



FAST DANUBE

***Technical Assistance for Revising and Complementing the Feasibility Study
Regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and
Complementary Studies***



**Co-financed by the Connecting Europe
Facility of the European Union**



Administrația Fluvială
a Dunării de Jos R.A. Galați

FAST DANUBE

WORKSHOP ON OPTIONS APPRAISAL / SELECTION FOR FAST DANUBE PROJECT

20 Sep'18, Bucuresti

<i>Time</i>	<i>Topic</i>	<i>Responsible</i>
09:00 – 09:30	<i>Registration / Coffee</i>	<i>All</i>
WORKSHOP ON «Options Appraisal / Selection for FAST DANUBE project»		
09.30 – 9:45	Introduction: <ul style="list-style-type: none"> – Welcome – H&S moment – Project status 	Mr. Dan TARARA Mr. Romeo SOARE
09.45 – 11.00	Session 1: <ul style="list-style-type: none"> – Initial option preferences, morphological (Prof Colin Thorne via skype) – Revised options, modelling / engineering / CBA – Environmental studies – Q&A 	Mr. Paul RAYNER Mr. Damian DEBSKI Ms. Roxana DORNEANU Ms. Charlotte HANDY
11.00 – 11.30	<i>Coffee break</i>	
11.30 – 13.00	Session 2: <ul style="list-style-type: none"> – Multi-criteria analysis: introductory session 	Mr. Dan TARARA Mr. Paul RAYNER Ms. Roxana DORNEANU Ms. Charlotte HANDY
13.00 – 13.45	<i>Lunch</i>	
13.45 – 15.30	Session 3: <ul style="list-style-type: none"> – Multi-criteria analysis: interactive session 	Mr. Dan TARARA Mr. Paul RAYNER Ms. Roxana DORNEANU Ms. Charlotte HANDY
15.30 – 16.00	Session 4: <ul style="list-style-type: none"> – Consensus view on long term sustainable options 	
16.00	Closing statement	Mr. Romeo SOARE



