Activities planned by EAEMDR for 2026 to ensure fairway conditions complying with FRMMP and DC recommendations

Expert Meeting on
Hydrotechnical Issues
Budapest, Hungary
5 March 2026

Executive Agency
EXPLORATION AND MAINTENANCE OF THE DANUBE RIVER

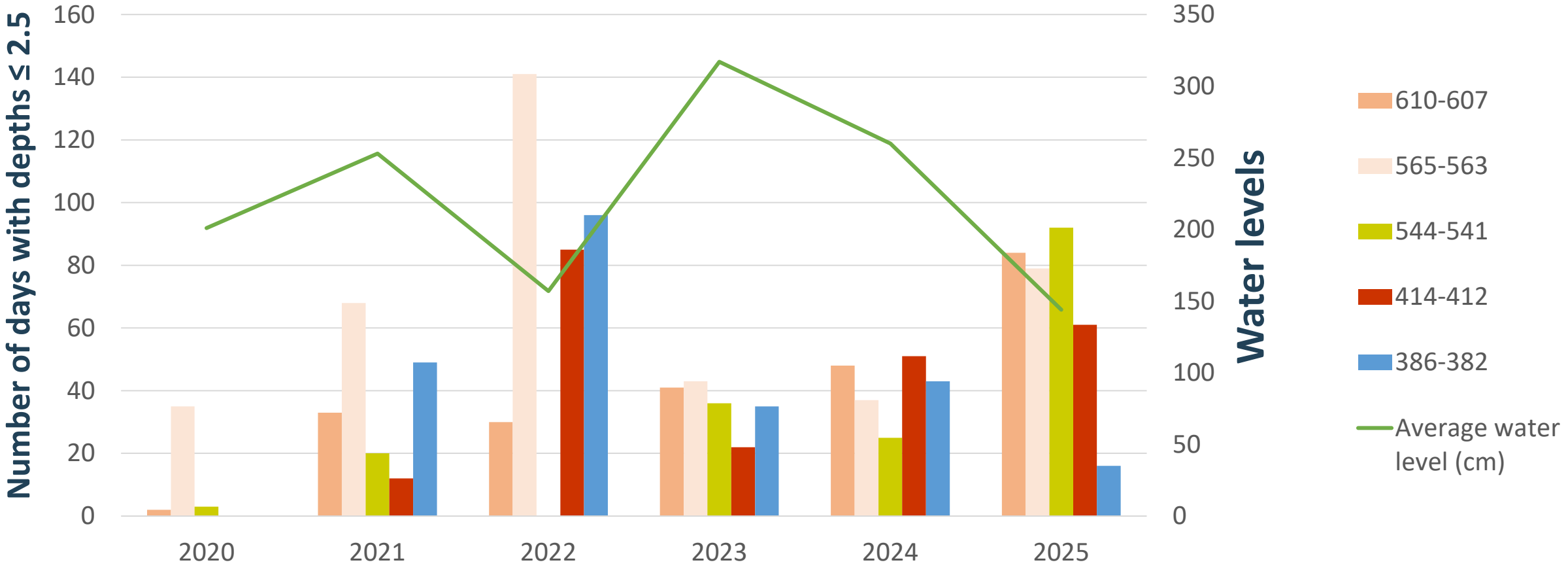
Status of main critical sections in 2020 – 2025 including water level information

Number of days with depths ≤ 2.5

	610-607 Somovit	565-563 Belene	544-541 Vardim	414-412 Albina	386-382 Chayka	Average water level cm
2020	2	35	3	0	0	201
2021	33	68	20	12	49	253
2022	30	141	0	85	96	157
2023	41	43	36	22	35	317
2024	48	37	25	51	43	260
2025	84	79	92	61	16	144

Status of main critical sections in 2020 – 2025 including water level information

Comparative chart of critical sections on average water level (2020 - 2025)

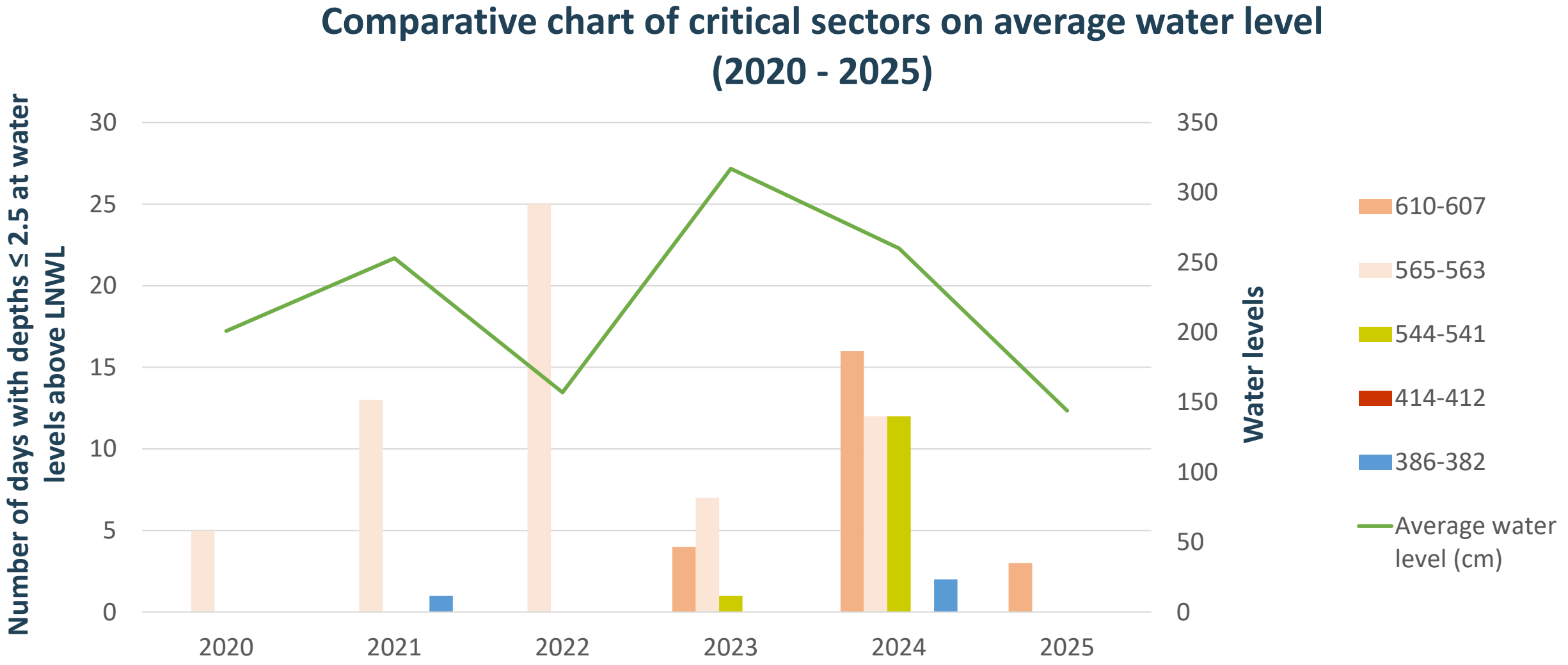


Status of main critical sections in 2020 – 2025 including water level information relative to LNWL

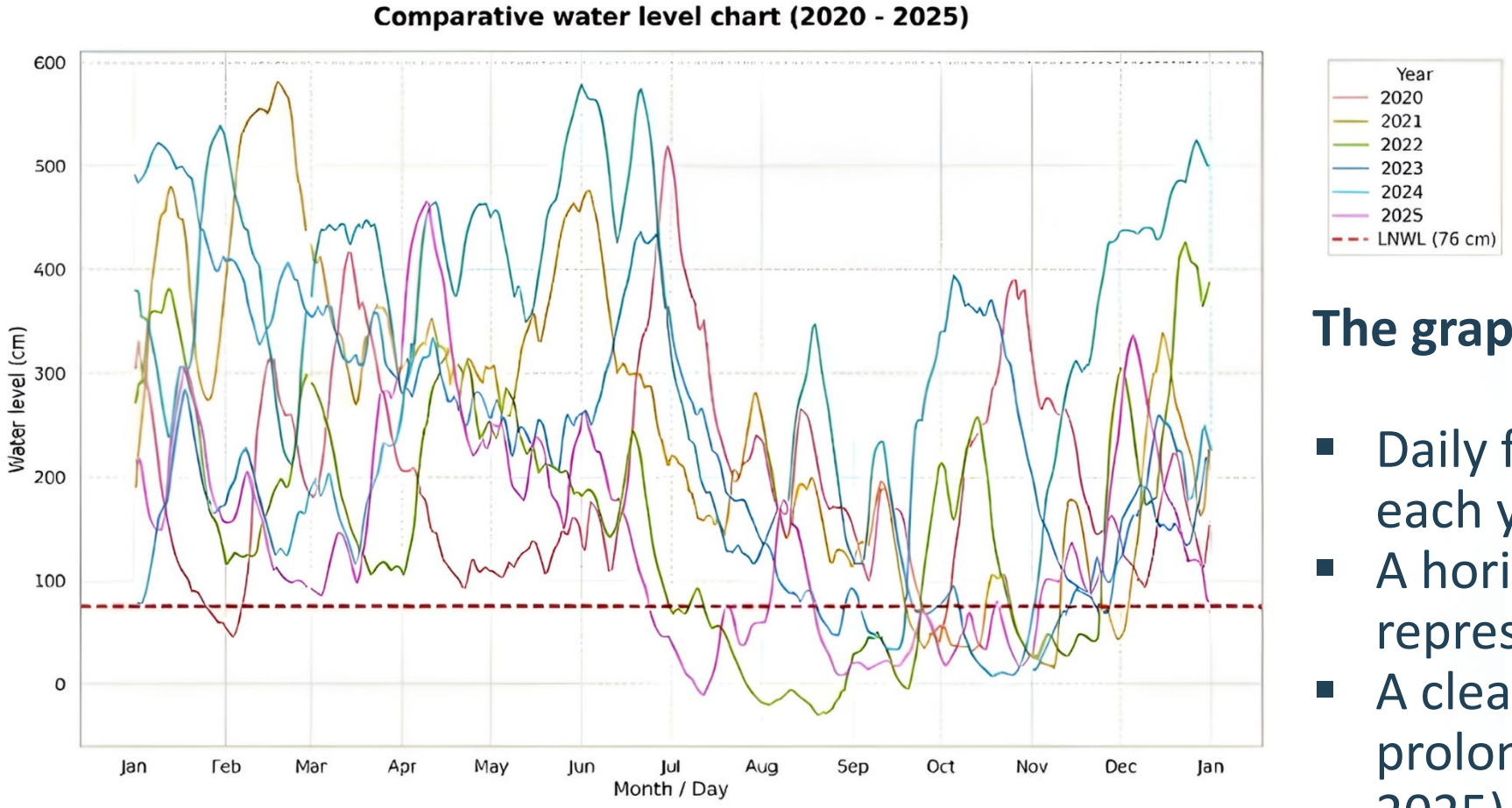
Number of days with depths ≤ 2.5 at water levels above LNWL

