

Insight into modelling components & methodology to be applied for future modelling activities



Republic of Serbia
Ministry of Construction, Transport and Infrastructure
Directorate for Inland Waterways

6th Stakeholder's Forum Meeting (Kopačevo, Croatia)
Wed, **27. September 2023** (08:30-13:00 CEST)

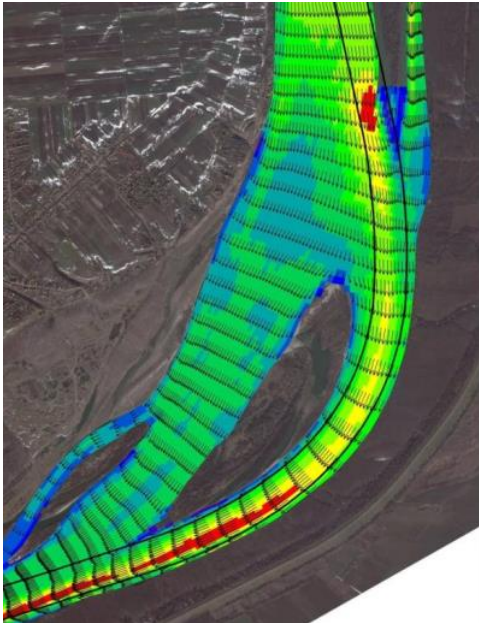
Current status of the modelling activity

- Evaluation of the **technical offer** submitted for comments and NO to the EIB on July 7, 2023.
- Expected response by the end of September, bearing in mind that LOT 2, which was also part of the same procurement procedure (but was delayed), is also pending.
- Since there is only one offer, the EIB's evaluation and confirmation of the **financial offer** should not take long.
- It is reasonable to predict that the tender procedure will be concluded by the end of October.



Guide to Procurement
for projects financed
by the EIB

Modelling Components with time frame estimates



- 1D hydraulic model for the entire Serbian and Croatian common Danube stretch (3-4 months)
- Redefinition and prioritization of navigational bottlenecks (1-2 months)
- Definition of parameters for the multi-criteria analysis (1-2 months)
- Definition of alternative solutions for prioritized sectors and 2D hydrodynamic and morphological modelling (3-4 months)
- Development of the integrated study on alternative solutions and definition of next steps for future investments (last 6 months).

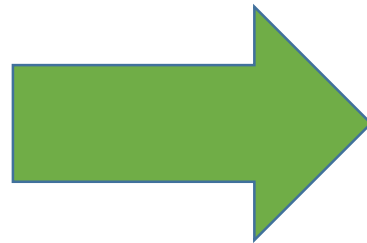
The modelling activity is anticipated to last a total of 12 months once it commences.

Inputs and outputs

Activity 1 – 1D hydraulic modelling



- Digital Terrain Model (DTM) —
Hydrographical data
- Data on existing ENRs
- Geometry data about the bridges and
existing hydro-technical structures
- Floodplain data
- Hydrological data
- 1D Modelling Software
- Interaction with stakeholders
(Stakeholders' Forum Meetings)

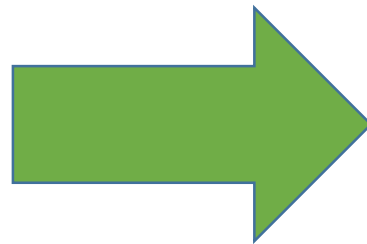


- **1D Model Calibrated and Running**
- **Updated ENRs**
- **Technical Report on 1D Hydraulic
Modeling and Update of ENRs**

Inputs and outputs

Activity 2 – Redefinition and Prioritization of Navigational Bottlenecks

- Current Bottlenecks catalogue
- Document on prioritization of current bottlenecks
- Technical Report on 1D Hydraulic Modeling and Update of ENRs
- Available hydrographic data
- Interaction with stakeholders (Stakeholders' Forum Meetings)



- **Technical Report on Redefined Bottlenecks**
- **Technical Report on Prioritization of Bottlenecks**

Inputs and outputs

Activity 3 – Definition of Criteria for the Multi-Criteria Analysis

- Interaction with stakeholders (Stakeholders' Forum Meetings)



- Technical Report on the Definition of the MCA



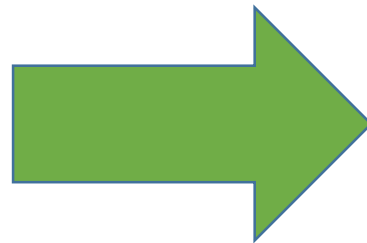
- Top to bottom approach (**overall criteria** are defined first – e.g. Navigation, Environment, Feasibility)
- Possible Criteria and weights (**ponders**)
- Breaking down criteria into **sub-criteria** – e.g. Navigation => Fairway depth, width, curve radius, flow velocity...)
- Definition of **ponders for sub-criteria**
- Definition of **minimum thresholds**
- Definition of **evaluation scales for each sub-criteria**

Inputs and outputs

Activity 4 – 2D Hydrodynamic and Morphological Modelling




- Digital Terrain Model (DTM) —
Hydrographical data
- Data on recalculated ENRs
- Geometry data about the bridges and
existing hydro-technical structures
- Floodplain data
- Hydrological data
- 2D Modelling Software
- Interaction with stakeholders
(Stakeholders' Forum Meetings)



- **2D Model Calibrated and Running**
- **Bottlenecks Variants Defined**
- **Technical Report on 2D Modeling
and Application of MCA**



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Thank you for your kind attention

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