Administrația Fluvială
a Dunării de Jos R.A. Galați

FAST DANUBE

Scurta prezentare –

WORKSHOP ON OPTIONS APPRAISAL / SELECTION FOR FAST DANUBE PROJECT
INTRODUCTION – PROJECT STATUS

Paul S Rayner, Hydraulics/Hydrodynamics Expert, Technical Lead

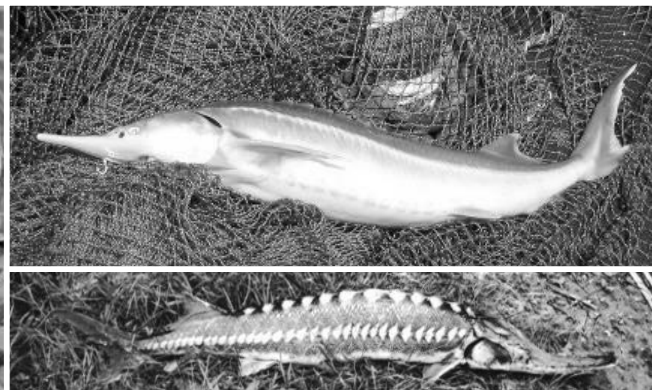
20 Sep'18, Bucuresti

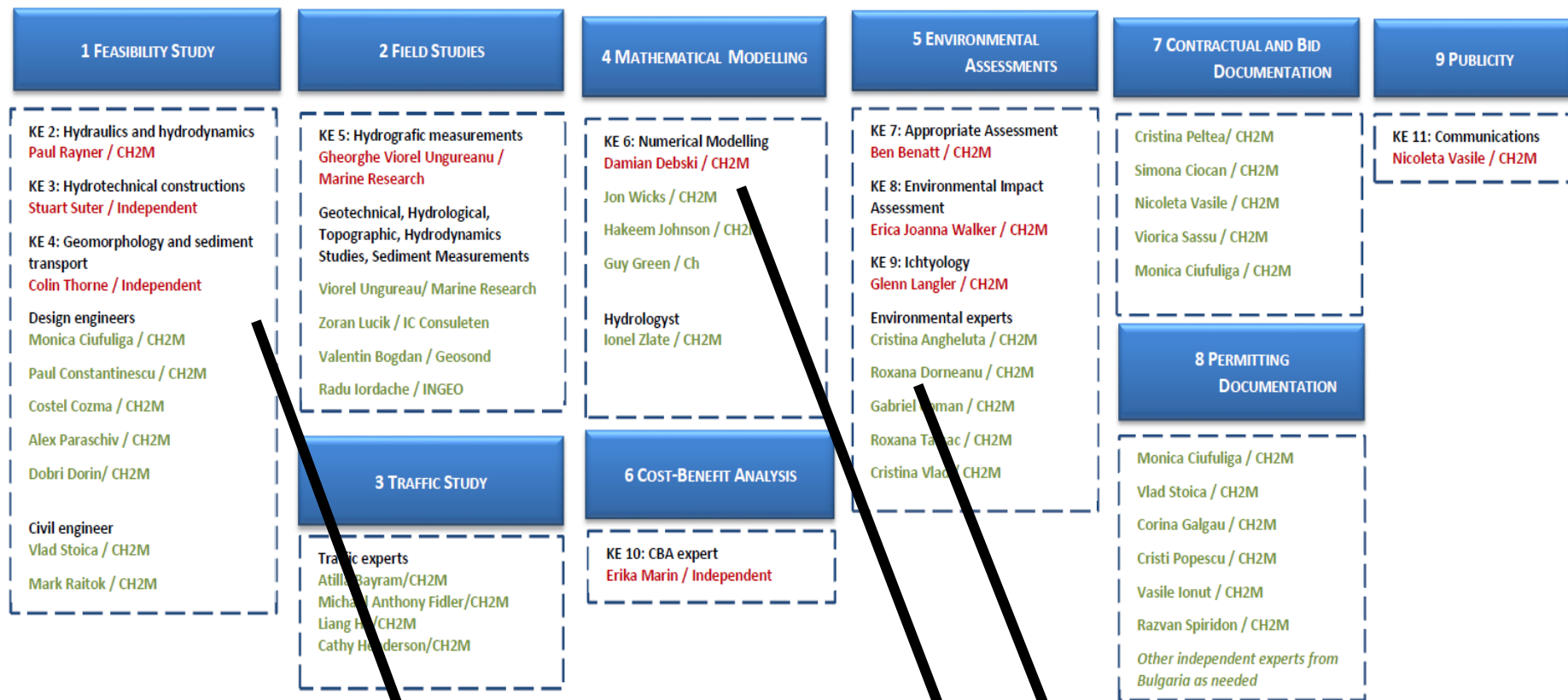


Introduction – project status

Topics to be covered:

- Introducing our experts and JASPERS / COWI
- Overview of approach
- Project to date: modelling, environmental studies, MCA
- Work in progress: options appraisal





Project Director
Serban Tiganescu

Project Manager
Dan Tarara

KE: Appraisal expert
Peter von Lany

KE 2: Hydraulics and hydrodynamics
Paul Rayner / CH2M

KE 3: Hydrotechnical constructions
Stuart Suter / Independent

KE 4: Geomorphology and sediment transport
Colin Thorne / Independent

Design engineers
Rob Davinroy / Independent
(formerly US Army Corps)

KE6: Numerical Modelling
Damian Debski

Environmental Expert
Roxanna Dorneanu

Sturgeon / Fish Expert
Radu Suci

Environmental Expert
Charlotte Handy

Technical Assistance for Revising and Complementing the Feasibility Study Regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and Complementary Studies - FAST DANUBE

Located on a pre-identified section of the Rhine-Danube Corridor (Bulgarian /Romanian common section), the Action aims to accelerate the removal of an existing bottleneck along this cross-border section of the Danube as it will identify the works to achieve stable navigation conditions all year round.

It is part of a Global Project to implement the Fairway Rehabilitation and Maintenance Danube Master Plan.

The Action consists of 4 activities from the completion of the Environmental Impact Assessment and building permits documentation to the drafting of the tender designs for future works.

The Action is a precondition for the implementation of any physical interventions aimed at improving the navigability of the Bulgarian/Romanian Danube common section.

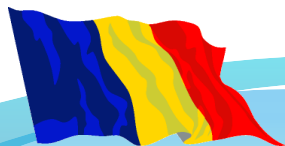
<https://ec.europa.eu/inea/en/connecting-europe-facility/cef-transport/technical-assistance-revising-and-complementing-feasibility>



FAST-DANUBE: GOALS OF PROJECT

The overall goals and targets of the project are to:

- Implement a strategy to improve navigation based on (i) increasing traffic safety and (ii) increasing the number of days per year during which the minimum conditions are provided for navigation traffic through the Rhine – Danube corridor. The target increase in usage is from a current level of 280 days to 340 days per year
- As a result, enable an increase in the total goods transported; to be targeted as a 20% increase in traffic compared with 2014 usage levels; presumably measured in tonnage.
- Ensure that the preferred navigation improvement strategy:
 - (i) Is harmonized with European regulations (free of charge navigation, common rules of navigation).
 - (ii) Conforms with all permits and licenses required under Romanian and Bulgarian law.
 - (iii) Qualifies to obtain necessary urban planning approvals and certification.
 - (iv) Meets the requirements of Appropriate Assessment protocols to obtain environmental approvals and permits from authorized institutions in Romania and Bulgaria.
 - (v) Is formulated based on full consultation with appropriate Authorities and the public.



