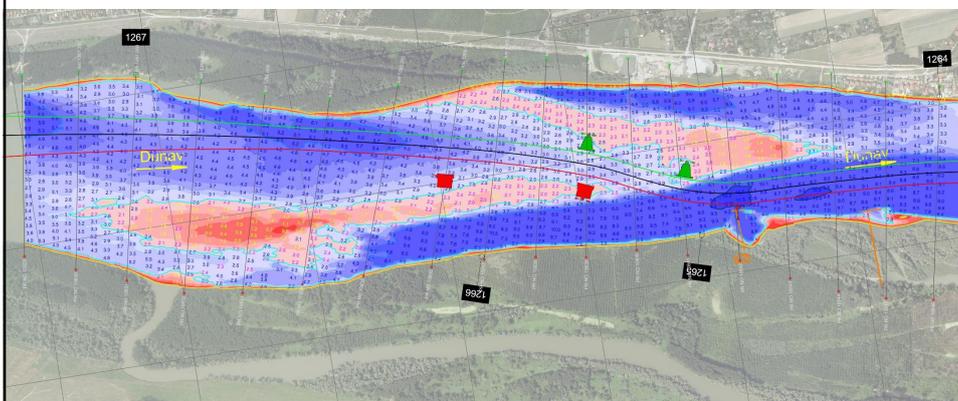
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## Current navigation conditions

Critical sector FUTOG – available depth, May 2017



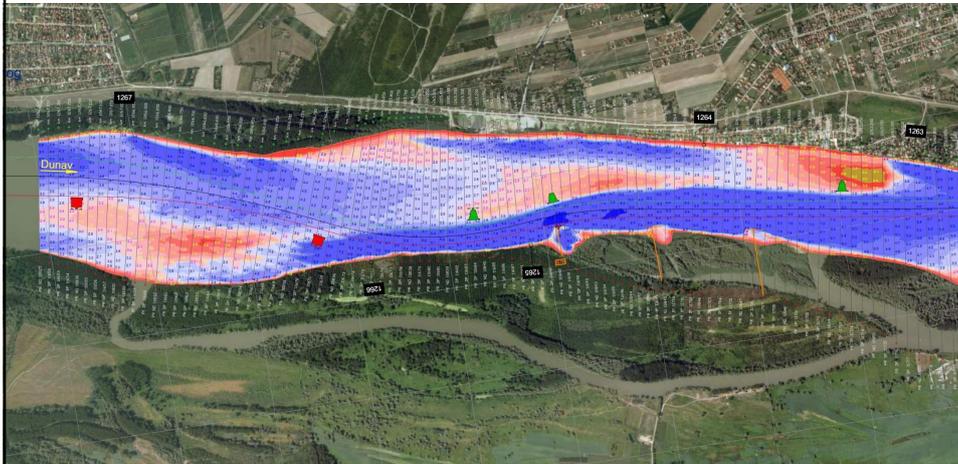
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## Current navigation conditions

Critical sector **FUTOG** – available depth, May 2018



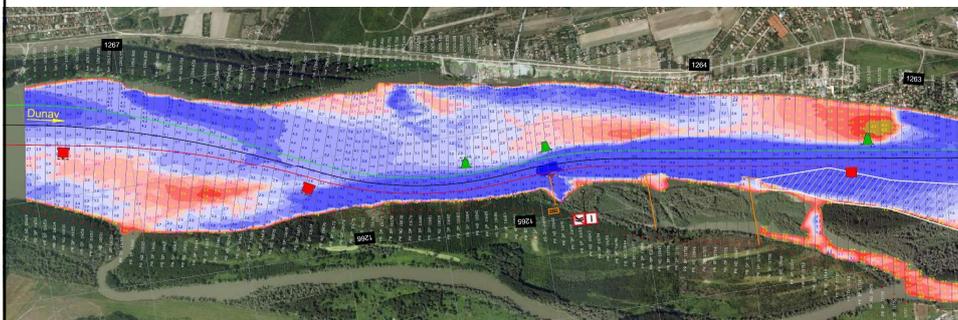
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## Current navigation conditions

Critical sector **FUTOG** – available depth, July 2018



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# Stakeholders' Forum during Works