	610-607 Somovit	565-563 Belene	544-541 Vardim	414-412 Albina	386-382 Chayka	Average water level cm
2020	0	5	0	0	0	201
2021	0	13	0	0	1	253
2022	0	25	0	0	0	157
2023	4	7	1	0	0	317
2024	16	12	12	0	2	260
2025	3	0	0	0	0	144

Status of main critical sections in 2020 – 2025 including water level information relative to LNWL



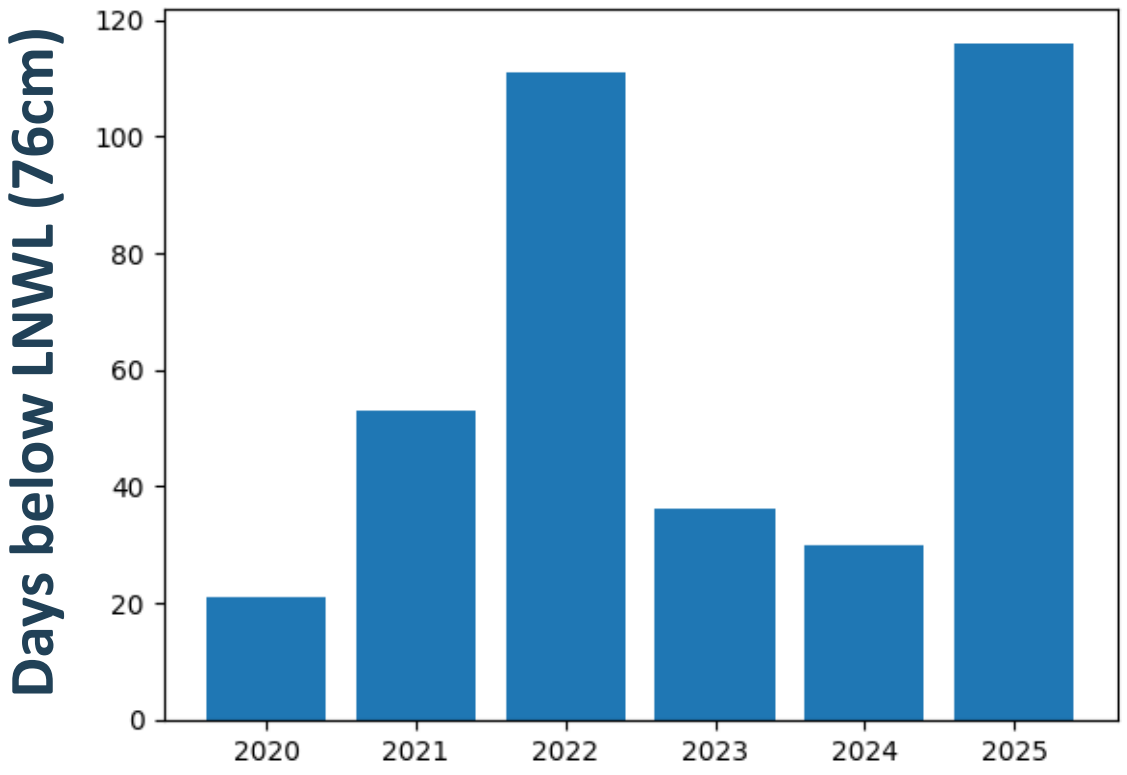
Comparative Characteristics of the Daily Water Levels of the Danube River at Svishtov



The graph illustrates:

- Daily fluctuations in water levels for each year;
- A horizontal dashed line representing the LNWL = 76 cm;
- A clear distinction of years with prolonged low-water periods (2022, 2025).

Number of days with water level below LNWL – Danube River at Svishtov



- Critical periods are primarily concentrated during the summer-autumn season.
- The years 2022 and 2025 are characterized by the longest and most continuous periods below the LNWL.
- In other years, low-water events are shorter but recurrent.
- Low water levels have become a regular feature rather than an isolated phenomenon.

Year	Days below LNWL	Assessment
2020	21	Favorable
2021	53	Moderately unfavorable
2022	111	Critical
2023	36	Relatively stable
2024	30	Near normal
2025	116	Exceptionally critical

2020:

- Short-term drops below LNWL.
- Minimal restrictions on navigation.
- Hydrologically favorable year.

2021:

- More than double the days below LNWL compared to 2020.
- Beginning of a drying trend.
- Risky summer-autumn period.

2022:

- Over 100 days below LNWL.
- Prolonged critical low waters.
- Serious difficulties for navigation and regulation.

2023:

- Partial recovery following 2022.
- Distinct low-water periods still present.
- Moderate risk to navigation.

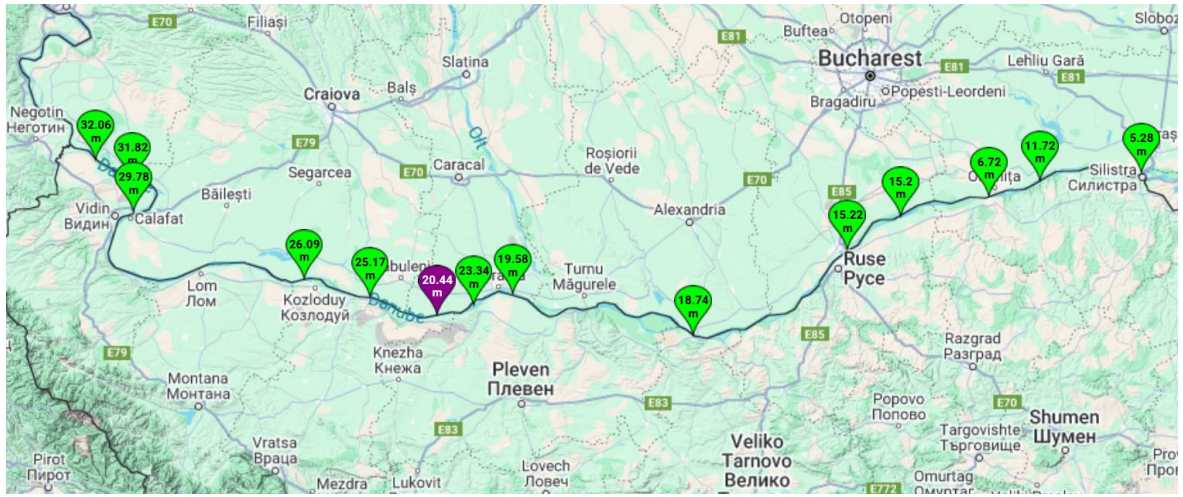
2024:

- Stabilization of water levels.
- Small number of critical days.
- Closest to a "normal" year since 2020.

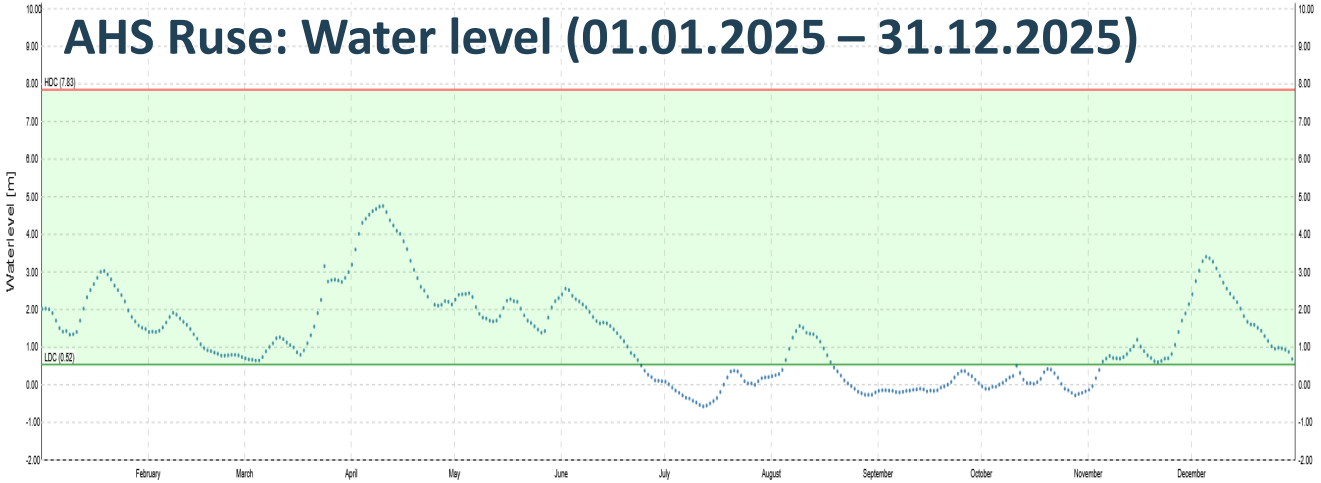
2025:

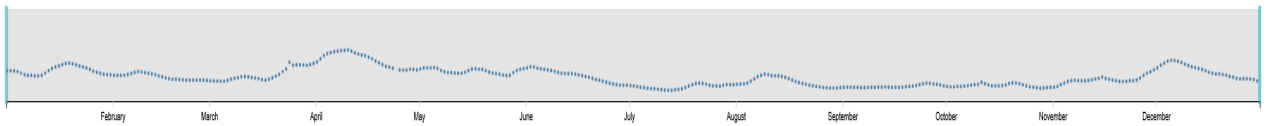
- Highest number of days below LNWL.
- Exceptionally unfavorable conditions.
- The most critical year of the observed period.