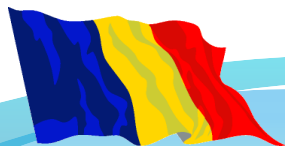
Co-financed by the Connecting Europe
Facility of the European Union



FAST-DANUBE: OBJECTIVES/DELIVERABLES OF TECHNICAL ASSISTANCE SERVICES

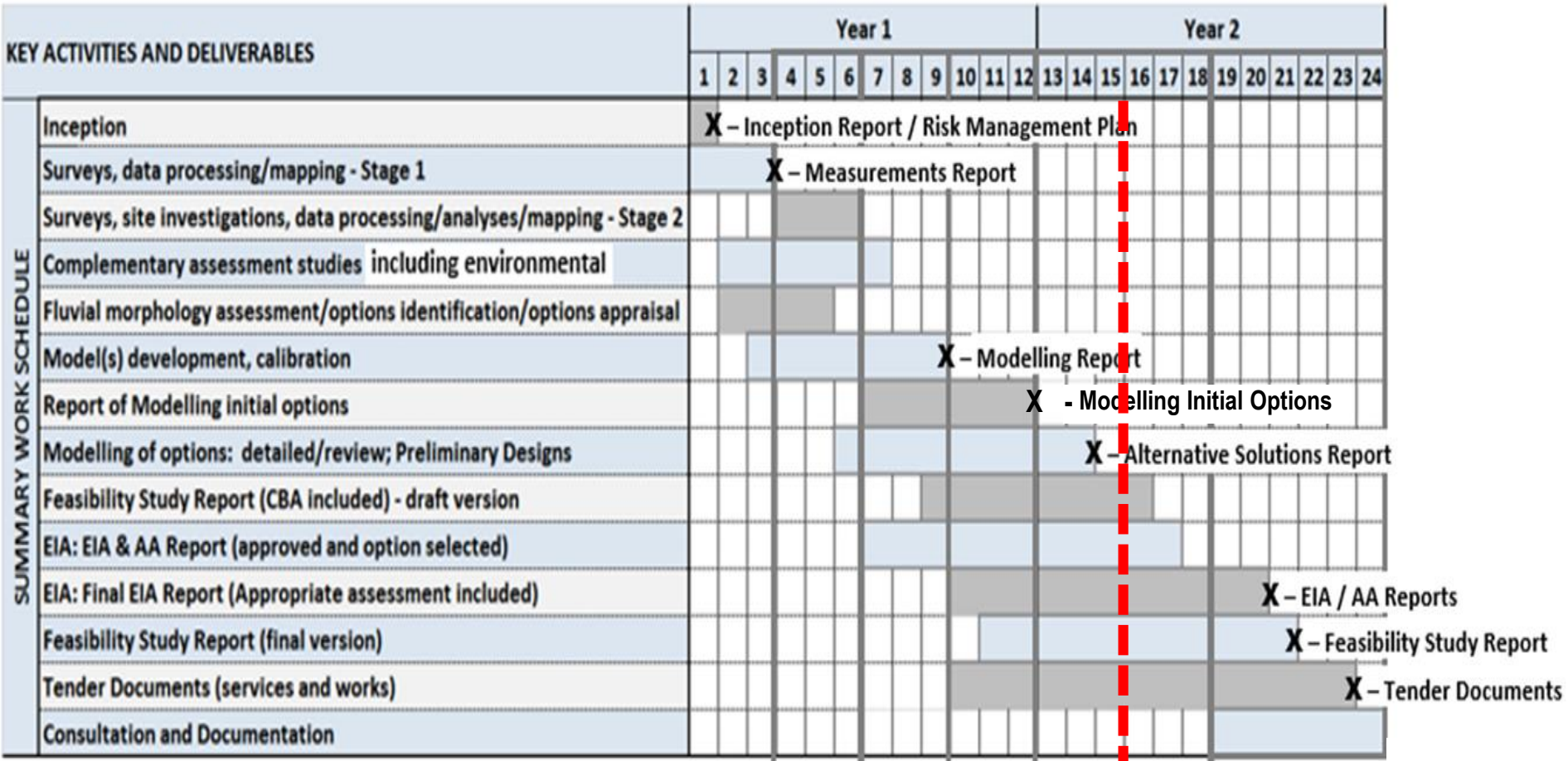
The objectives/deliverables of the Technical Assistance services mirror the project objectives:

