

# FAIRway Danube II Next step towards Good Navigation Status on the Danube (twinned project)

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# **Report on Good Navigation Status**

Status 2022





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## Abbreviations

HNWL	Highest Navigable Water Level							
LNWL	Low Navigable Water Level							
GNS	Good Navigation Status							
FRMMP	P Fairway Rehabilitation and Maintenance Master Plan for the Danube and its navigable tributaries							

## 1. Executive summary

These Reports on Good Navigation Status (GNS) illustrate the status of the GNS "hard" and "soft" components in the Danube riparian countries, thus monitoring the implementation status of the TEN-T Regulation (EU) 1315/2013 as well as the Fairway Rehabilitation and Maintenance Master Plan for the Danube and its navigable tributaries as it was endorsed by a large majority of the Danube Transport Ministers in December 2014. Yearly updates are foreseen to provide the necessary information. This report provides an overview of the status of the selected GNS components in 2022.

#### Status of GNS "hard" components

The year 2022 was characterised by unfavourable hydrological conditions in particular during the second half of the year. Already in spring, the defined low navigable water level was not reached on large parts of the Danube for several days, but water levels dropped significantly as of July on all parts of the Danube. On the Lower Danube, historically low water levels were recorded at several gauges for multiple days, especially in August and September. The hydrological conditions only improved in December 2022.

With a few exceptions on the Upper Danube, fairway conditions along the entire Danube were therefore significantly worse than in the previous year. Especially on the Hungarian and the Lower Danube, the required 2.50 m fairway depth were only reached on about 60-75% of the year. The worst nautical bottlenecks in 2022 were on the Hungarian stretch of the Danube (bottlenecks Nyergesújfalu and Solt), the Croatian-Serbian border stretch (Mohovo) and on the Romanian-Bulgarian stretch of the Danube (bottlenecks Belene and Vardim). In the period July-August, navigation in the Svishtov area (BG) was de facto suspended for more than a month.



Fairway availability at critical locations along the Danube 2022

\* No data from Germany was available at the time the graphic was created.

The chart provides a status overview of the most important critical locations on the Danube in 2022. For each critical location, the figure illustrates the situation regarding fairway availability (inner circle) in relation to reference water levels (outer circle). The maintenance target is to provide fairway depths equal to or exceeding 2.5 m on at least as many days per year as the statistical Low Navigable Water Level (LNWL). This situation corresponds to the inner blue circle reaching the level of the outer dark brown circle. In 2022, this maintenance target was not achieved in several critical locations along the Danube.

It is also important to include depths of just under 2.5 m when interpreting the status of critical locations. These allow for a slightly reduced level of navigability although not reaching a depth of 2.5 m. On some

sections of the fairway depths of 2.4 m or 2.3 m (light-red colour in the inner circle) were available on some of the days.

#### Status of GNS "soft" components

Since 2015 considerable investments in rehabilitation and maintenance equipment have been initiated by almost all Danube riparian countries with the support of EU co-financing in order to improve the technical capacities of the respective waterway administrations. Especially from 2018 to 2022 all waterway administrations along the Danube procured gauging stations, surveying and/or marking vessels and/or dredging equipment. At the same time, some countries continue to fail in securing sufficient national yearly budgets for the waterway authorities for the necessary operative maintenance and rehabilitation measures to provide reliable fairway conditions.

In 2022, the worst navigational bottlenecks were situated on the Hungarian and the Lower Danube (RO/BG stretch). Hungary has not carried out maintenance dredging for many years, there is no framework contract for dredging and the waterway authorities have no dredging equipment at their disposal. In Romania, maintenance dredging was carried out in good time using in-house equipment and by an external contractor. In Bulgaria, no operational budget was available to the waterway authority IAPPD to commission a new framework contract for maintenance dredging. It was not until August 2022 that the Bulgarian Ministry of Transport approved an emergency budget for dredging works for the waterway administration. At this point, it was only possible to limit the effects of the low water period, also with the support of the Romanian waterway administration AFDJ with their in-house equipment.

The year 2022 has again demonstrated that the reliable allocation of sufficient operational budgets remains one of the biggest issues for the waterway administrations.

## 2. Introduction

When the "Fairway Rehabilitation and Maintenance Master Plan for the Danube and its navigable tributaries" (FRMMP) was adopted in 2014 it was agreed among the Danube riparian states that its implementation status should be monitored by so-called "National Action Plans". Between 2015 and 2021 such National Action Plans were elaborated at least once a year. The present "Report on Good Navigation Status" is a further development of these National Action Plans and monitors not only the implementation of the FRMMP, but also the riparian states' compliance with the Good Navigation Status required by the TEN-T Regulation.

#### 2.1. Definition of Good Navigation Status

The TEN-T Regulation (EU) 1315/2013 requires that a "Good Navigation Status" (GNS) has to be achieved (and thereafter preserved) by 31 December 2030 according to article 38 of the Regulation, while respecting the applicable environmental law. A definition of the GNS was not provided by the Regulation. The following definition of the GNS concept was therefore developed as part of the "Study on support measures for the implementation of the TEN-T Core Network related to sea ports, inland ports and inland waterway transport, LOT 3 – Good Navigation Status", which was commissioned by the European Commission, DG MOVE, nd resulted in 2018 in "Guidelines towards achieving a Good Navigation Status", among other things:

## "Good Navigation Status (GNS) means the state of the inland navigation transport network, which enables efficient, reliable and safe navigation for users by ensuring minimum waterway parameter values and levels of service".

Apart from the physical waterway infrastructure, GNS has to be considered in the wider socio-economic scope of waterway management. Thus, to achieve and maintain GNS, both "hard" and "soft" components must be taken into account as illustrated by the following scheme:



Figure 1: Scheme of the GNS Process (source: Guidelines towards achieving a Good Navigation Status, 2018, Directorate-General for Mobility and Transport Directorate D Waterborne)

The GNS "hard" components relate to the physical waterway infrastructure as a direct output of waterway management. Indicators for the "hard" components are measurable parameters which describe the physical dimensions of the navigation channel in rivers, canals and lakes (e.g. depth) and of locks, ship lifts and bridges, as well as their availability over time (e.g. closures).

The GNS "soft" components relate to management aspects of both infrastructure (e.g. fairway maintenance) and traffic (e.g. RIS), as well as the availability of wider facilities along waterways and in ports (e.g. mooring places, waste disposal facilities) which contribute to the Level of Service on and along the waterways. The "Fairway Rehabilitation and Maintenance Master Plan" contains an overview of existing critical waterway sections or locations to be monitored and defines – for each riparian state – the key issues and

remaining needs for action in waterway management, i.e. essentially the needs in relation to the "soft" components of the GNS that concern waterway management. The implementation of the FRMMP is consequently a step towards the realisation of Good Navigation Status.