Analysis of the hydrological and navigational conditions 2025



AHS Ruse: Water level (01.01.2025 – 31.12.2025)





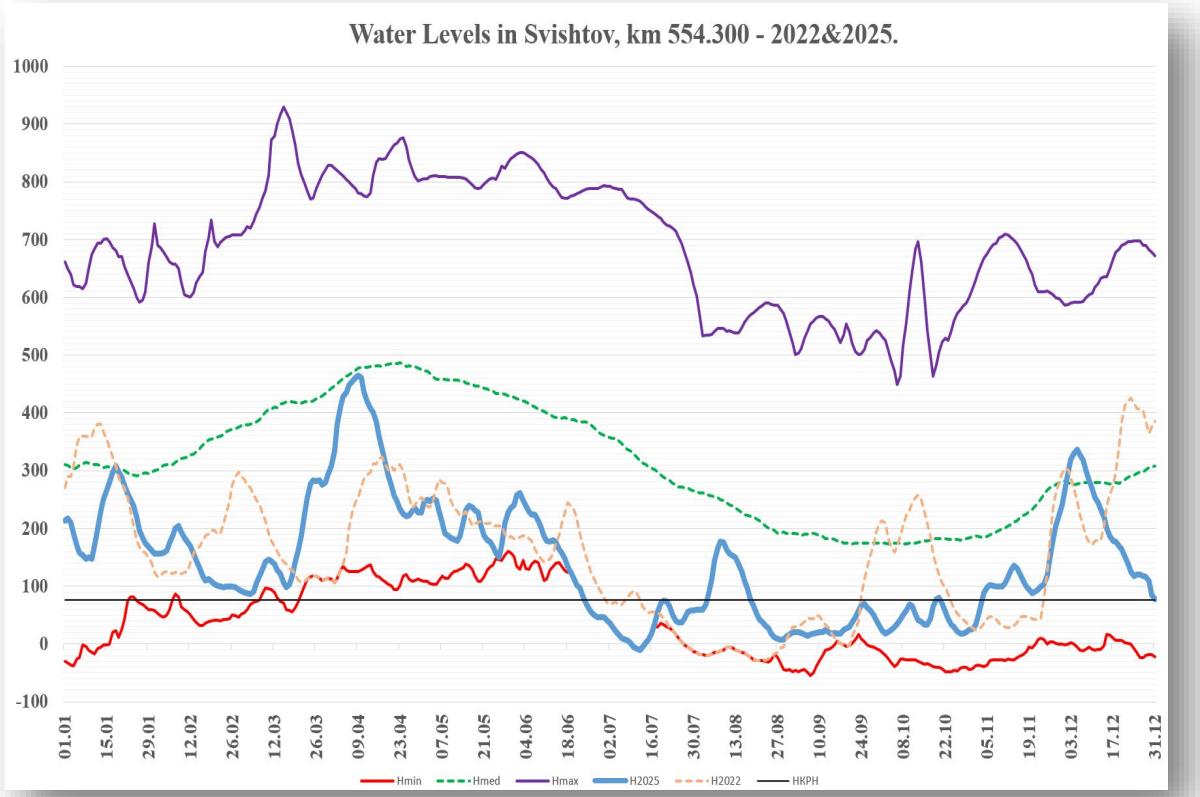
High temperatures during the winter months and the lack of snowfall in the Danube basin during 2025 led to low water levels.

High water levels were observed only in early April and during May, followed by a period of low water that began in the third ten-day period of June and lasted until the end of the year, with a brief improvement during the first 15 days of December.

Due to a sharp decline in February, as of 25 February 2025, depths of 25 dm were recorded in sections of the fairway at a water gauge measurement of +99 cm in the town of Svishtov for the critical Somovit section.

The lowest water discharge was observed in mid-July.

Hydrological conditions - Comparison between 2022 and 2025 (rkm 554.3 – Svishtov)



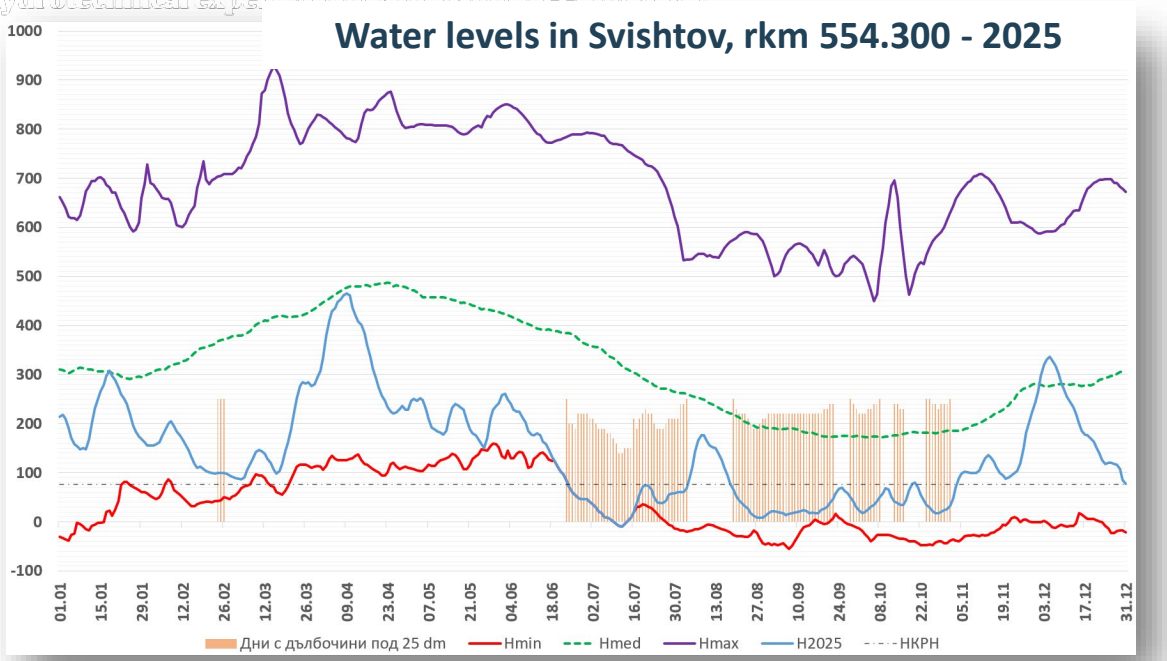
Purple curve: *multi-year maximum levels*
Green dotted curve: *multi-year average levels*
Orange dotted curve: *water level fluctuations in 2022*
Solid blue curve: *water levels 2025*
Black line: *LNWL*
Red curve: *multi-year minimum levels*

Water levels in 2025 –
below the multiannual average

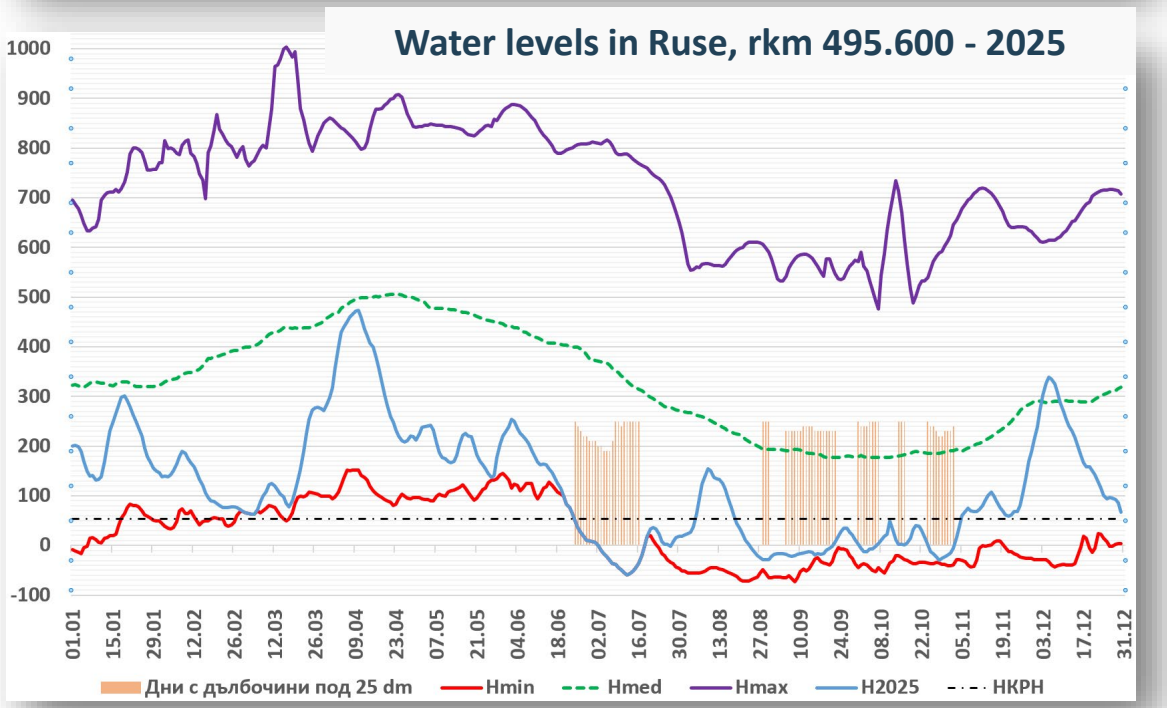
From 19 June to 16 July – **the water levels were below the multi-year minimum**.
From 24 June – 3 August and 19 August – 4 November – **levels below LNWL were recorded.**
The year 2025 was very similar to 2022.