- Provide the Lower Danube River Administration with a comprehensive Feasibility Study presenting and justifying at least two long-term, sustainable technical options to improve navigation usage and safety at each identified critical location
- To support this with full documentation of all physical surveys, investigations and data; and of calibrated and verified simulation and analytical models including provision of licensed software and training as appropriate
- To provide the Lower Danube Administration with all necessary documentation to support consultation of scenarios and options, and all approvals and permitting documentation to support promotion and allow adoption of the preferred option(s); and
- Furnish all necessary Tender Document and plans to enable the Administration to implement the project and dispense its responsibilities to fulfil the recommendations of the Budapest Danube Commission to increase the traffic of transported goods through the Danube corridor



Co-financed by the Connecting Europe
Facility of the European Union







Project status

Options appraisal

Long-list options appraisal: - complete

- high level MCA / screening
- stakeholder consultation

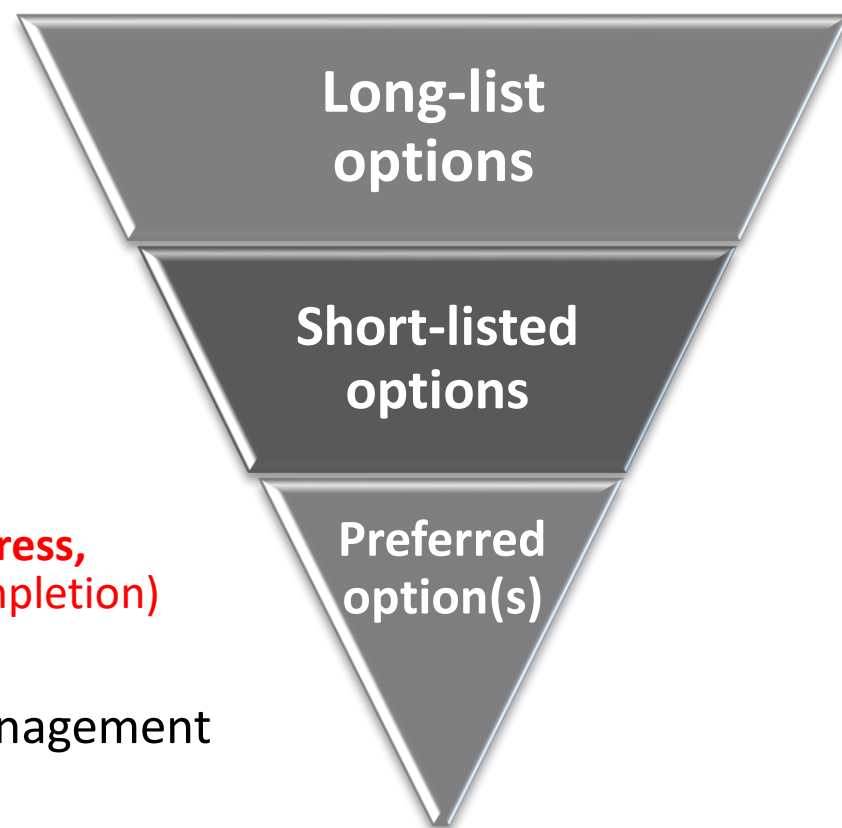
Short-list options appraisal:

- modelling
- environmental assessment
- traffic study, CBA
- **detailed MCA**
- stakeholder consultation

- work in progress,
(nearing completion)

Preferred options:

- tender design, framework for adaptive management
- EU-compliant, EIA/AA, permitting
- stakeholder consultation





Technical Assistance for Revising and Complementing the Feasibility Study
regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector
of the Danube and Complementary Studies - FAST DANUBE

Initial Options Simulation Modelling Report

Prepared for
Galati Lower Danube River Administration, A. A.

Report number: HRO/029/R/20180413
Apr'18

ch2m.

Halcrow România srl
A CH2M HILL Company
str. Carol Davila, nr.85
Cam. A, Etaj 2, 050453
sector 5, Bucuresti, Romania
T +40 311 065 376
F +40 311 034 189
www.ch2m.com



THE FAST DANUBE PROJECT IS CO-FINANCED BY THE EUROPEAN UNION'S CONNECTING EUROPE FACILITY**
***THE SOLE RESPONSIBILITY OF THIS PUBLICATION LIES WITH THE FAST DANUBE CONSORTIUM. THE EUROPEAN UNION IS NOT RESPONSIBLE
FOR ANY USE THAT MAY BE MADE OF THE INFORMATION CONTAINED THEREIN.