#### 2.2. Recommended minimum Levels of Service

The Key Performance Indicators (KPIs) for Good Navigation Status include the infrastructure-related minimum requirements according to the TEN-T Regulation which prescribes a minimum CEMT class IV for all waterways, a minimum of 2.50 metre draught for the vessel and a minimum of 5.25 metre height under bridges for navigation. With the still ongoing revision of the TEN-T Regulation and the adoption of related implementing acts these TEN-T minimum standards on draught and bridge clearance will be refined as regards the targets for free-flowing river sections.

The "Guidelines towards achieving a Good Navigation Status" propose to relate any target values for vertical dimensions to reference water levels in the respective river sections, in particular high and low water levels (HNWL and LNWL). This is necessary in order to realistically reflect the natural and statistical fluctuations in water discharge over the course of the year, which mean that the 365-day availability of the target values cannot be guaranteed by reasonable means.

The "Fairway Rehabilitation and Maintenance Master Plan" (FRMMP) adopts the target developed in the NEWADA duo project<sup>1</sup> by the waterway management experts of the Danube region, who defined the recommended minimum Level of Service related to fairway depth (not draught) for the Danube and its navigable tributaries as 2.50m<sup>2</sup> at Low Navigable Water Level<sup>3</sup> (LNWL or ENR / Étia-ge navigable et de regularisation), i.e. on 94% (343 days) of the year, calculated on the basis of the discharge observed over a period of 30 years with the exception of ice periods. This means that 2.50m fairway depth must be guaranteed at least on the days of the year on which the actual water level is equal to or above the statistical Low Navigable Water Level (LNWL). Information on the status of critical locations is only valid in relation to the hydrological conditions in the same period.

In some river sections however, e.g. in Germany, Slovakia and Hungary, this target is not valid, as it is not achievable by stream regulation and maintenance measures due to physical preconditions. This aspect remains valid throughout this document.

The recommended fairway widths for the minimum depth (both based on NEWADA duo) were defined in order to represent a "deep fairway channel" and comprise a range of values for different bend radii for a reference (i.e. the most common) vessel or convoy going downstream in one-way traffic. Higher fairway widths are needed in sharper bends of the waterway, as the drift angle of the respective vessel must be accounted for. The respective widths for which the 2.50m fairway depth target applies are listed in the respective national chapters.

The following target values for vertical dimensions of the waterway are assumed in connection with this report:

- <u>Navigation channel:</u> the target value of 2.50m fairway depth at LNWL according to the FRMMP is monitored until further notice, as this target value takes into account the hydrological conditions of the respective year. The newly refined target values for target values for vertical dimensions for the Rhine-Danube Corridor in accordance with the revised TEN-T Regulation are awaited.
- <u>Bridge clearance:</u> the target value of 5.25m minimum height under bridges in relation to the highest navigable water level is monitored.

#### 2.3. Purpose and scope of the Reports on Good Navigation Status

The present Report on Good Navigation Status shall monitor for each Danube riparian state the status of selected GNS "hard" and GNS "soft" components. Therefore, each country chapter is divided into two sections of the same name – GNS "hard" and GNS "soft" components.

<sup>&</sup>lt;sup>1</sup> NEWADA duo, implemented between 2012 and 2014, was co-funded by the South-East Europe Transnational Cooperation Programme and dealt with integrated waterway management. NEWADA duo assessed current and future maintenance activities as well as the needs to fulfil a common minimum level of service.

 $<sup>^{2}</sup>$  Or the respective target value relevant for the special section (e.g. 2.0 m in Straubing-Vilshofen on the German Danube).  $^{3}$  LNWL = the water level reached or exceeded at a Danube water gauge on an average of 94% of days in a year (i.e. on 343 days) over a reference period of several decades.

#### Selected GNS "hard" components to be monitored:

#### TEN-T minimum requirement availability of the navigation channel:

The monitoring focusses on the most critical navigational bottlenecks, as continuously identified by the waterway administrations and users, as the weakest critical location determines the capacity of the entire country stretch.

The target is to provide a fairway depth exceeding 2.50 m at least on as many days per year as show actual water levels equal to or above the statistical Low Navigable Water Level (LNWL). Therefore, information on the status of critical locations is only valid in relation to the hydrological conditions in the same period. This would correspond to an equal height of the blue columns (availability of 2.50m fairway depth) and the white columns framed in blue (water level equal to or above Low Navigable Water Level) in the fairway availability statistics in the national chapters. It is also important to take the depth classes close to 2.50m into account when interpreting the status of critical locations, as these provide a certain range of navigability although not meeting the 2.50m threshold. Therefore, the number of days with 2.40 or 2.30m fairway depth is displayed additionally.

#### **TEN-T minimum requirement availability of minimum height under bridges** (as of 2024)

#### Selected GNS "soft" components to be monitored:

- Status of and outlook on needed actions according to the updated FRMMP
- **Review of monitoring, rehabilitation and maintenance activities** (as of 2024):
  - The reports will also contain information about the ecological compatibility of maintenance measures, where applicable.
- Status of operational budgets and investments (as of 2024):

Any tables on costs and budgets allow only limited comparison between the riparian states, as the national accounting practices vary (e.g. some countries summarize more activities under "maintenance and rehabilitation" than others). The main purpose is to illustrate the cost and budget development over the years per country and to indicate financing needs.

The Reports on Good Navigation Status are designed as living documents, in a sense that their contents are constantly under review and will be elaborated in order to provide the highest level of transparency and the greatest benefit for the waterway administrations. The selected components to be monitored might thus be amended over time.

The reports shall be updated regularly in order to serve as a proper monitoring and documentation tool as regards the planning of future budgets and activities. Contents for these updates will be provided in the framework of the CEF-financed FAIRway Danube II project for the countries that are project partners (Austria, Slovakia, Hungary, Croatia, Romania, Bulgaria). The remaining Danube riparian countries are integrated via PA1a – Inland Waterways of the European Strategy for the Danube Region and will be asked to contribute data as of 2024. An annual update is planned at the beginning of the year, in which the status of the previous year is described.

The aim is to standardise and simplify the data gathering process as much as possible; the use of electronic support tools, namely the transnational waterway monitoring system WAMOS, is under preparation.

#### 2.4. Environmental compatibility of rehabilitation and maintenance measures

The rehabilitation and maintenance measures and activities monitored within the context of this report (surveying, fairway relocation, dredging and better information) have the character of reversible interventions. Nevertheless, also in the context of waterway maintenance and rehabilitation, official notifications/consultation, mutual agreement or permits from the competent national authorities are required in relation to water law, nature conservation law and (in some countries) national park law.

