





10th Meeting on the Follow-up of the Joint Statement on Guiding Principles for the Development of Inland Navigation and Environmental Protection in the Danube Basin

INLAND WATERWAY ON SAVA RIVER (km 300 - km 329)

Authors:

Institut IGH Hidrokonzalt projektiranje Elektroprojekt

Budapest, September 11 – 12, 2019

SUMMARY

Ministry of the Sea, Transport and Infrastructure:

• Introduction

Institut IGH/Hidrokonzalt projektiranje:

- Hydrological analysis
- Hydraulic analysis
- Optimal solution

Elektroprojekt:

• Environmental study

INTRODUCTION

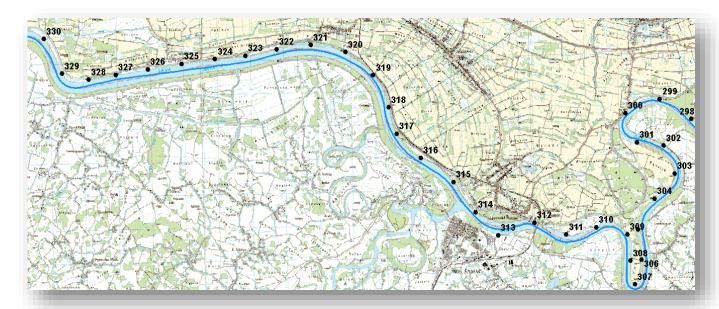
• Beneficiary:

Ministry of the Sea, Transport and Infrastructure, Croatia, Zagreb (Originally: Agency for Inland Waterways, Croatia, Vukovar)

- Preparation of EIA Study and Design Documentation for the river Sava IW section between rkm 329 to 315 and 312+200 to 300
- EU co-funding: CONNECTING EUROPE FACILITY (CEF)
- Grant contract signed in October 2017
- Project duration: Jan 2018- Dec 2020
- Sava River border between Croatia and Bosnia and Herzegovina

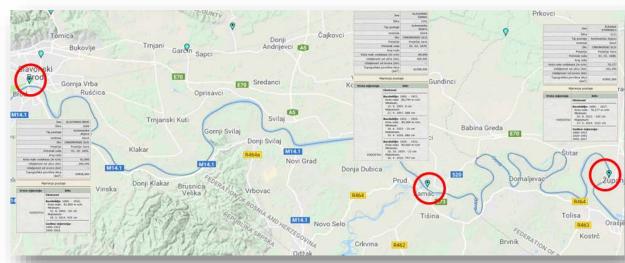
INTRODUCTION

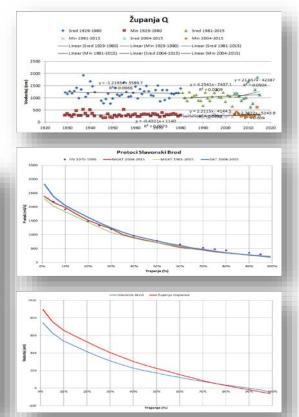
- Most critical section of Sava river inland waterway between Belgrade (Serbia) and Sisak (Croatia) between km 320 and km 329 (Jaruge-Novi Grad)
- Part of European agreement on main inland waterways of international importance (AGN)
- Currently: Class III
- Intention: Class IV



HYDROLOGICAL ANALYSIS

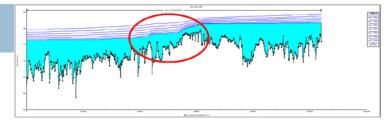
- Hydrological stations: Slavonski Brod (km 378), Slavonski Šamac (km 306) and Županja stepenica (km 262)
- Stationarity and homogeneity analyses
- Water-level/discharge duration curves
- Adopted duration curves/values

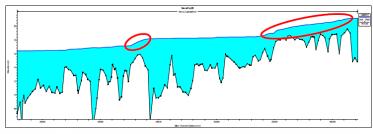


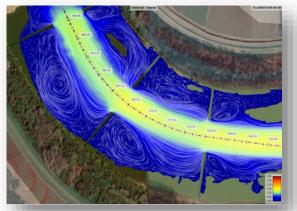


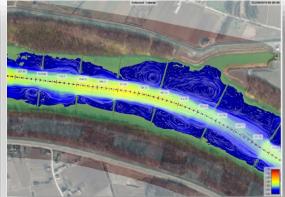
HYDRAULIC ANALYSIS

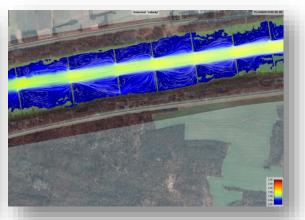
- 1D (HEC-RAS 5.0.6)
- Length 104 km, 544 cross sections
- Critical values km 300 km 329
- Critical sections:
 - Jaruge Novi Grad (km 320 km 329)
 - Slavonski Šamac downstream (km 310 km 312.2)
- 2D hydraulic analysis (HEC-RAS 5.0.7)







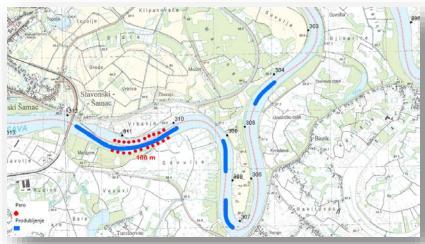




OPTIMAL SOLUTION

Analyzed potential solutions:

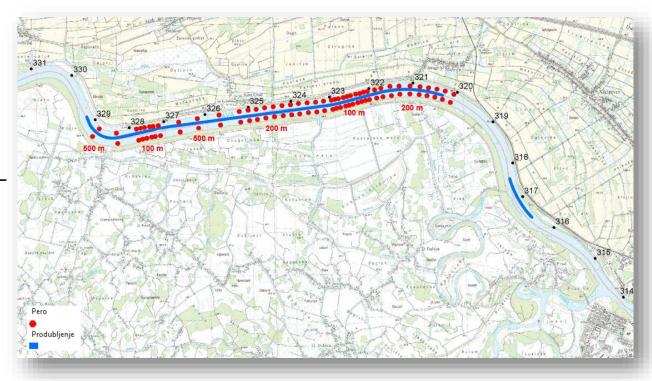
- Bottom deepening along the waterway
- Groynes construction along critical sections
- Combination of bottom deepening and groynes construction
- Multiple-criteria analysis
- Section km 300 km 312:
 - km 304.2 km 304.7 bottom deepening
 - km 307.3 km 307.8 bottom deepening
 - km 308.4 km 308.9 bottom deepening
 - ✓ km 310 312.2 (Slavonski Šamac downstream)
 - combination of bottom deepening + groynes



OPTIMAL SOLUTION

Section km 315 - km 329

- km 316 km 317: bottom deepening
- km 320 km 329 (Jaruge Novi Grad): combination of bottom deepening and groynes construction



ENVIRONMENTAL STUDY

Pursuant to National legislation the project must undergo **EIA** and **Main Assesment for NATURA2000** procedure.

EIA & Main scope:

- Aquisition of special requests for EIA content from competent ministires and authorities
- Research and description of current state of environment (biodiversity – flora/fauna, water body status, hydrology, hydrogeology.....)
- Assesment of possible impact of project on each environmental component





REPUBLIKA HRVATSKA MINISTARSTVO ZAŠTITE OKOLIŠA I ENERGETIKE 10000 Zaprih. Radnička cesta 80 Tel: 01/37111, fisc: 01/4805 100 KLASA: UPI 612-0718-60/36 URBROJ: 517-07-1-1-2-18-4 Zagreb, 16. svibnjs 2018.

Ministartov zaštiće edošla i energetike temeljem članka 30. stavka 3. veznov uz članak 29. stavka 1. Zakona o zaštili pritede (Navedne novien, brej 10/2011 i 15/2018), a postodom zakipeva nostielja zakvata Agencije za vodne potove iz Vukovara, Parobredanka 5. rastopanog po ovalstenilas Eko Inovet d.o., iz Zapeko, Darškovićeva 50., za prevedku postupika Prehodne cejene prihrutiljivosti zakvata za ekološku methu za Relabilitacija plovnog puza njeke Save za donicu rkm 329 do rkm 315 i i km 312-2000 do ram 500, nakon provedneng nostupika, donosi

RJEŠENJE

I. Za nanjeravni zabvat Rehabiliteij plovnog pata rijek Save za dionicu rku 329 do rku 315 i rku 312-200 de rku 309, notielja zabvata Agencije za vodate putove iz Vukovara, Parobredarska 5, zastupanog po ovlašteniku Eko Invest d.o.o. iz Zagreba, Darškovičev 50, ne mole se isključiti mogenesto zaskoljuh megativnih utjecaja na ciljeve očavanja i cjelovitost podračja ekolokle narčet te je za isti obavezna provedbu postupka Glavne očene prihratljivosti za ekolokika mrcha.

II. Ovo rješenje izdaje se na rok od četiri godine.

II. Ovo rješenje objavljuje se na internetskoj stranici Ministarstva.

Obrazloženje

Ministantivo raditi oslošla i cenergitike zaprinello je 11. turopja 2018. godine zabijev za proveđbu postupia Prethodne ocjene prihružijivosti za ekološka mreha za zahvat Rehubiliteji ploros puta rijeke Save za donica na 294 do rima 115 i rima 112+200 do rima 1000, nositelju zahvata Agencije za vodne pratove i vlakovara, Parebredneka 5, zastupanog po ovlakensku Elso Invest 4.00. Uz Zapreho, Patistivoleva 50. U zahvjetu, sukidato određama zdanaš 30. marka 2. Zakona o zakiti prirode navedeni sa svi podaci o nositelju zahvata i priložena je potrebna dokumentacija (Eko Invest 4.00., vejjaš 2018.).

Po zaprimljenom zabijevu, ukladno određbana članka 30. stavka 3. Zakona o zaštiti prinodi, Ministarstvo je zatražilo mišljenje Hrvatske agencije za okoliš i prirođu (u daljnjem tekstu HAOP) koje je zaprimilo 15. svobeja 2018. godine.

U provedbi postupka ovo Ministarstvo razmotrilo je predmetni zalitjev, dostavljenu dokumentaciju, podatke o ekološkoj mreži (područja ekološke mreče, ciljne vrste i stanište i ipove) i mišljenje HAOP-a (KLASA: 612-07/18-26/325, URBROJ: 427-06-6-18-3) od 14. svibnja 2018. godine te je utvrdilo kako slijedi: EIA & Main Assesment scope continued:

- Programme of measures (**mitigation** of possible adverse impacts on the environment)
- EIA prodecure with the Ministry of Enivornmental Protection and Energetics (EIA committee meetings, public participation...)

Good practice examples (proposed mitigation measures):

- Return of dredged sediment to downstream reaches or suitable locations
- Construction of declined groynes

THANK YOU FOR YOUR ATTENTION