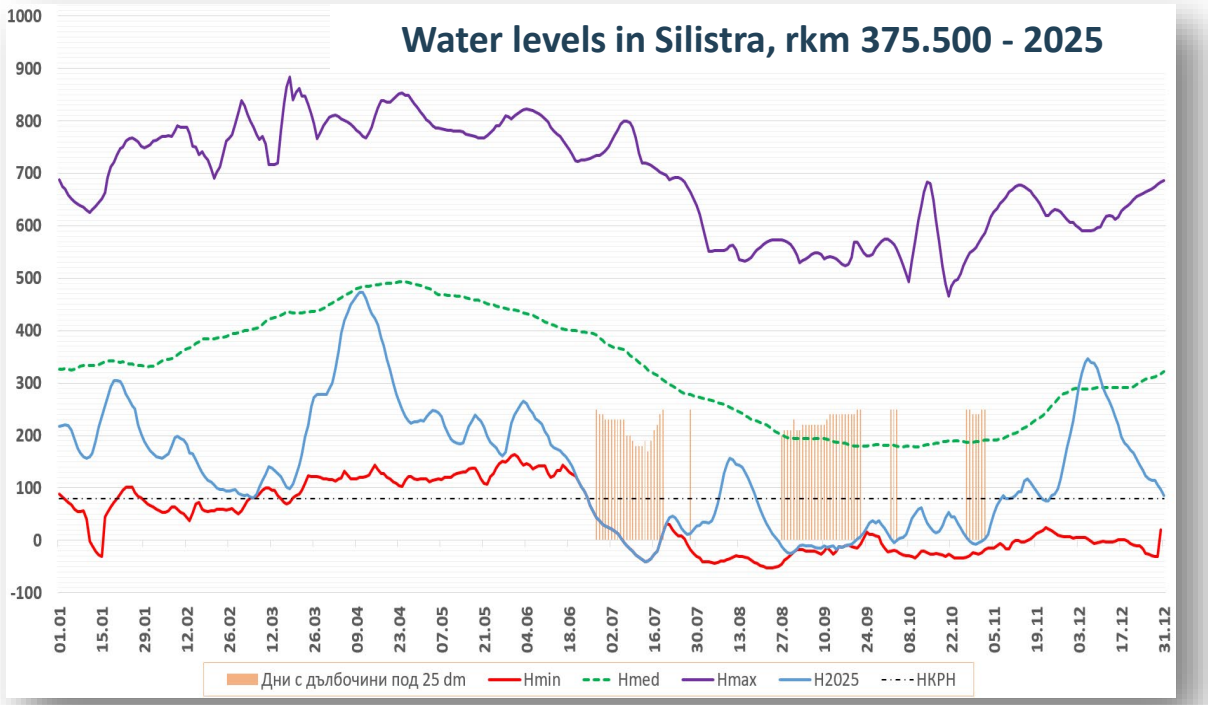
2022 – Pan-European drought: Widespread rainfall deficit across Central and Eastern Europe caused record-low water levels along the entire Danube.
2025 – Regional imbalance: Drought in the Sava basin (the main tributary) significantly reduced water levels in the Lower Danube, even when upstream conditions were better.

Water levels 2025

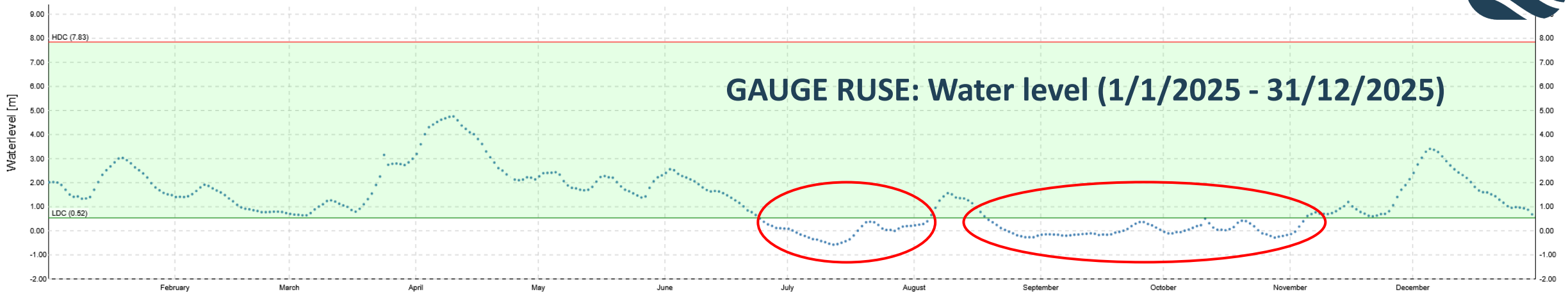


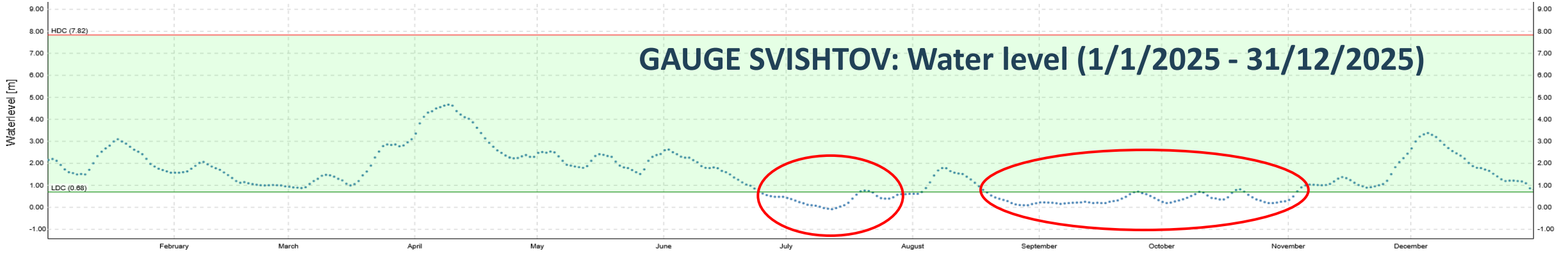
2025	Number of days below LNWL	Min. water level	Mid. water level	Max. water level
Svishtov	116	-10	144	465
Ruse	120	-59	122	474
Silistra	129	-41	136	473

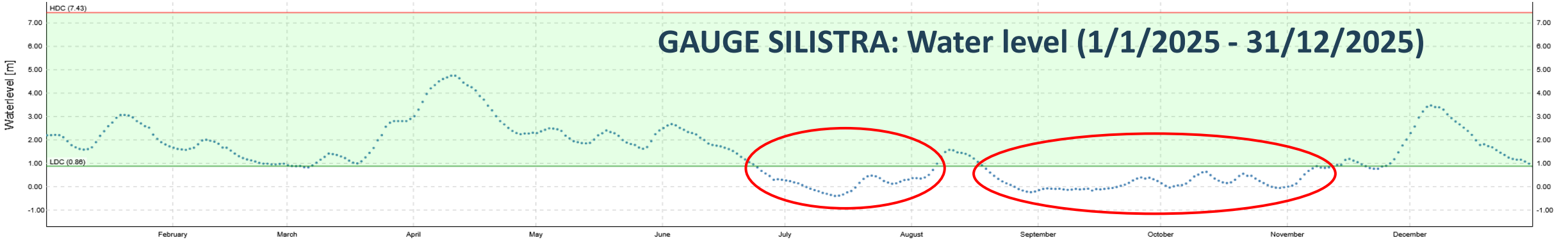




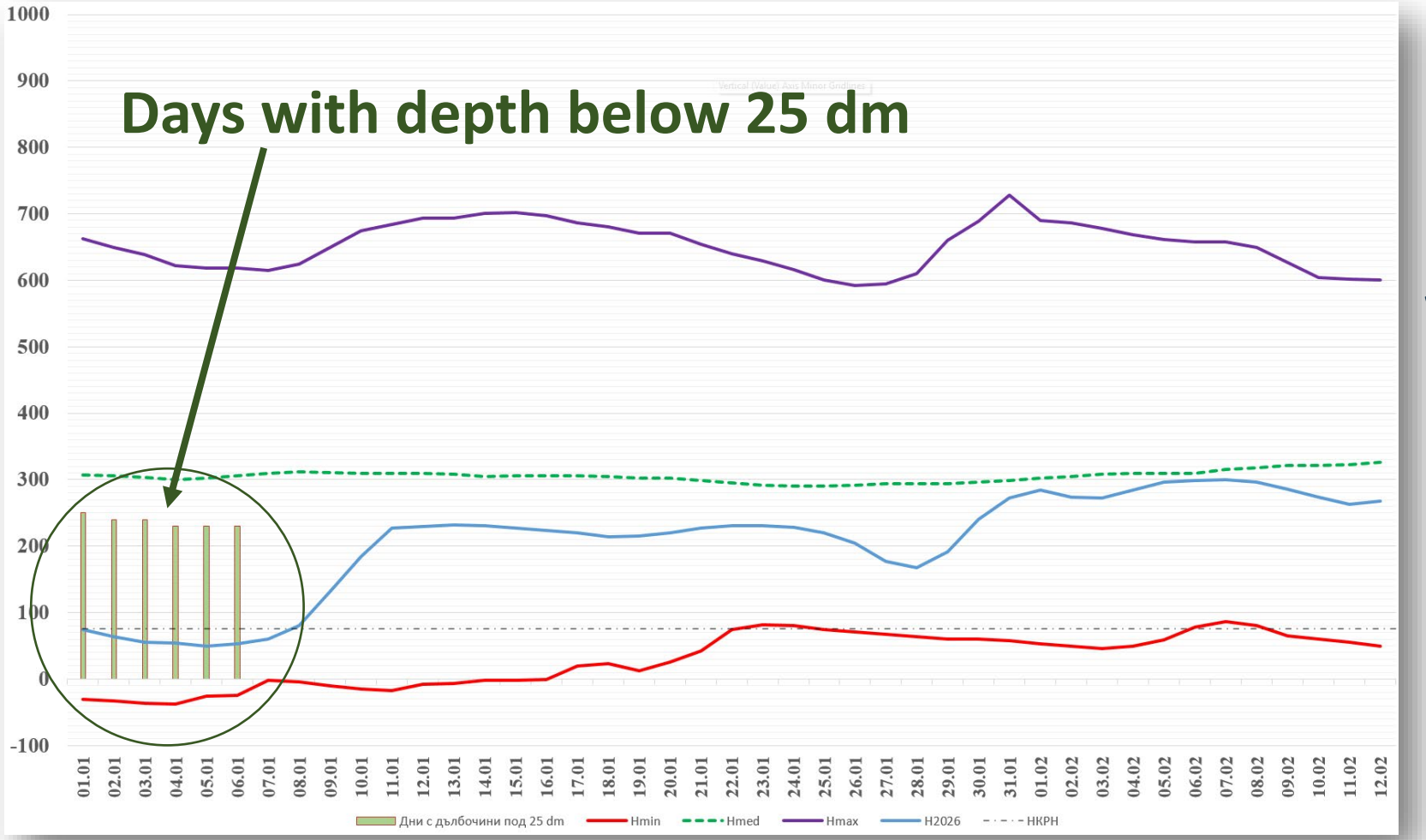
Periods in 2025 with water levels below LNWL