The authorities responsible for issuing these environmental permits comply with the goals of the legal instruments of the European Union, such as the Water Framework Directive 2000/60/EC (WFD) or the Environmental Impact Assessment Directive (85/337/EEC) and the Habitats Directive (92/43/EEC) in connection with the Birds Directive (2009/147/EC) which form the NATURA 2000 network. Further relevant Directives may be the Strategic Environmental Impact Assessment Directive (2001/42/EC), the Flood Risk Management Directive (2007/60/EC) and the Public Participation Directive (2003/35/EC). Information on (expected) environmental impacts and mitigation measures will be provided, where

#### 2.5. Adoption of Reports on Good Navigation Status

The reports are prepared within the FAIRway Danube II project. The FAIRway Danube II Steering Committee approved the reports for the countries participating in the project (Austria, Slovakia, Hungary, Croatia, Romania and Bulgaria) from a technical point of view. The Steering Group of PA1a is the body responsible for the adoption of chapters of the remaining Danube riparian countries.

## 3. Austria

## 3.1. AT | Monitoring of GNS "hard" components

#### 3.1.1. AT | Status of TEN-T minimum requirement: availability of the navigation channel

**Number of days with fairway depths**  $\geq$  **2.50m at main critical locations 2014-2022** *for a fairway width according to Level of Service 1 (40 - 80m, CEMT class VIb-VIc)* 

Critical location	2014	2015	2016	2017	2018	2019	2020	2021	2022
Wachau	352	323	359	342	294	352	355	333	363
East of Vienna	222	224	326	317	258	326	337	315	343

Number of days with water level ≥ LNWL at main critical locations 2014-2022

Critical location	Reference gauges	2014	2015	2016	2017	2018	2019	2020	2021	2022
Wachau	Kienstock + Dürnstein	365	330	355	341	309	361	362	343	361
East of Vienna	Wildungsmauer + Thebenerstraßl	355	310	343	328	274	335	334	317	328

\*Note from hydrological department: Data is operational data and can be subject to change.

The water discharge in the two free-flowing stretches of the Danube was below average in 2022: In six months of the year, individual days were characterised by low water. The water discharge was below mean water on about 85 % of the days of the year. In 2022, the water level at the Wildungsmauer gauge (LNWL at 162 cm) in the free-flowing section east of Vienna fell below the defined low navigable water level on 35 days. At the Kienstock gauge in the free-flowing section of Wachau, the defined low navigable water level (at 164 cm) was not reached on 5 days.



The critical section East of Vienna is currently the most problematic section on the Austrian Danube stretch.

In the free-flowing section Wachau, one ford in particular ("Weißenkirchen") determines the availability of the navigation channel.



3.1.2. AT | Status of TEN-T minimum requirement: availability of minimum height under bridges

Important remark: minimum height under bridges will be delivered as of Report on Good Navigation Status concerning the year 2023.

### 3.2. AT | Monitoring of GNS "soft" components

#### 3.2.1. AT | Status of and outlook on needed actions according to the updated FRMMP

AT 01: Support the im integration of the post	provement of the system for 1 ition data into Inland ECDIS as	remote monitoring of the buoy position, and suser information							
Status and next steps (incl. timing):	The system for remote monitor repeated failures with indiv manufacturer. As soon as this be distributed via the ECDIS.	oring of the buoy position is implemented but has idual buoys, which must be repaired by the problem has been resolved, the information will							
AT 02: Support the fu (WAMS)	rther development of the nation	onal waterway asset management system							
Status and next steps (incl. timing):	Currently, no major changes a	re envisaged.							
AT 03: Support acquis	ition of modern pusher for ef	ficient marking operations							
Status and next steps (incl. timing):	The new pusher "Bad Deutsch	-Altenburg" was delivered in summer 2023.							
AT 04: Set-up and test	new, flexible and adaptive in	frastructure elements under real life							
conditions in order to	ensure and improve navigabi	lity at extreme low water levels							
Planned activities:	FAIRway Danube II project: Pilot operation to test flexible infrastructure elements in the area east of Vienna; barges will be placed at critical locations to improve navigability during low water periods								
Environmental relevance of planned activities:	What are the main expected environmental impacts?	No permanent environmental impacts are expected. No Natura 2000 permit is required; the national park exception permit was received; the permit under water law is still pendig, as a precondition the safe anchoring of the barges must be ensured, further calculations were necessary.							
	Which measures are taken to mitigate these impacts?	No mitigation measures are required.							
	Is water status expected to deteriorate?	No, as the measure is completely reversible.							
(Possible) funding:	Connecting Europe Facility 2 (	CEF 2)							
Status and next steps (incl. timing):	The calculations for safe anchor next low water period.	brage are finalised, barges might be placed in the							
AT 05: Support impro	vement of water level forecas	t							
Planned activities:	FAIRway Danube II project: up	ograde of the Austrian water level forecast							
Environmental relevance of planned activities:	What are the main expected environmental impacts?	none							
(Possible) funding:	Connecting Europe Facility 2 (	[CEF 2]							
Status and next steps (incl. timing):	The tender is planned to be pu	ıblished in spring 2024.							

AT 06: Support custor	ner-friendly processing and dissemination of information, in particular
integration of informa	ation in ECDIS
Status and next steps (incl. timing):	viadonau publishes updated information on water depth in the form of bathymetric Inland ENCs. For critical locations IENCs are updated monthly. No major adaptations are foreseen at the moment.

## 4. Slovakia

## 4.1. SK | Monitoring of GNS "hard" components

4.1.1. SK | Status of TEN-T minimum requirement: availability of the navigation channel

#### Number of days with fairway depths $\ge 2.50$ m at main critical locations 2014-2022

for a fairway width according to Level of Service 1 (targeted minimum fairway widths are 60 to 100 m in Slovakia and on the Slovak-Hungarian border section and 40 to 80 m on the Slovak-Austrian section, CEMT class VIb – VIc)

Critical location	2014	2015	2016	2017	2018	2019	2020	2021	2022
part I. (rkm 1880 – 1863)	365	287	310	304	254	331	337	316	311
part II. (rkm 1810 – 1785)	359	307	338	324	236	302	341	283	266
part III. (rkm 1765 – 1710) including Čenkov	300	223	319	303	224	281	286	282	228

Number of days	with water	level > LNW	l at main cri	itical locations	2014-2022
Number of days	with water		L'at main ci	itical locations	2014-2022

Critical location	Reference gauge	2014	2015	2016	2017	2018	2019	2020	2021	2022
part I. (rkm 1880 – 1863)	Devin	349	294	345	340	324	357	363	350	346
part II. (rkm 1810 – 1785)	Medvedov / Gonyu	348	259	325	326	252	311	319	297	281
part III. (rkm 1765 – 1710) including Čenkov	Sturovo / Komarom	292	288	353	332	259	333	362	338	314

In Slovakia the common Danube stretch with Hungary contains the most critical bottlenecks. In 2022, the most critical bottleneck for navigation was again the location Čenkov (1735,50 – 1733,70; "Nyerges gázló" in HU), where the target fairway depth of  $\geq$  2.50m was achieved on only 228 days. As the riverbed in this area consists not of gravel but rocky bottom, maintenance activities soon reach their limits and only physical intervention could solve the problem.

For the fairway availability statistics for the location Čenkov, please refer to the Hungarian chapter where the corresponding statistics can be found.