Complementing the Feasibility Study
regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector
of the Danube and Complementary Studies - FAST DANUBE

Addendum Report Method Statement

Prepared for
Lower Danube River Administration, A. A.

Report number: HRO/027/R/20171222
Mar'18

ch2m.

Halcrow România srl
A CH2M HILL Company
str. Carol Davila, nr.85
Cam. A, Etaj 2, 050453
sector 5, Bucuresti, Romania
T +40 311 065 376
F +40 311 034 189
www.ch2m.com



THE FAST DANUBE PROJECT IS CO-FINANCED BY THE EUROPEAN UNION'S CONNECTING EUROPE FACILITY**
***THE SOLE RESPONSIBILITY OF THIS PUBLICATION LIES WITH THE FAST DANUBE CONSORTIUM. THE EUROPEAN UNION IS NOT RESPONSIBLE
FOR ANY USE THAT MAY BE MADE OF THE INFORMATION CONTAINED THEREIN.



THE FAST DANUBE PROJECT IS CO-FINANCED BY THE EUROPEAN UNION'S CONNECTING EUROPE FACILITY**
***THE SOLE RESPONSIBILITY OF THIS PUBLICATION LIES WITH THE FAST DANUBE CONSORTIUM. THE EUROPEAN UNION IS NOT RESPONSIBLE
FOR ANY USE THAT MAY BE MADE OF THE INFORMATION CONTAINED THEREIN.



Complementing the Feasibility Study
regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector
of the Danube and Complementary Studies - FAST DANUBE

Mathematical Models Report / Calibration / Validation

Prepared for
Lower Danube River Administration, A. A.

Report number: HRO/027/R/20171222
Dec'17

ch2m.

Halcrow România srl
A CH2M HILL Company
str. Carol Davila, nr.85
Cam. A, Etaj 2, 050453
sector 5, Bucuresti, Romania
T +40 311 065 376
F +40 311 034 189
www.ch2m.com



THE FAST DANUBE PROJECT IS CO-FINANCED BY THE EUROPEAN UNION'S CONNECTING EUROPE FACILITY**
***THE SOLE RESPONSIBILITY OF THIS PUBLICATION LIES WITH THE FAST DANUBE CONSORTIUM. THE EUROPEAN UNION IS NOT RESPONSIBLE
FOR ANY USE THAT MAY BE MADE OF THE INFORMATION CONTAINED THEREIN.

Feasibility Study
regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector
of the Danube and Complementary Studies - FAST DANUBE

Preliminary Report

Prepared for
Lower Danube River Administration, A. A.

Report number: HRO/003/R/20170317
Oct'17

ch2m.

Halcrow România srl
A CH2M HILL Company
str. Carol Davila, nr.85
Cam. A, Etaj 2, 050453
sector 5, Bucuresti, Romania
T +40 311 065 376
F +40 311 034 189
www.ch2m.com



THE FAST DANUBE PROJECT IS CO-FINANCED BY THE EUROPEAN UNION'S CONNECTING EUROPE FACILITY**
***THE SOLE RESPONSIBILITY OF THIS PUBLICATION LIES WITH THE FAST DANUBE CONSORTIUM. THE EUROPEAN UNION IS NOT RESPONSIBLE
FOR ANY USE THAT MAY BE MADE OF THE INFORMATION CONTAINED THEREIN.

Project reports

FAST DANUBE

Complementing the Feasibility Study
regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector
of the Danube and Complementary Studies - FAST DANUBE

First campaign & measurements

Prepared for
Lower Danube River Administration, A. A.

Report number: HRO/006/R/20170712
12 July 2017

ch2m.

Halcrow România srl
A CH2M HILL Company
str. Carol Davila, nr.85
Cam. A, Etaj 2, 050453
sector 5, Bucuresti, Romania
T +40 311 065 376
F +40 311 034 189
www.ch2m.com



THE FAST DANUBE PROJECT IS CO-FINANCED BY THE EUROPEAN UNION'S CONNECTING EUROPE FACILITY**
***THE SOLE RESPONSIBILITY OF THIS PUBLICATION LIES WITH THE FAST DANUBE CONSORTIUM. THE EUROPEAN UNION IS NOT RESPONSIBLE
FOR ANY USE THAT MAY BE MADE OF THE INFORMATION CONTAINED THEREIN.

Feasibility Study
regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector
of the Danube and Complementary Studies - FAST DANUBE

FINAL

Final Report

Prepared for
Lower Danube River Administration, A. A.

Report number: HRO/003/R/20170317
31 March 2017

ch2m.