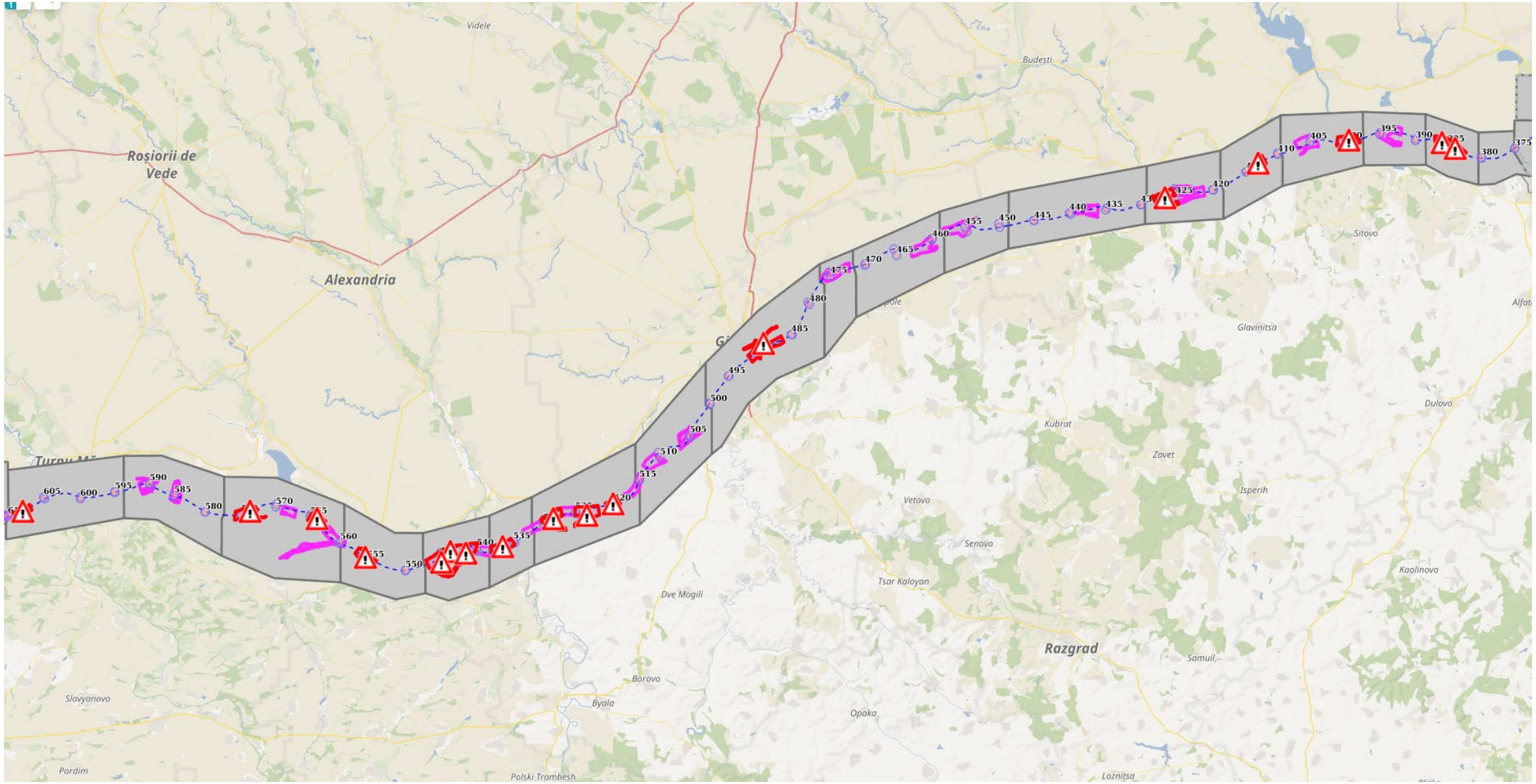
Water Levels in Svishtov, rkm 554.300
Period: 01.01.2026 – 12.02.2026



01.01.2026 – 12.02.2026:
Water levels below the long-term average;

01 – 07.01.2026 –
Water levels below LNWL.

Navigation conditions rkm 610.000 – rkm 374.100 in 2025

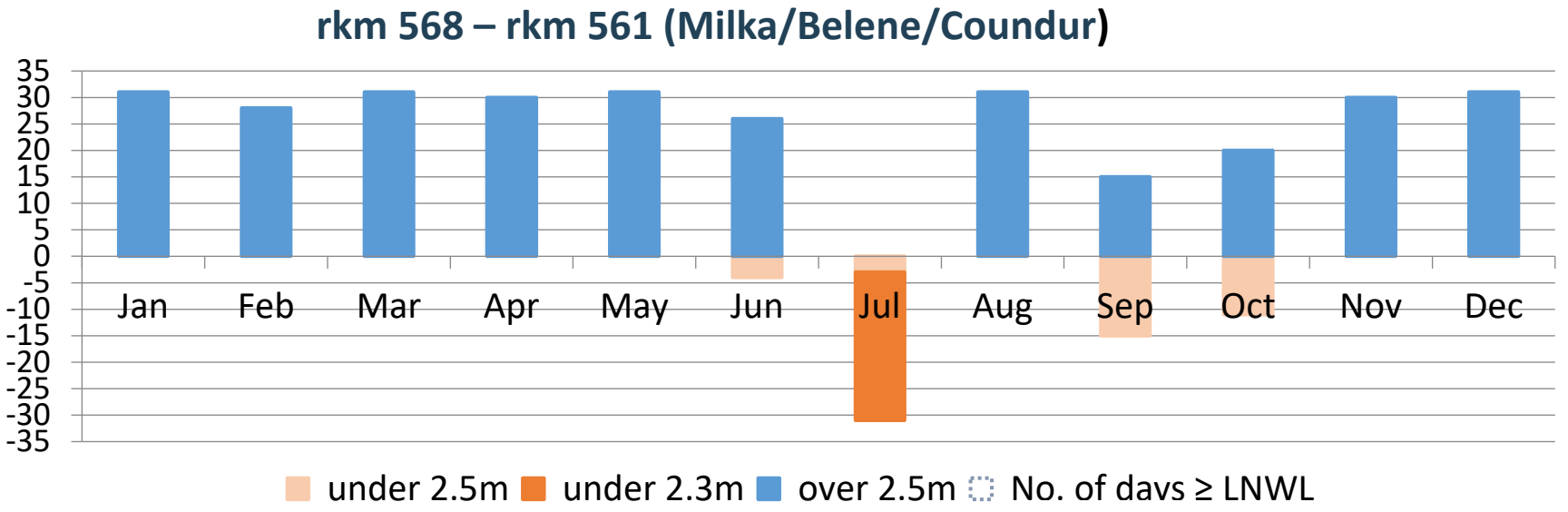


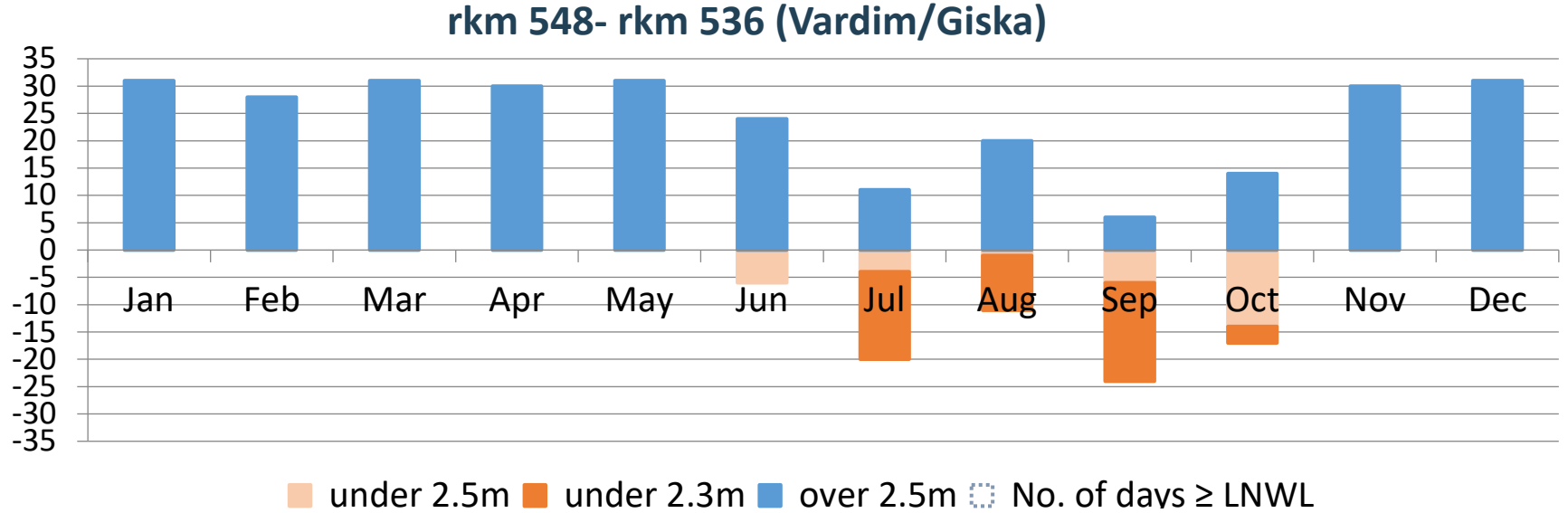
Hydrological and navigation information (01.01.2025 – 31.12.2025)