4.1.2. SK | Status of TEN-T minimum requirement: availability of minimum height under bridges

Important remark: minimum height under bridges will likely be delivered as of Report on Good Navigation Status concerning the year 2023.

## 4.2. SK | Monitoring of GNS "soft" components

4.2.1. SK | Status of and outlook on needed actions according to the updated FRMMP

SK 01: Secure education	on and provision of welltraine	ed staff in the short, medium and long term							
Status and next steps (incl. timing):	Currently no specific trainings in this field, hiring new employ One surveying vessel will be u	planned. Because of the low interest in working yees is difficult. pgraded.							
SK 02: Support furthe	r development of the existing	waterway management tool (WAMS)							
Planned activities:	Upgrade of WAMS planned wi	thin FAIRway Danube II							
Environmental relevance of planned activities:	What are the main expected environmental impacts?	none							
(Possible) funding:	Connecting Europe Facility 2 (	CEF2)							
Status and next steps (incl. timing):	The procurement procedure for launched by end of November	'he procurement procedure for the upgrade of the SK WAMS System has to be aunched by end of November 2024.							
SK 03: Support cross-border harmonisation of monitoring standards, as well as exchange and synchronisation of data									
Status and next steps (incl. timing):	Currently there are no special Commissions.	activities ongoing in the Transboundary Water							
SK 04: Support acquis reactions) with suitab	ition of up-to-date marking ve le equipment	essel(s) (incl. small speed boat for fast							
Status and next steps (incl. timing):	Currently no procurements of	marking equipment is foreseen.							
SK 05: Support acquis	ition of intelligent marking sy	stem, including AIS AtoNs and virtual buoys							
Support the establish current marking infor	ment of an automated monito rmation	ring system, including the dissemination of							
Status and next steps (incl. timing):	Currently no procurements of	marking equipment is foreseen.							

SK 06: Support acquisition of up-to-date dredging equipment									
Planned activities:	ongoing DaReM Project: Deliv	ery of the following equipment:							
	<ul> <li>Floating platforms wi (3x+3x)</li> <li>Self-discharging non-s</li> <li>Tugboat reconstruction</li> <li>Suction dredging kit (</li> <li>Dump trucks with tan</li> </ul>	th a hydraulic excavator on a crawler chassis self-propelled push boats (2x) on (1x) 1x) dem trailers (3x)							
Environmental relevance of planned activities:	What are the main expected environmental impacts? Which measures are taken to mitigate these impacts?	If dredging occurs in or near protected areas such as Natura 2000 sites and if the dredged material is stored on the banks of the Danube and these sites are located in protected areas, additional permits from the competent organisations are required. Usually, the only actual permit that is needed for dredging activities is issued by the Transport Authority, who publishes NtS for the time period of any dredging works.							
	Is water status expected to deteriorate?	ls water status expected to no deteriorate?							
(Possible) funding:	Operational Programme Integ	rated Infrastructure 2014-2020							
Status and next steps (incl. timing):	The equipment should be del trucks are expected by Februa	ivered by end of the year 2023, the three dump ry 2024.							
SK 07: Secure education long term	on and provision of welltraine	ed staff in the short, medium and							
Status and next steps (incl. timing):	Pilot operation and training petthe end of 2023.	eriod for floating platforms with excavators until							
SK 08: Support impler Management System	nentation of semiautomated r	narking plans based on a common Fairway							
Status and next steps (incl. timing):	Currently no activities ongoin	g/planned.							
SK 09: Support custon	ner-friendly processing and d	issemination of information							
Support the upgrade of	of IENCs with bathymetric info	ormation							
Status and next steps (incl. timing):	Currently no activities ongoin	g/planned.							
SK 10: Support acquis	ition of sensors to measure ve	ertical bridge clearance							
Status and next steps (incl. timing):	For the 6 Slovak bridges (with between Slovakia and Hungar published on EuRIS portal.	out bridge at Gabčíkovo) as well as the 5 bridges y real-time bridge clearance information is							

## 5. Hungary

### 5.1. HU | Monitoring of GNS "hard" components

5.1.1. HU | Status of TEN-T minimum requirement: availability of the navigation channel

In 2022, the target fairway depth of  $\ge$  2.50m was not reached at several critical locationes along the entire Hungarian Danube, in some cases for more than 150 days. Three of the most critical locations were Nyergesújfalu, Dömös alsó and Solt with only 266, 208 and 223 days with fairway depths of  $\ge$  2.50m.

#### Section rkm 1811 - 1708

#### Number of days with fairway depths $\ge 2.50$ m at main critical locations 2014-2022

Fairway width (range of values accounts for different curve radii): 60 to 100 m on the Slovak - Hungarian border section (Nyergesújfalu), CEMT class VIb – VIc

Critical location	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Nyergesújfalu</b> critical location with <b>60 meters</b> wide fairway	307	244	326	327	245	309	330	301	266
<b>Nyergesújfalu</b> critical location with <b>100</b> <b>meters</b> wide fairway	256	213	293	304	215	282	286	278	227

#### Number of days with water level $\geq$ LNWL at main critical locations 2014-2022

Critical location	Reference gauge	2014	2015	2016	2017	2018	2019	2020	2021	2022
Nyergesújfalu	Esztergom	360	294	349	336	261	332	361	335	307





In the critical location Nyergesújfalu or Nyerges gázló (1735,50 – 1733,70; "Čenkov" in SK) the consists not of gravel but rocky bottom and maintenance activities soon reach their limits; only physical intervention could solve the problem. Whenever water levels drop this location becomes a major obstacle for navigation.

#### Number of days with fairway depths $\geq$ 2.5m at main critical locations 2014-2022

Fairway width (range of values accounts for different curve radii): 80 to 120 m Hungary, CEMT class VIb – VIc

Critical location	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Göd</b> critical location with <b>80 meters</b> wide fairway	286	208	299	266	229	296	291	293	226
<b>Dömös alsó</b> critical location with <b>120</b> <b>meters</b> wide fairway	264	205	279	290	221	277	281	284	208
Budafok critical location with 60 meters wide fairway	319	229	310	257	244	296	322	356	245

Number of days with water level  $\ge$  LNWL at main critical locations 2014-2022

Critical location	Reference gauges	2014	2015	2016	2017	2018	2019	2020	2021	2022
Dömös- alsó	Nagymaros	365	322	357	362	302	355	366	359	343
Göd	Budapest	357	320	357	352	304	362	366	359	355



#### Section rkm 1,560 - 1,433

Number of days with fairway depths  $\geq$  2.5m at main critical locations 2014-2022

Fairway width (range of values accounts for different curve radii): 80 to 120 m Hungary, CEMT class VIb - VIc

Critical location	2014	2015	2016	2017	2018	2019	2020	2021	2022
<b>Solt</b> critical location with <b>60 meters</b> wide fairway	360	277	344	330	254	322	285	274	223
Solt critical location with 100 meters wide fairway	232	210	277	284	208	263	235	236	178

Number of days with water level  $\ge$  LNWL at main critical locations 2014-2022

Critical location	Reference gauges	2014	2015	2016	2017	2018	2019	2020	2021	2022
Solt	Dunaföldvár	358	270	339	326	251	319	340	309	276



Even after fairway widths were reduced to 60m 2.50m fairway depth were only achieved for 223 days in the navigation channel.