Halcrow România srl
A CH2M HILL Company
str. Carol Davila, nr.85
Cam. A, Etaj 2, 050453
sector 5, Bucuresti, Romania
T +40 311 065 376
F +40 311 034 189
www.ch2m.com

Project reports



Technical Assistance for Revising and Complementing the Feasibility Study regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and Complementary Studies - FAST DANUBE



Technical Assistance for Revising and Complementing the Feasibility Study regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and Complementary Studies - FAST DANUBE

Gap Analysis on Biodiversity Component

For the Project
"Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and Complementary Studies - FAST DANUBE"

Beneficiary
Galati Lower Danube River Administration, A. A.

Reference number: [HRO/033/R/20180612](#)

August 2018



Str. Carol Davila, nr.85
Sector 5, Bucuresti, Romania



Technical Assistance for Revising and Complementing the Feasibility Study regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and Complementary Studies - FAST DANUBE

Improvement of Navigation Conditions Options Appraisal, Multi-Criteria Analysis

Galati Lower Danube River Administration, A. A.

Report number: [HRO/R/20180907](#)
Sep'18



Technical Assistance for Revising and Complementing the Feasibility Study regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and Complementary Studies - FAST DANUBE

Water Framework Directive Gap Analysis Report

Prepared for
Galati Lower Danube River Administration, A. A.

Report number: [HRO/035/R/20180727](#)
August 2018



Halrow Romania srl
str. Carol Davila, nr.85
Cam. A, Etaj 2, 050453
sector 5, Bucuresti, Romania
T +40 311 065 376
F +40 311 034 189
www.jacobs.com



Technical Assistance for Revising and Complementing the Feasibility Study regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and Complementary Studies - FAST DANUBE

Revised Options Simulation Modelling Report

Prepared for
Galati Lower Danube River Administration, A. A.

Report number: [HRO/031/R/20180615](#)
Aug'18



Halrow Romania srl



Technical Assistance for Revising and Complementing the Feasibility Study regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and Complementary Studies - FAST DANUBE

Technical Models Report Calibration / Validation

Prepared for
Galati Lower Danube River Administration, A. A.

Report number: [HRO/027/R/20171222](#)
Dec'17



Technical Assistance for Revising and Complementing the Feasibility Study regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and Complementary Studies - FAST DANUBE

Barge Navigation Study – SHIPMA Modelling Demonstration Report

Prepared for
Galati Lower Danube River Administration, A. A.

Report number: [HRO/R/20180924](#)
Sep'18



Halrow Romania srl
str. Carol Davila, nr.85
Cam. A, Etaj 2, 050453
sector 5, Bucuresti, Romania
T +40 311 065 376
F +40 311 034 189
www.ch2m.com



Technical Assistance for Revising and Complementing the Feasibility Study regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and Complementary Studies - FAST DANUBE

FIRST ISSUE

River Morphological & Sediment Transport Study – Overview Report

Prepared for
Galati Lower Danube River Administration, A. A.

Report number: [HRO/R/20180911](#)
Sep'18

FIRST ISSUE



Technical Assistance for Revising and Complementing the Feasibility Study regarding the Improvement of Navigation Conditions on the Romanian-Bulgarian Common Sector of the Danube and Complementary Studies - FAST DANUBE

Traffic Study Benefits Appraisal Report

Prepared for
Galati Lower Danube River Administration, A. A.

Report number: [HRO/R/20180907](#)
Sep'18



Halrow Romania srl
str. Carol Davila, nr.85
Cam. A, Etaj 2, 050453
sector 5, Bucuresti, Romania
T +40 311 065 376
F +40 311 034 189
www.ch2m.com



FINANCED BY THE EUROPEAN UNION'S CONNECTING EUROPE FACILITY
WITH THE FAST DANUBE CONSORTIUM. THE EUROPEAN UNION IS NOT RESPONSIBLE FOR THE CONTENT OF THE INFORMATION CONTAINED THEREIN.



Halrow Romania srl
str. Carol Davila, nr.85
Cam. A, Etaj 2, 050453
sector 5, Bucuresti, Romania
T +40 311 065 376
F +40 311 034 189
www.ch2m.com



FINANCED BY THE EUROPEAN UNION'S CONNECTING EUROPE FACILITY
WITH THE FAST DANUBE CONSORTIUM. THE EUROPEAN UNION IS NOT RESPONSIBLE FOR THE CONTENT OF THE INFORMATION CONTAINED THEREIN.