2025	LNWL	Number of days below LNWL	Days of non-compliance with DC recommendations
Svishtov	76	116	4
Ruse	53	120	0
Silistra	80	129	0

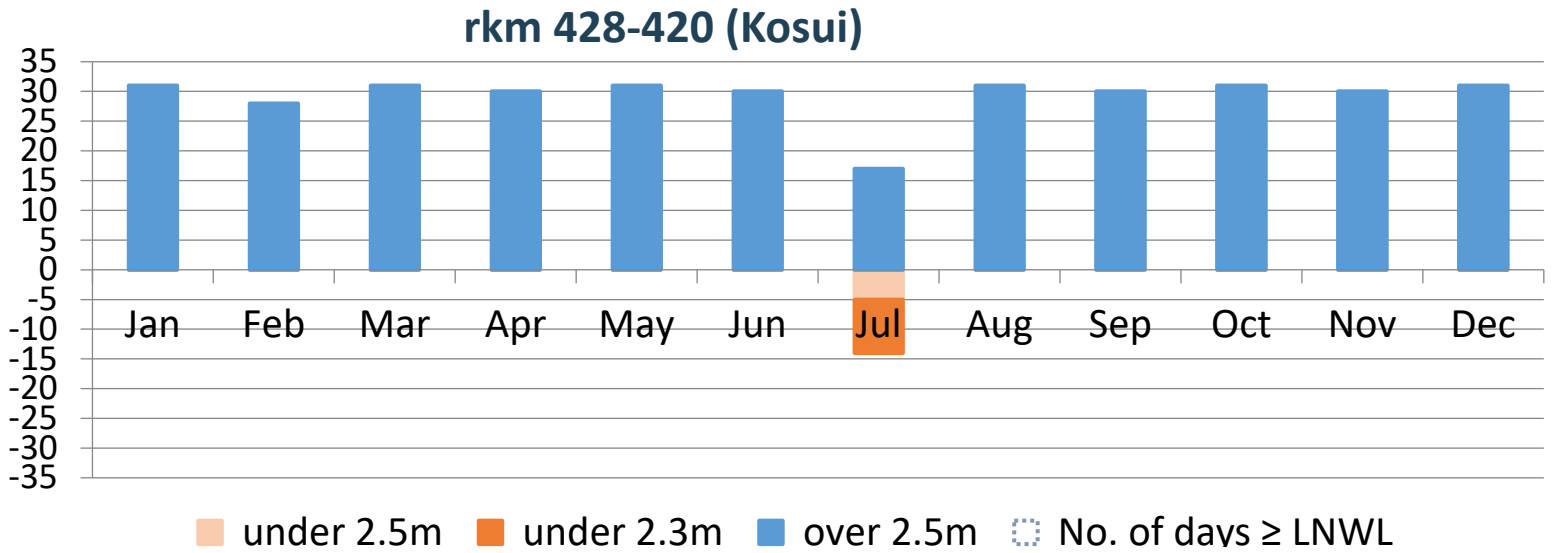
Critical sections	Water gauge	Date	Days ≤ 25dm relative to LNWL
386.5 - 385	Silistra +80cm	-	0
393.5 - 391		-	0
399.5 - 398.5		-	0
404.5 - 402,5		-	0
413 - 411		-	0
428 - 425		-	0
454.5 - 453	Ruse +53cm	-	0
461.5 - 460		-	0
476 - 473		-	0
489 - 486		-	0
524 - 520		-	0
528.5 - 527	Svishtov +76cm	23.06.2025	1
531 - 530		-	0
537.5 - 535.5		-	0
544 - 541		-	0
546 – 544		-	0
555 – 553		-	0
565 - 562.5		-	0
576 - 573.5		23.06.2025	1
585.5 – 584		-	0
609.5 - 607		24-26.02.2025	3

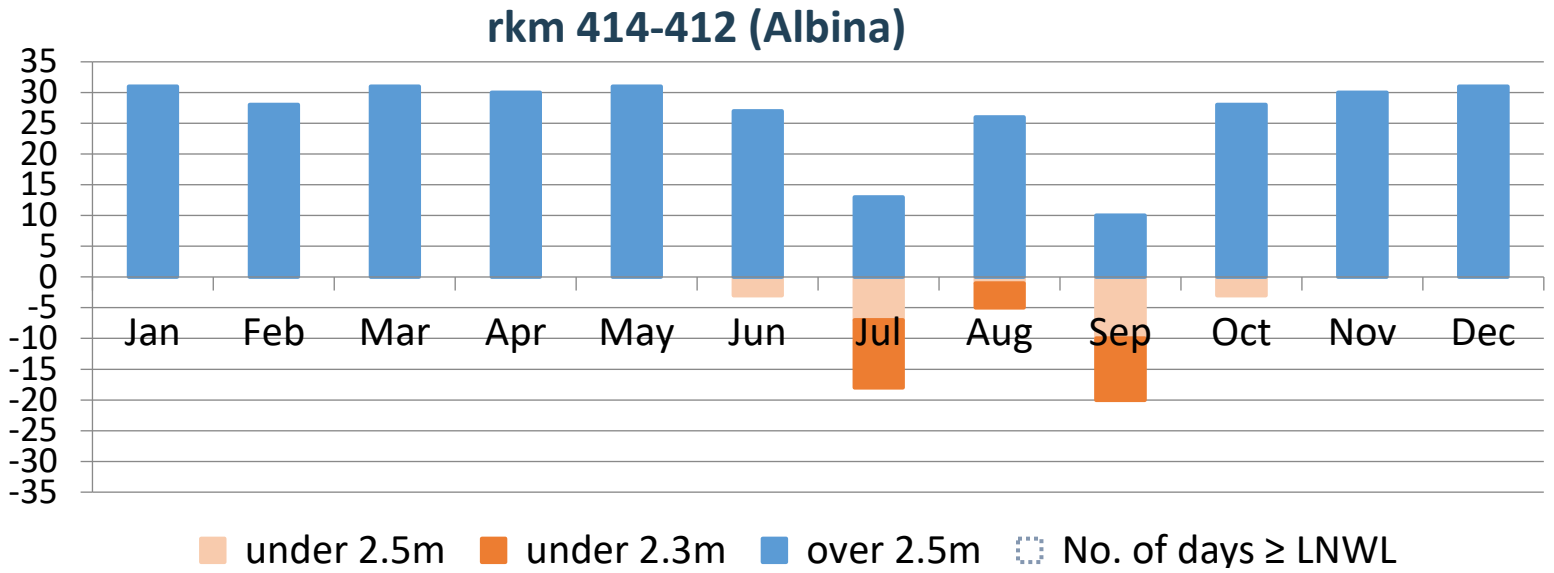
Available fairway depths and water levels in 2025