DUNAFOLDVAR: Waterlevel (1.1.2022 - 31.12.2022)

5.1.2. HU | Status of TEN-T minimum requirement: availability of minimum height under bridges

Important remark: Hungary does not yet calculate and publish information on the minimum height under bridges. Within the FAIRway Danube II project this task will be developed; information on compliance with this TEN-T minimum requirement will be published as soon as possible.

#### 5.2. HU | Monitoring of GNS "soft" components

5.2.1. HU | Status of and outlook on needed actions according to the updated FRMMP

HU 01: Support acquisition of up-to-date multi-beam sensor(s)							
Planned activities:	FAIRway Danube II: Procurements of 1 new surveying vessel, 1 upgraded surveying vessel, 1 aquatic drone						
Environmental relevance of planned activities:	What are the main expected none environmental impacts?						
(Possible) funding:	Connecting Europe Facility 2 (	CEF 2)					
Status and next steps (incl. timing):	Procurements are to be launched by January 2025.						
HU 02: Support the replacement of the existing signalisation with AIS AtoNs to remotely control the buoys' positioning							

Status and next steps (incl. timing):	In the framework of the already concluded project "Improving the Hungarian marking system" (HUMARK) the following equipment was procured and is since in operation:					
	<ul> <li>3 new marking vessels</li> <li>3 high-speed patrol boats</li> <li>115 intelligent light buoys</li> <li>210 pcs new floating unlighted buoys</li> <li>55 light bank markers</li> <li>300 new bank marks and navigation control marks</li> <li>400 new river km marks</li> </ul>					
	No further activities are planned at the moment.					
HU 03: Support furthe	er development of the existing waterway management tool (WAMS)					
Planned activities:	Further development of WAMS within FAIRway Danube II project					
Environmental relevance of planned activities:	What are the main expected   none     environmental impacts?					
(Possible) funding:	Connecting Europe Facility 2 (CEF2)					
Status and next steps (incl. timing):	Procurement is to be launched by January 2025.					
HU 04: Support acquis	sition of modern, multi-functional ice breakers					
Status and next steps (incl. timing):	Currently it is not clear how the equipment could be financed. No ongoing activities.					
HU 05: Supports the a	llocation of sufficient budget to allow for dredging interventions					
Status and next steps (incl. timing):	No specific activities planned at the moment.					
HU 06: Support custor	mer-friendly processing and dissemination of information, including IENCs					
Status and next steps (incl. timing):	No specific activities planned at the moment.					
HU 07: Support the ca modelling)	lculation of vertical bridge clearance (e.g. laser scanner and hydrologic					
Planned activities:	FAIRway Danube II: Procurement of 6 bridge clearance sensors; information should be published on EuRIS Portal.					
Environmental relevance of planned activities:	What are the main expected environmental impacts?     None					
(Possible) funding:	Connecting Europe Facility 2 (CEF2)					
Status and next steps (incl. timing):	Procurement is to be launched by January 2025.					

## 6. Croatia

### 6.1. HR | Monitoring of GNS "hard" components

6.1.1. HR | Status of TEN-T minimum requirement: availability of the navigation channel

#### <u>Danube</u>

## **Number of days with fairway depths** ≥ **2.50m at main critical locations 2014-2022** *for a fairway width of 100m (CEMT class VIc)*

Critical location	2014	2015	2016	2017	2018	2019	2020	2021	2022
Apatin	365*	365*	366*	363*	365*	365*	366	365	365
Mohovo	-	-	-	-	-	-	-	306	237

\*Data provided by PLOVPUT

The Danube stretch in Croatia is characterised by sufficient depths but, due to river morphology (large number of sandbars and islands), the achieved fairway width varies. Exception is the critical location of Mohovo with rocky river bottom which represents the major limiting bottleneck of the Croatian-Serbian Danube stretch. The maintenance measures consist solely of limiting the width of the fairway; only physical intervention could solve the problem.

#### Number of days with water levels ≥ LNWL at main critical locations 2014-2022

Critical location	Reference gauges	2014	2015	2016	2017	2018	2019	2020	2021	2022
Apatin *	Apatin	365*	315*	353*	352*	266*	331*	366	319	304

\*Data provided by PLOVPUT

#### VODOMJER MOHOVO: Waterlevel (1.1.2022 - 31.12.2022)



## 6.1.2. HR | Status of TEN-T minimum requirement: availability of minimum height under bridges

Important remark: Croatia does not yet calculate and publish information on the minimum height under bridges. Serbia is calculating and publishing these values; information on compliance with this TEN-T minimum requirement will be published as soon as possible.

## 6.2. HR | Monitoring of GNS "soft" components

6.2.1. HR | Status of and outlook on needed actions according to the updated FRMMP

HR 01: Support retrof	it and acquisition of remotely	controlled aquatic and river drones					
Planned activities:	FAIRway Danube II:						
	<ul> <li>Procurement of 1 aquatic drone with MB sensor</li> <li>Procurement of 1 aeronautical drone with lidar sensor</li> <li>Upgrade of the sensor of 1 surveying vessel</li> </ul>						
Environmental relevance of planned activities:	What are the main expected environmental impacts?     none						
(Possible) funding:	Connecting Europe Facility 2 (	CEF2)					
Status and next steps (incl. timing):	The procurement procedures September 2024.	for the drones is to be launched by the end of					
HR 02: Secure educati	on and provision of well-train	ed staff in the short, medium and long term					
Status and next steps (incl. timing):	Currently no specific trainings	envisaged.					
HR 03: Secure predict	able and sufficient financial m	leans for waterway maintenance					
Status and next steps (incl. timing):	Currently no specific activities	envisaged.					
HR 04: Support furthe	er development of the WAMOS	S/WAMS System					
Support acquisition of	f adequate IT tools (hardware	and software)					
Planned activities:	Further development of WAM	S within FAIRway Danube II project					
Environmental relevance of planned activities:	What are the main expected environmental impacts?	none					
(Possible) funding:	Connecting Europe Facility 2 (	CEF2)					
Status and next steps (incl. timing):	The procurement procedure for by the end of September 2024	or the upgrade of the HR WAMS is to be launched					
HR 05: Implementatio	n of monitoring activities tha	t will provide sufficient data for the					
development of techn	ical documentation in order to	o resolve navigational bottlenecks					
Planned activities:	Building a stable database for navigational bottlenecks and b ecological data	modelling different scenarios of resolving building a database (incl. GIS database) of					
Environmental relevance of planned activities:	What are the main expected environmental impacts?	none					
(Possible) funding:	Connecting Europe Facility						
Status and next steps (incl. timing):	Within the ongoing Preparing FAIRway 2 project MMPI has contracted services to monitor the hydrological, hydraulic and morphological characteristics of the Danube (hydrographic measurements, measurement of velocities and sediment transport, etc.) and develop an inventory of biodiversity components of the Croatian-Serbian common section of the Danube (fish sampling, habitat monitoring, establishment of a GIS database). The activity will be continued in 2024, providing data for the future modelling.						