Addendum Report Method Statement

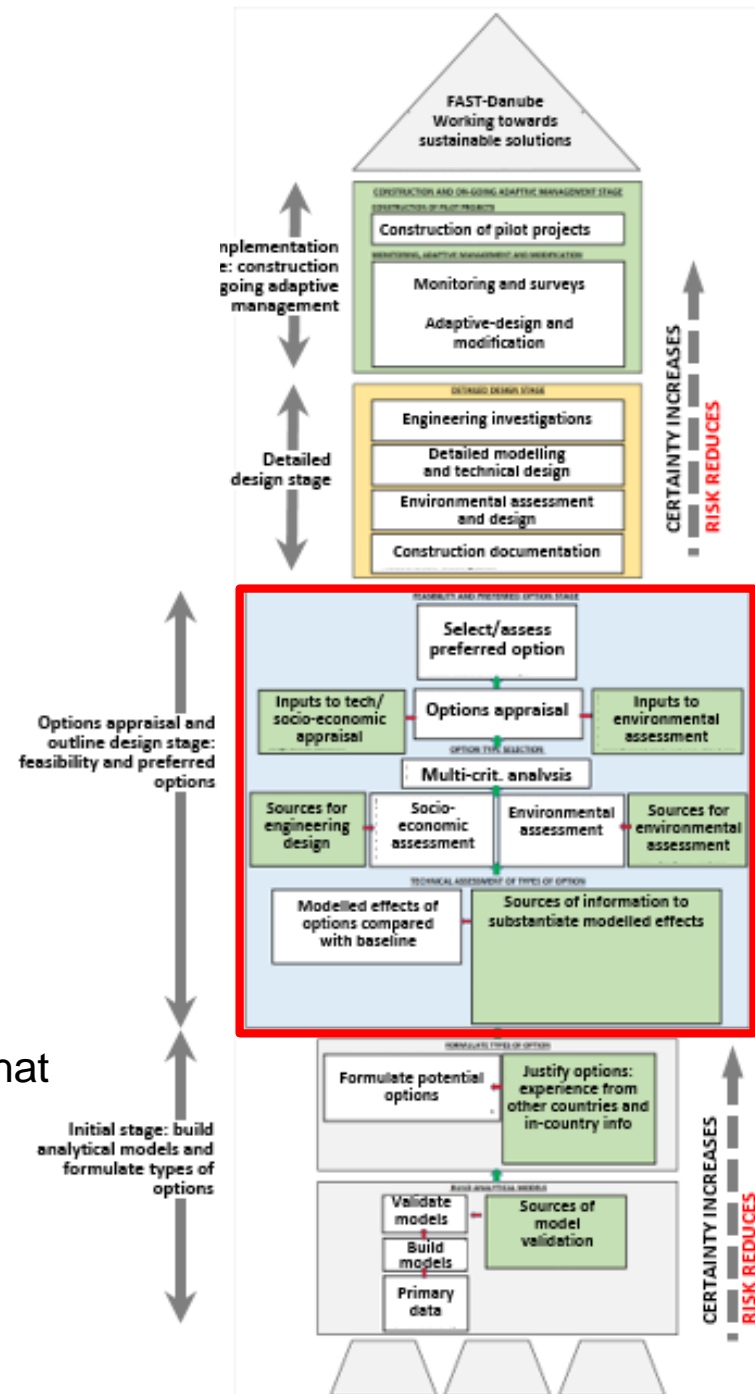
Prepared for
Galati Lower Danube River Administration, A. A.