Available fairway depths and water levels in 2025

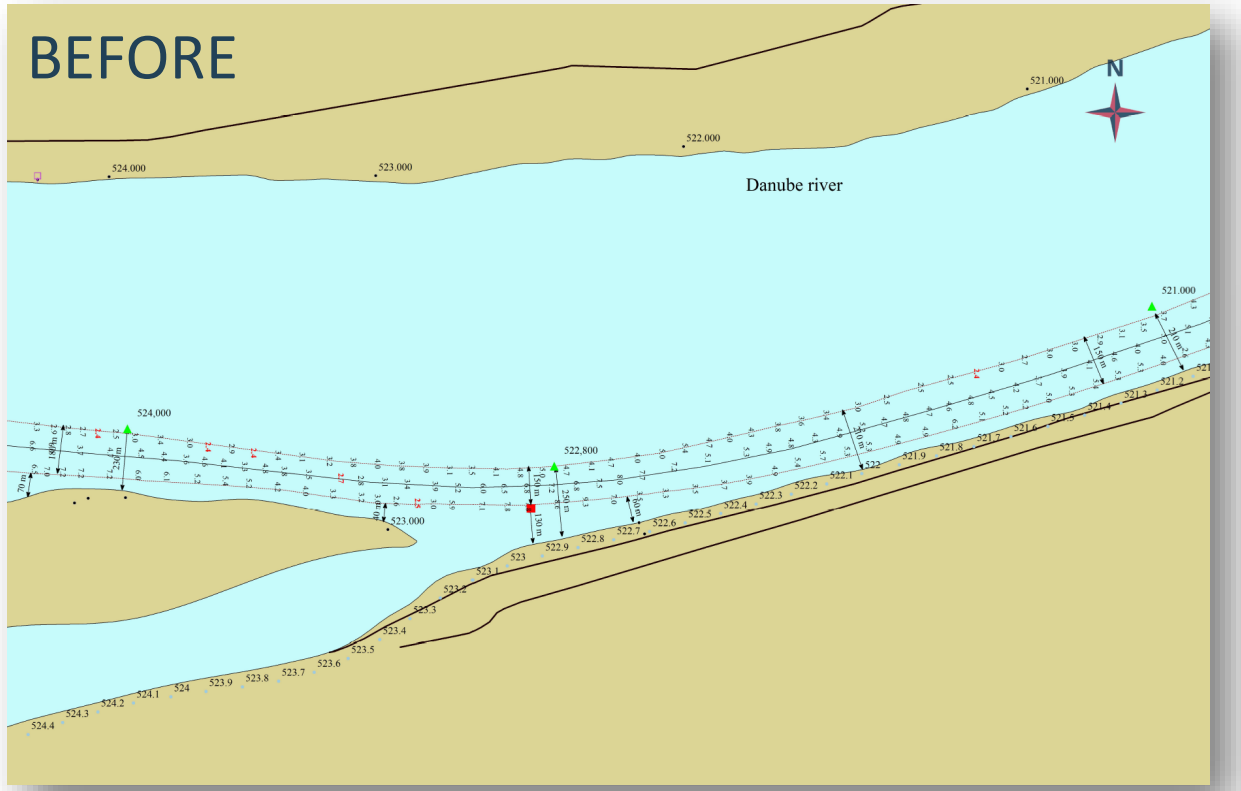


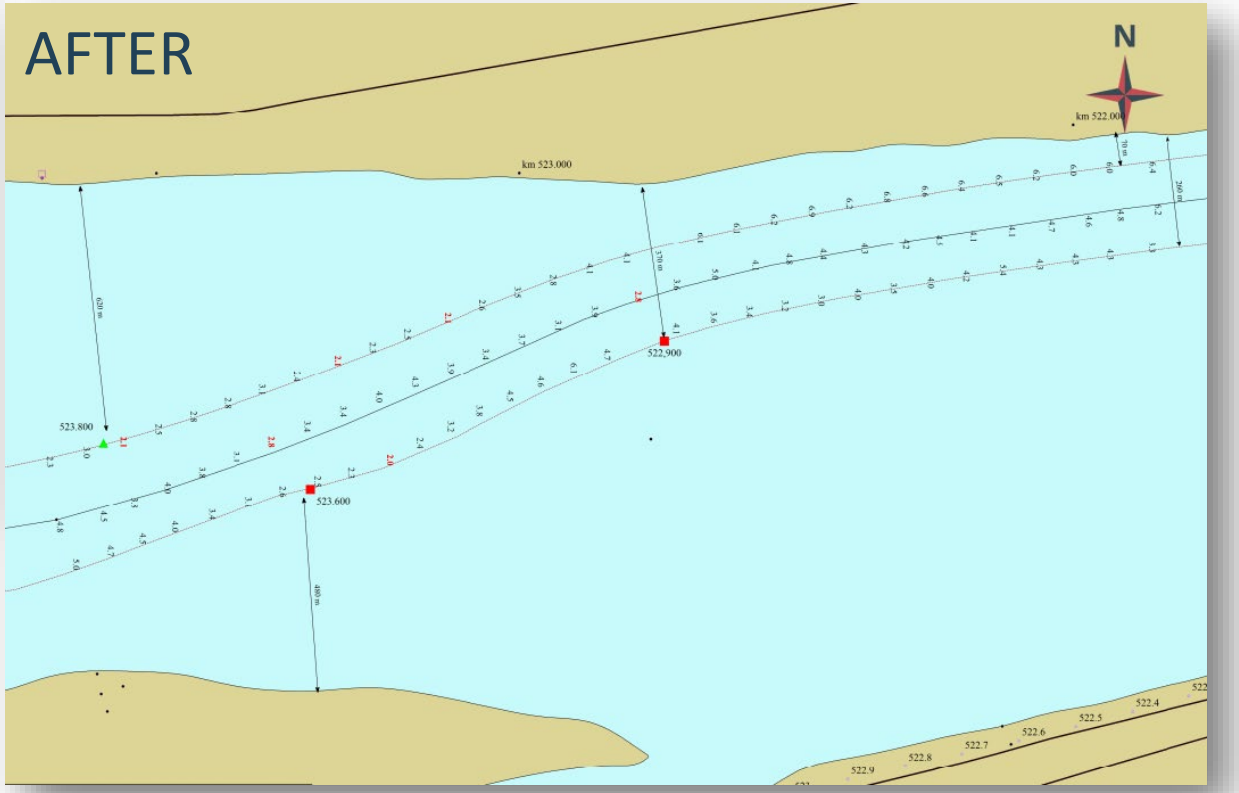


Fairway relocations in 2025

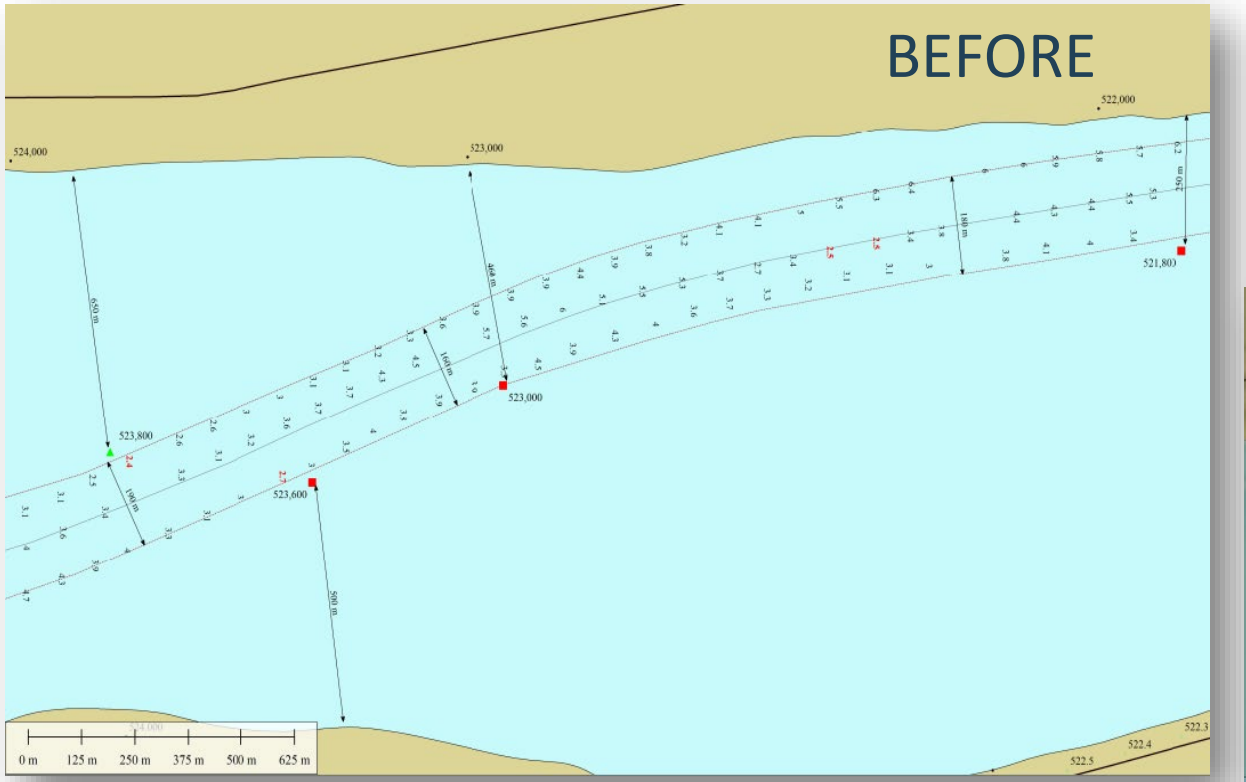
Vardim Island	rkm 544 – rkm 541	12.02.2025
Batin Island	rkm 524 – rkm 521	02.04.2025
Vetren Island	rkm 394 – rkm 391	09.04.2025
Garvan Island	rkm 405 – rkm 402	09.04.2025
Albina Island	rkm 414 – rkm 412	25.04.2025
Belene Island	rkm 565 – rkm 562	15.07.2025
		31.07.2025
Vardim island	rkm 544 – rkm 541	16.10.2025
Batin island	rkm 524 – rkm 520	05.11.2025
		12.12.2025

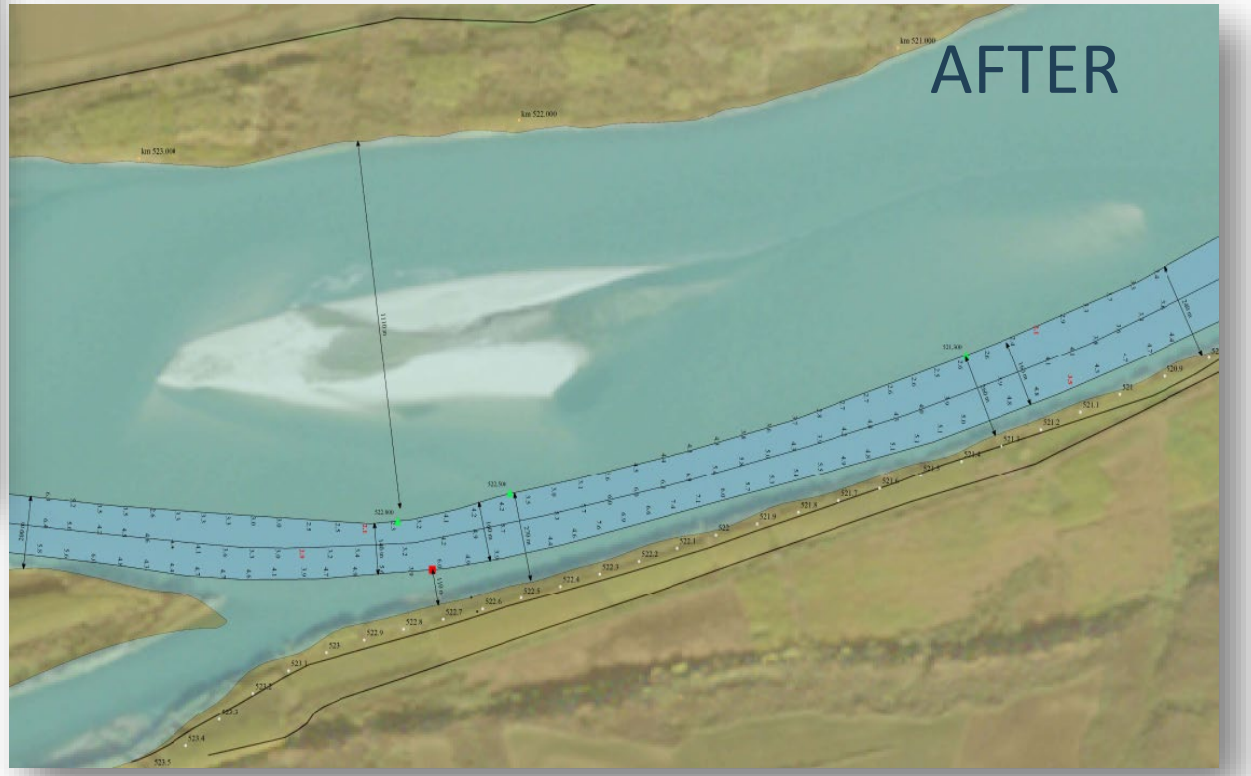
Batin Island (rkm 524 – rkm 521) – 02.04.2025