(capital dredging on critical locations in the upcoming period of 10 years)							
Investigate "working with nature" approaches for the resolution of navigational bottlenecks							
Planned activities:	FAIRway Danube II pilot operation of flexible infrastructure elements as an approach for nature based solutions in waterway management: Placement of barges at the critical point "Drau estuary" to test the suitability of the approach						
Environmental relevance of planned activities:	What are the main expected environmental impacts? Which measures are taken	No permanent environmental impacts are expected. It is not yet entirely clear what kind of permits are needed for placing the barges. Ensuring safe anchorage of the barges and obtaining necessary permits will be part of the FAIRway Danube II project. No mitigation measures necessary.					
	to mitigate these impacts?						
	Is water status expected to deteriorate?	No, the measure is completely reversible.					
(Possible) funding:	Connecting Europe Facility 2 (	CEF2)					
Status and next steps (incl. timing):	Start of the tender procedure planned for early 2024.						
HR 07: Support the fun continued quality imp	rther development of the wate rovements)	er level forecast (geographical extension and					
Status and next steps (incl. timing):	Currently no activities planned	d.					

HR 06: Development of adequate technical solutions in order to improve fairway stability

6.2.2. HR | Other waterway management activities that were not declared as needed actions in the FRMMP

#### Upgrade of the marking system on Sava/Drava:

- 2x multifunctional marking vessels to be operated on Sava and Drava (delivery planned in first half of 2024)
- 80 AtoNS already delivered, upgrade of AIS system completed

## Delivery of 20 buoys with fixed sensors in the framework of the FAIRway Danube II project.

The procurment will start in autumn 2024.

## 7. Romania

## 7.1. RO | Monitoring of GNS "hard" components

7.1.1. RO | Status of TEN-T minimum requirement: availability of the navigation channel

The Administration of the Lower Danube (AFDJ) and the Administration of the Navigable Canals (ACN) are responsible for fairway maintenance, rehabilitation and upgrade. Since AFDJ is currently in the process of recalculating the Low Navigable Water Level at certain critical locations, the achievement of 2.50 m fairway depth in relation to the number of days above Low Navigable Water Level is not always correct.

#### <u>Danube</u>

**Number of days with fairway depths**  $\ge$  **2.50m at main critical locations 2014-2022** *for a fairway width of 80m to 100m (CEMT class VII)* 

Critical location	2014	2015	2016	2017	2018	2019	2020	2021	2022
Bechet (100m fairway width)	365	285	351	357	317	342	366	336	323
Corabia (100m fairway width)	365	272	352	355	317	308	362	326	297
Turcescu (100m fairway width)	345	260	301	312	253	265	359	326	316
Caragheorghe (100m fairway width)	-	-	-	-	-	-	-	323	275
Cochirleni (80m fairway width)	319	236	257	200	201	225	302	316	270
Prut (80m fairway width, depth > 7.32m)	365	308	338	365	318	350	366	363	365
Tulcea (100m fairway width, depth > 7.32m)	365	321	359	365	329	365	366	365	365

#### Number of days with water levels $\geq$ LNWL at main critical locations 2014-2022

Critical location	Reference gauges	2014	2015	2016	2017	2018	2019	2020	2021	2022
Bechet	Bechet	365	277	348	309	322	297	350	314	255
Corabia	Corabia	365	258	348	285	317	265	328	304	244
Turcescu	Calarasi	365	279	348	330	290	276	342	307	246
Cochirleni	Cernavoda	365	295	355	355	301	302	356	323	262
Prut	Galati	365	365	353	353	334	316	358	326	257
Tulcea	Tulcea	365	365	359	350	318	314	362	365	275

In the downstream sector of Calarasi (Caragheorghe and Cochirleni), depths below 2.50m have been encountered since July, amounting to 86 days in the most critical location Cochirleni. In the maritime sector of the Danube the year 2022 showed good navigation conditions. It is noteworthy that in this sector the minimum navigation depth is 7.32m (24 feet).









#### WATERWAY GAUGE CERNAVODA: Waterlevel (1.1.2022 - 31.12.2022)



#### Danube-Black Sea Canal

The Danube Black Sea canals bottom is dredged 1 meter below the Danube River, so for the entire period 2012 – December 2022 fairway depths were over 2.5m on the Danube Black Sea Canal (DBSC) and the Poarta Albă-Midia Năvodari Canal (PAMNC). Between Cernavoda and Agigea locks minimum depths were 7m, which allows maritime ships to access the Basarabi and Medgidia ports.

In the period January –December 2022 there were no restrictions for navigation due to low navigable water levels.

Nevertheless, navigation on navigable canals was restricted or closed due to meteorological conditions as follows:

- Danube-Black Sea Canal: due to fog conditions (60 hours) and due to strong wind conditions (636 hours). In these conditions the measures taken by Romanian Naval Authority were to close the port of Constanta (for DBSC) and port of Midia (for PAMNC) and the measures taken by ACN were to restrict navigation on the canals.
  - 7.1.2. RO | Status of TEN-T minimum requirement: availability of minimum height under bridges

Important remark: Romania does not yet calculate and publish information on the minimum height under bridges. Within the FAIRway Danube II project this task will be developed; information on compliance with this TEN-T minimum requirement will be published as soon as possible.

#### 7.2. RO | Monitoring of GNS "soft" components

7.2.1. RO | Status of and outlook on needed actions according to the updated FRMMP

RO 01: Support acquis possibly drones), to ra	sition of up-to-date sounding o aise the quality of surveying d	equipment, in particular sensors (incl. ata			
Planned activities:	FAIRway Danube II:				
	<ul> <li>AFDJ: Procurement of two aquatic drones (one with MB sensor, one with ADCP)</li> <li>AFDJ: Procurement of one new surveying vessel with MB sensor</li> <li>AFDJ: Upgrade of 4 sensors of the surveying vessels</li> <li>ACN: Procurement of one new surveying vessel with MB sensor</li> </ul>				
Environmental relevance of planned activities:	What are the main expected none environmental impacts?				
(Possible) funding:	Connecting Europe Facility 2 (CEF2)				
Status and next steps (incl. timing):	The procurement procedure for the drones and sensors/vessels needs to be launched by the end of 2024 (different dates for different equipment).				
RO 02: Support acquis sections	sition of additional automatic	gauging stations, especially for critical			
Planned activities:	ACN will upgrade two gauging	stations on the DBSC within FAIRway Danube II			
Environmental relevance of planned activities:	What are the main expected environmental impacts?	none			
(Possible) funding:	Connecting Europe Facility 2 (	CEF2)			
Status and next steps (incl. timing):	The procurement procedure for launched by the end of March	or upgrading the gauging stations needs to be 2024.			
RO 03: Support acquis	sition of up-to-date aerial mor	nitoring device (drone)			
Planned activities:	FAIRway Danube II: procurem (AFDJ)	ent of aeronautical drone with Lidar sensors			
Environmental relevance of planned activities:	What are the main expected environmental impacts?	none			
(Possible) funding:	Connecting Europe Facility 2 (	CEF2)			
Status and next steps (incl. timing):	The procurement procedure for the drone needs to be launched by the end of March 2024.				