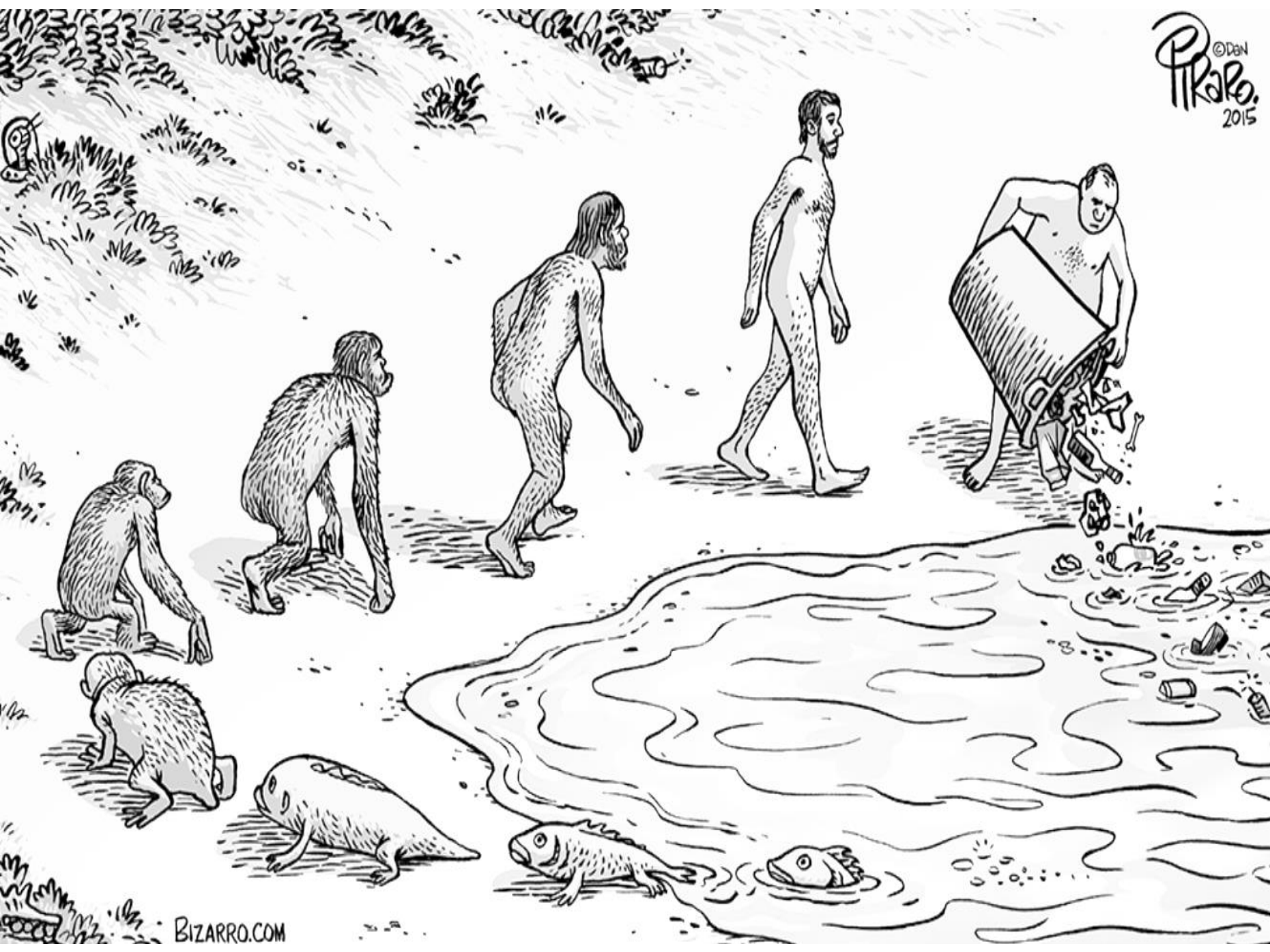
Report number: HRO/027/R/20171222
Mar'18



- **Initial stage:** build analytical models and formulate types of options
- **Options appraisal and outline design stage:** feasibility and preferred options
- **Detailed design stage**
- **Implementation stage:** construction and ongoing adaptive management

As with any project, success relies on adopting an appropriate method set against the project objectives that will develop a solution, from inception to implementation, in a way that progressively reduces the project risks (uncertainties). Risks can be associated with technical feasibility, environmental acceptability, economic viability, affordability, constructability, etc.





<i>Time</i>	<i>Topic</i>	<i>Responsible</i>
09:00 – 09:30	<i>Registration / Coffee</i>	<i>All</i>
WORKSHOP ON «Options Appraisal / Selection for FAST DANUBE project»		
09.30 – 9:45	Introduction: <ul style="list-style-type: none"> – Welcome – H&S moment – Project status 	Mr. Dan TARARA Mr. Romeo SOARE
09.45 – 11.00	Session 1: <ul style="list-style-type: none"> – Initial option preferences, morphological (Prof Colin Thorne via skype) – Revised options, modelling / engineering / CBA – Environmental studies – Q&A 	Mr. Paul RAYNER Mr. Damian DEBSKI Ms. Roxana DORNEANU Ms. Charlotte HANDY
11.00 – 11.30	<i>Coffee break</i>	
11.30 – 13.00	Session 2: <ul style="list-style-type: none"> – Multi-criteria analysis: introductory session 	Mr. Dan TARARA Mr. Paul RAYNER Ms. Roxana DORNEANU Ms. Charlotte HANDY
13.00 – 13.45	<i>Lunch</i>	
13.45 – 15.30	Session 3: <ul style="list-style-type: none"> – Multi-criteria analysis: interactive session 	Mr. Dan TARARA Mr. Paul RAYNER Ms. Roxana DORNEANU Ms. Charlotte HANDY
15.30 – 16.00	Session 4: <ul style="list-style-type: none"> – Consensus view on long term sustainable options 	
16.00	Closing statement	Mr. Romeo SOARE