Форум заинтересованих страна у оквиру пројекта „Надзор и еколошки мониторинг над хидротехничким и багерским радовима на критичним секторима на реци Дунав“



Stakeholders' Forum within the project „Supervision and Environmental Monitoring of River Training and Dredging Works on Critical Sectors on the Danube River“



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# Stakeholders' Forum during Works

- Forum Members
- Observers



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# Stakeholders' Forum during Works



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# Stakeholders' Forum during Works



2019



## Stakeholders' Forum during Works



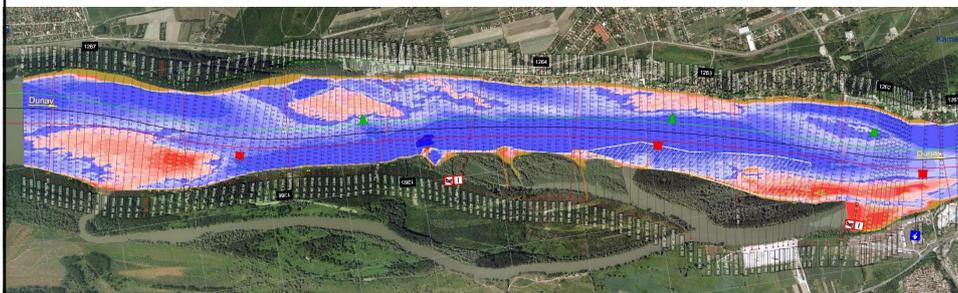
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## Current navigation conditions

Critical sector **FUTOG** – available depth, October 2019

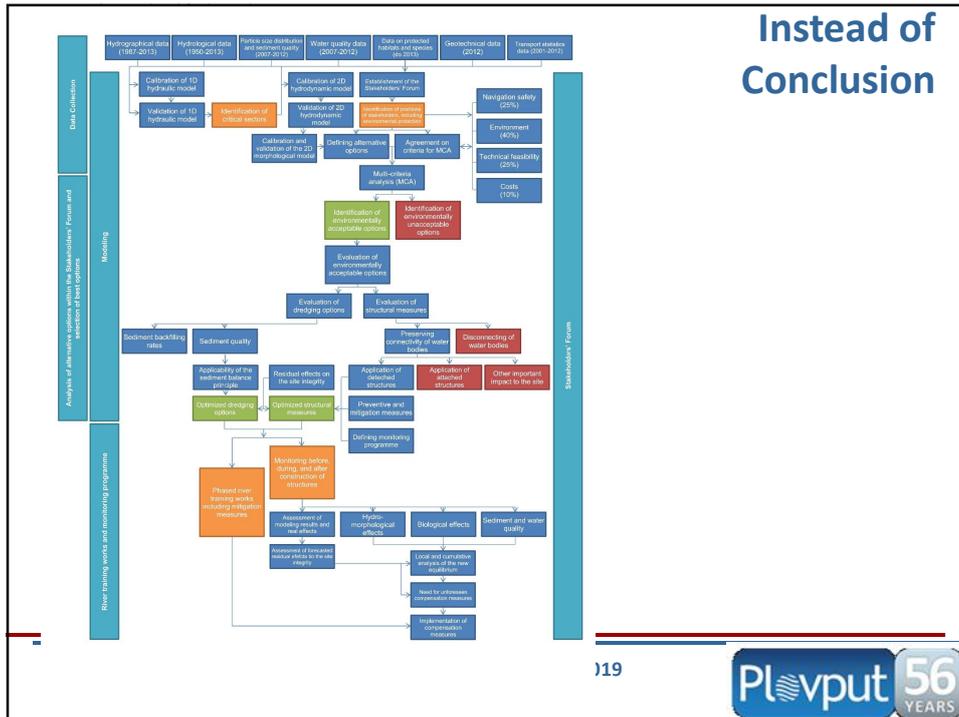


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# Instead of Conclusion



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# Summary

- Basic project data
- Critical sectors
- Project area
- Stakeholders' forum
- Application of JS
- Current navigation conditions
- Stakeholders' forum during works
- Summary



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**Mixed Environment Transport External Expert Team (METEET)  
Training on Integrated Planning of Inland Waterways Transport Projects**

**Thank you  
for your kind attention**

**Dr Jasna Muskatirovic**



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