RO 04: Support acquis	sition of sensors measuring tu ter	rbidity, sedimentation and chemical				
Planned activities:	FAIRway Danube II:					
	AEDI, nyo gunoment of	160 huges with fixed concern				
	<ul> <li>ACN: procurement of 3 buoys with fixed sensors</li> </ul>					
Environmental	What are the main expected	none				
relevance of planned	environmental impacts?					
(Possible) funding	Connecting Europe Facility 2 (	CEF2)				
Status and next steps	The procurement procedure for	or the drone needs to be launched by the end of				
(incl. timing):	September 2024 (AFDJ) and N	ovember 2024 (ACN).				
RO 05: Support furthe	r development of the existing	waterway management tool (WAMS)				
Planned activities:	Further development of Roma	nian WAMS within FAIRway Danube II				
Environmental relevance of planned activities:	What are the main expected environmental impacts?	none				
(Possible) funding:	Connecting Europe Facility 2 (	CEF2)				
Status and next steps (incl. timing):	The procurement procedure for the end of March 2025.	or the upgrade of WAMS needs to be launched by				
RO 06: Support extens (e.g. wl forecast, calcu	sion of the digital terrain mod lation of LNWL)	el as a basis for planning and other services				
Planned activities:	Within FAST Danube the digital terrain model was developed based on bathymetric surveys, Lidar surveying and shore-side drillings. In the future, this terrain model should be extended and updated, based on new data within the FAST Danube 2 project.					
Environmental relevance of planned activities:	What are the main expected environmental impacts?	none				
(Possible) funding:	Connecting Europe Facility 2 (	CEF2)				
Status and next steps (incl. timing):	Deadline for submission of pr 2024.	oject application FAST Danube 2: end of January				
RO 07: Improve metho	odology for the calculation of	the LNWL and extension to other gauges				
Status and next steps (incl. timing):	The extension of the LNWL to activities.	other gauges is planned, but currently no				
RO 08: Support acquis	ition of (maritime) dredging	equipment				
Status and next steps (incl. timing):	Currently no activities ongoin	<u>z</u> .				
RO 09: Support the tra	ining of specialized personne	el for dredging operations				
Status and next steps (incl. timing):	Two self-propelled (fluvial) d the beginning of 2024 training personnel situation is not favo	redgers will be delivered by the end of 2023. In ing of personnel will be done. In general, the urable.				
RO 10: Support acquis	ition of state-of-the-art vesse	ls equipped with advanced machines to				
Status and novt stone	See below action PO 11					
(incl. timing):	See below action RO 11.					
RO 11: Support acquis	ation of intelligent marking sy	ystem, including AIS AtoNs				
Support the establish	nent of an automated monito mation	ring system, including the dissemination of				
Planned activities:	Romania is partner in the plan for MARking) with which the r be modernised. Project volum	nned DISMAR project (Danube Integrated System narking system on the RO-BG border stretch will e: roughly 10 million EUR. Envisaged duration: 3				

	years. Procurement of signalisation and in case of Romania also a floating not self-propelled pontoon for the maintenance of on-shore signalisation.				
Environmental relevance of planned activities:	What are the main expected environmental impacts?	none			
(Possible) funding:	INTERREG IV-A Romania- Bul	garia Programme 2021 – 2027			
Status and next steps (incl. timing):	The project proposal is under 11.09.2023.	evaluation. Deadline for submission of AF was			
RO 12: Support geogra improvement of the fo	aphical extension of the existi precast quality	ng forecast to further gauges and continuous			
Planned activities:	Procurement of upgraded wl f	orecast within FAIRway Danube II			
Environmental relevance of planned activities:	What are the main expected   none     environmental impacts?				
(Possible) funding:	Connecting Europe Facility 2 (CEF2)				
Status and next steps (incl. timing):	The procurement procedure for the upgrade of the wl forecast needs to be launched by the end of March 2025.				
RO 13: Support custor	ner-friendly processing and d	issemination of information			
Support the upgrade of	of IENCs with bathymetric info	ormation			
Status and next steps (incl. timing):	In summer 2023 the bENC app for the personnel the first 10 b	olication was purchased, after a training period bathymetric ENC cells were created.			
RO 14: Support impro	vement of meteorological info	ormation			
Status and next steps (incl. timing):	Currently no major activities p	blanned.			
RO 15: Support acquis	sition of sensors to measure v	ertical bridge clearance			
Planned activities:	Within FAIRway Danube II: Pr	ocurement of 5 bridge clearance sensors (AFDJ)			
Environmental relevance of planned activities:	What are the main expected environmental impacts?	none			
(Possible) funding:	Connecting Europe Facility 2 (	CEF2)			
Status and next steps (incl. timing):	The procurement is planned to start in summer 2024.				

## 8. Bulgaria

## 8.1. BG | Monitoring of GNS "hard" components

8.1.1. BG | Status of TEN-T minimum requirement: availability of the navigation channel

#### **Number of days with fairway depths** ≥ **2.50m at main critical locations 2014-2022** for a fairway width of 80m (CEMT class VII); very critical locations are marked grey

Critical location rkm from- to	Critical location name	2014	2015	2016	2017	2018	2019	2020	2021	2022
km 569 - km 561	Belene island Milka island Kondur island	337	212	273	220	280	277	340	307	207
km 548 - km 540	Vardim island	360	268	327	316	289	343	363	321	265
km 539 - km 530	Yantra River Giska Island	360	253	306	337	330	343	359	321	290
km 525 - km 520	Batin island	352	246	295	288	285	309	363	312	267
km 458 - km 455	Brashlian island	365	365	313	263	297	329	351	316	270
km 426 - km 420	Kosui island Dunavets island	365	322	366	365	342	318	347	320	295
km 408 - km 399	Popina island	365	311	304	269	293	313	361	342	285

#### Number of days with water levels $\geq$ LNWL at main critical locations 2014-2022

Critical location	Reference gauges	2014	2015	2016	2017	2018	2019	2020	2021	2022
567.00-566.70 – Belene island										
562.00-561.50 – Coundur/ Milka island	Svishtov km 54.300	365	285	348	334	293	298	350	317	262
541.60-541.00 – Vardim island										
538.50-537 – Giska island										
523.80-523.20 – Batin island	Ruse km	265	200	240	220	205	202	250	217	254
475.70-475.30 – Gostin island	495.600	303	200	340	339	295	303	330	517	234
425.90-425.20- Kosui island	Silistra km 375.500	365	293	348	343	288	290	342	310	245

391.60-391.10 – Vetren island					
383.50-382.50 – Chajka island					

Number of days with recorded water levels under LNWL: 105 days (which is 31% of the year 2022). Number of days with below normal water level/below the multiyear average for the day: 277 days (which is 76% of the year).



On 69 days historically low water levels were recorded for that specific day. The lowest water level for Ruse station (-) 72 cm was recorded on 22.08.2022 and 23.08.2022, which is only one centimeter for absolute minimum the measured in 2003. For the Svishtov gauging station, the lowest water level was (-) 29 cm, which was recorded on 20.08.2022, 21.08.2022 and 23.08.2022, bringing us closer to the absolute minimum of (-) 55 cm, measured in 2003.



In 2022, the target fairway depth of 2.50m was achieved only on 207 days for 80m fairway width and on 224 days for 60m fairway width. The most critical bottleneck for navigation was again the section in the Belene Island area (rkm 565.000 – rkm 563.000) with a depth of 19 to 14 dm and a fairway width of 60 m on 141 days.

GAUGE SVISHTOV: Waterlevel (1.1.2022 - 31.12.2022)



8.1.2. BG | Status of TEN-T minimum requirement: availability of minimum height under bridges

Important remark: Bulgaria does not yet calculate and publish information on the minimum height under bridges. Within the FAIRway Danube II project Romania will develop this task for the bridges between Bulgaria and Romania; information on compliance with this TEN-T minimum requirement will be published as soon as possible

#### 8.2. BG | Monitoring of GNS "soft" components

8.2.1. BG | Status of and outlook on needed actions according to the updated FRMMP

BG 01: Support acquis possibly ACDP, MB set	sition of up-to-date monitoring nsor)	g equipment, in particular sensors (incl.						
Planned activities:	New hydrographic equipment will be delivered under the project "Improvement of the navigation conditions on the Danube river through delivery of hydrographic equipment"							
	Within the project FAIRway Danube II: Upgrade of one existing surveying vessel with new sensor							
Environmental relevance of planned activities:	What are the main expected none environmental impacts?							
(Possible) funding:	Operational Programme "Transport and Transport Infrastructure 2014-2020" Connecting Europe Facility 2 (CEF2)							
Status and next steps (incl. timing):	"Improvement of the navigation conditions on the Danube river through delivery of hydrographic equipment" is approved under the OP, procurements are pending.							
	Procurement of the new sensor for the surveying vessel is planned to start by the end of March 2024							
BG 02: Support acquisition of new or upgrade of existing gauging stations								
Planned activities:	Upgrade of 17 gauging stations planned within FAIRway Danube II							
Environmental relevance of planned activities:	What are the main expected none environmental impacts?							
(Possible) funding:	Connecting Europe Facility 2 (CEF2)							
Status and next steps (incl. timing):	The procurement procedure for upgrading the gauging stations needs to be launched by the end of March 2024.							
BG 03: Secure educati	on and provision of well-train	ed staff in the short, medium and long term						
Status and next steps (incl. timing):	No specific action is envisaged at the moment.							
BG 04: Support furthe	BG 04: Support further development of the existing waterway management tool (WAMS)							
Planned activities:	Further development of WAMS within FAIRway Danube II project							
Environmental relevance of planned activities:	What are the main expected environmental impacts?	none						
(Possible) funding:	Connecting Europe Facility 2 (CEF2)							
Status and next steps (incl. timing):	The procurement procedure for upgrading the WAMS needs to be launched by the end of March 2024.							
BG 05: Support acquis	sition of up-to-date self-prope	lled dredging equipment						
Planned activities:	Procurement of dredging equipment							

Environmental relevance of planned activities:	What are the main expected environmental impacts?	none						
(Possible) funding:	(National) Transport Connectivity Programme 2021-2027							
Status and next steps (incl. timing):Bulgarian transport ministry already approved the integration into the current Operational Programme; preparation of feasibility study and technic specification in 2024; start of tender procedure earliest 2025.								
BG 06: Support implementations	mentation of capital dredging	to reduce the number of needed						
Status and next steps (incl. timing):	Apart from maintenance dredging (see below) no capital dredging is foreseen at the moment.							
BG 07: Secure budget	resources for maintenance dr	resources for maintenance dredging operations						
Planned activities:	Framework contract for a total volume of 900,000m3 to be used between 2022 and 2024 is in place (contract expires in 2024 or after the total volume is dredged – whichever comes first)							
Environmental relevance of planned activities:	What are the main expected environmental impacts? Which measures are taken to mitigate these impacts?	No permanent impacts expected. The dredging plan is sent to the Ministry of Environment and Water for basic approval every year. During the year, before actual dredging is performed, EAEMDR notifies the Danube Basin Directorate (an entity inside the Ministry of Environment and Water) about the location of the dredging activities and the area where the sediment will be deposited again. Apart from the Srébarna Biosphere Reserve downstream of Silistra, EAEMDR can carry out dredging in the waterway. Consideration must be given to fish habitats and critical times (especially spawning times) when planning dredging operations.						
	Is water status expected to deteriorate?	no						
(Possible) funding:	State budget							
Status and next steps (incl. timing):	EAEMDR has its own dredging equipment; its use is more cost-effective; usage of own equipment envisaged							
BG 08: Support acquis	ition of intelligent marking sy	ystem, including AIS AtoNs						
Support the establish	ment of an automated monito	ring system, including the dissemination of						
current marking infor	mation							
Planned activities:	EAEMDR is a partner in the planned project DISMAR – Danube Integrated System for MARking in which the marking system on the RO-BG border stretch will be modernised.							
Environmental relevance of planned activities:	What are the main expected environmental impacts?     none							
(Possible) funding:	INTERREG IV-A Romania- Bulgaria Programme 2021 – 2027							
Status and next steps (incl. timing):	The project proposal is under evaluation. Deadline for submission of AF was 11.09.2023.							
BG 09: Support acquisition of state-of-the-art vessel equipped with advanced machines								
Status and next steps (incl. timing):	Currently no further activities	planned.						
BG 10: Secure education and provision of well-trained staff in the short, medium and long term								

Status and next steps (incl. timing):	Currently no activities planned.				
BG 11: Support custor bathymetric IENCs	ner-friendly processing and d	issemination of information, incl.			
Planned activities:	The upgrade of the BG water level forecast is planned within FAIRway Danube II				
Environmental relevance of planned activities:	What are the main expected   none     environmental impacts?				
(Possible) funding:	Connecting Europe Facility 2 (CEF2)				
Status and next steps (incl. timing):	Start of the procurement procedure is not yet defined.				