Batin Island (rkm 524 – rkm 521) – 12.12.2025





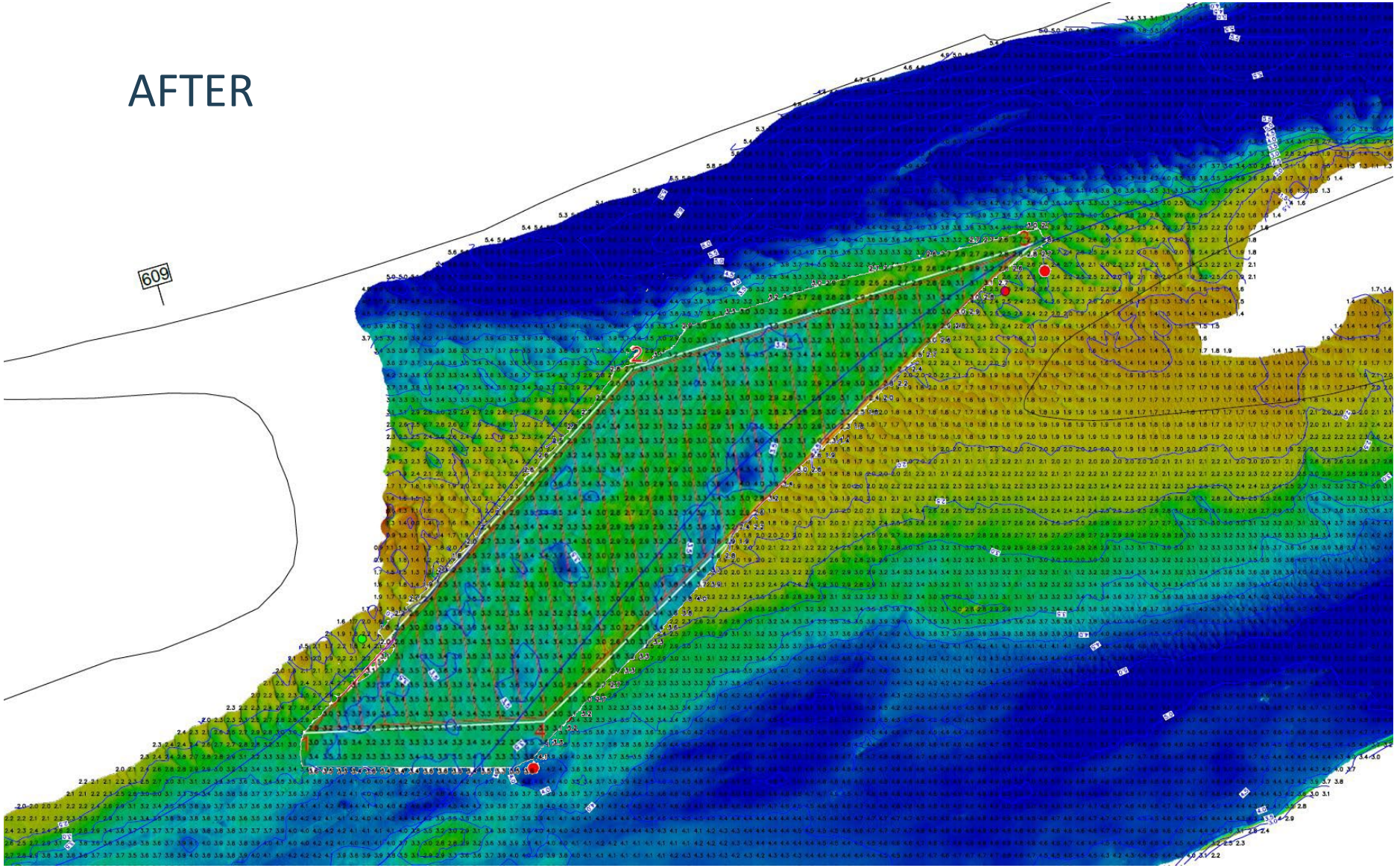
Dredging activities

Dredging activities

2025	**G. Barzina Island**	rkm 575.400 - rkm 575.000	22.04 - 09.05	EAEMDR own dredging equipment	**21 678 m³**	**243 924 m³**
	Somovit	rkm 609.000 - rkm 608.500	05.06 - 14.06	External contractor	**31 422 m³**	
	Somovit	rkm 609.000 - rkm 608.500	16.06 - 19.06		**13 385 m³**	
	Batin Island	rkm 528.100 - rkm 527.600	28.06 - 02.07		**37 953 m³**	
	Belene Island	rkm 563.500 - rkm 562.700	21.07 – 29.07		**60 546 m³**	
	G. Barzina Island	rkm 576.000 - rkm 574.700	25.08 - 29.08		**38 039 m³**	
	G. Barzina Island	rkm 574.700 - rkm 574.600	30.08 - 30.08		**3 709 m³**	
	Svishtov	rkm 554.400 – rkm 553.300	02.10-07.10		**37 192 m³**	

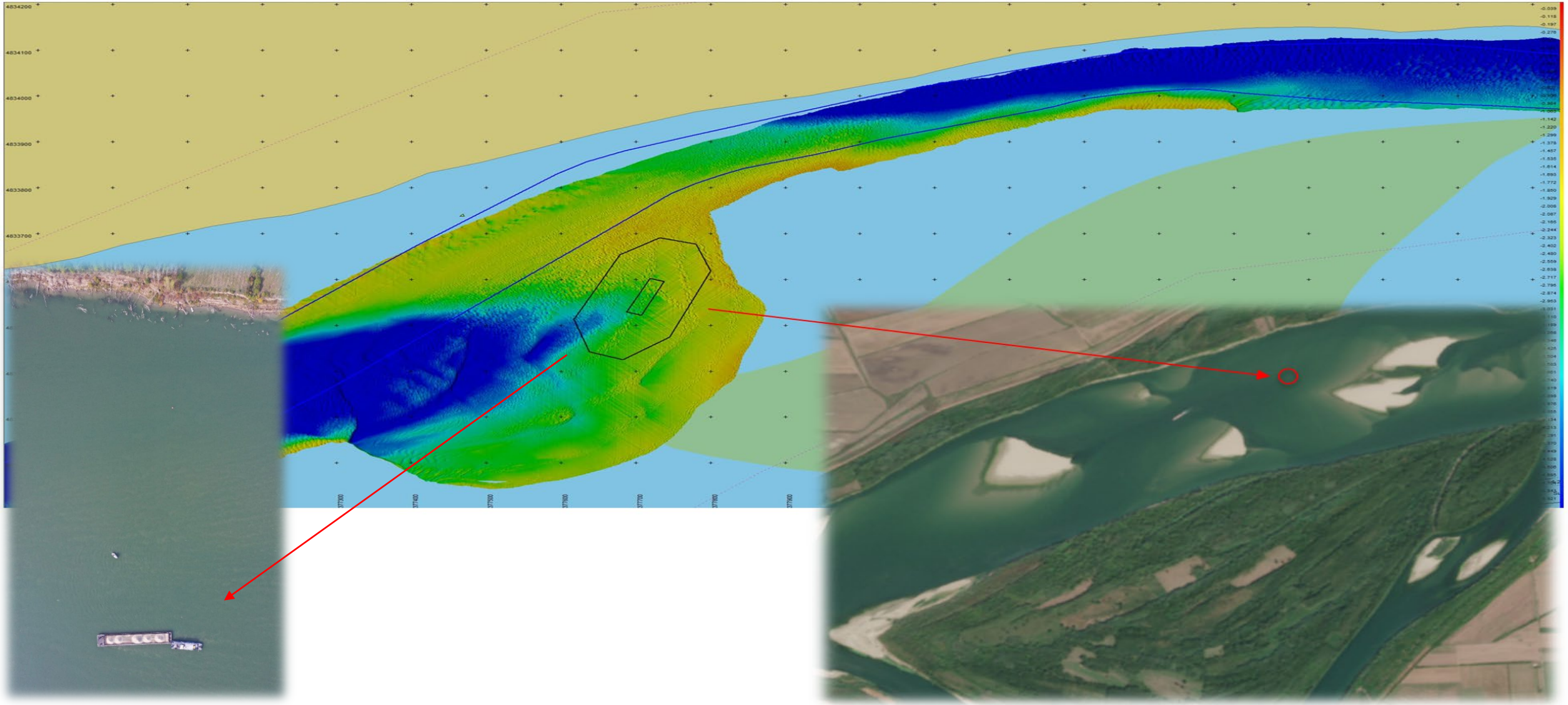
Somovit (rkm 609.000 – rkm 608.500)

AFTER

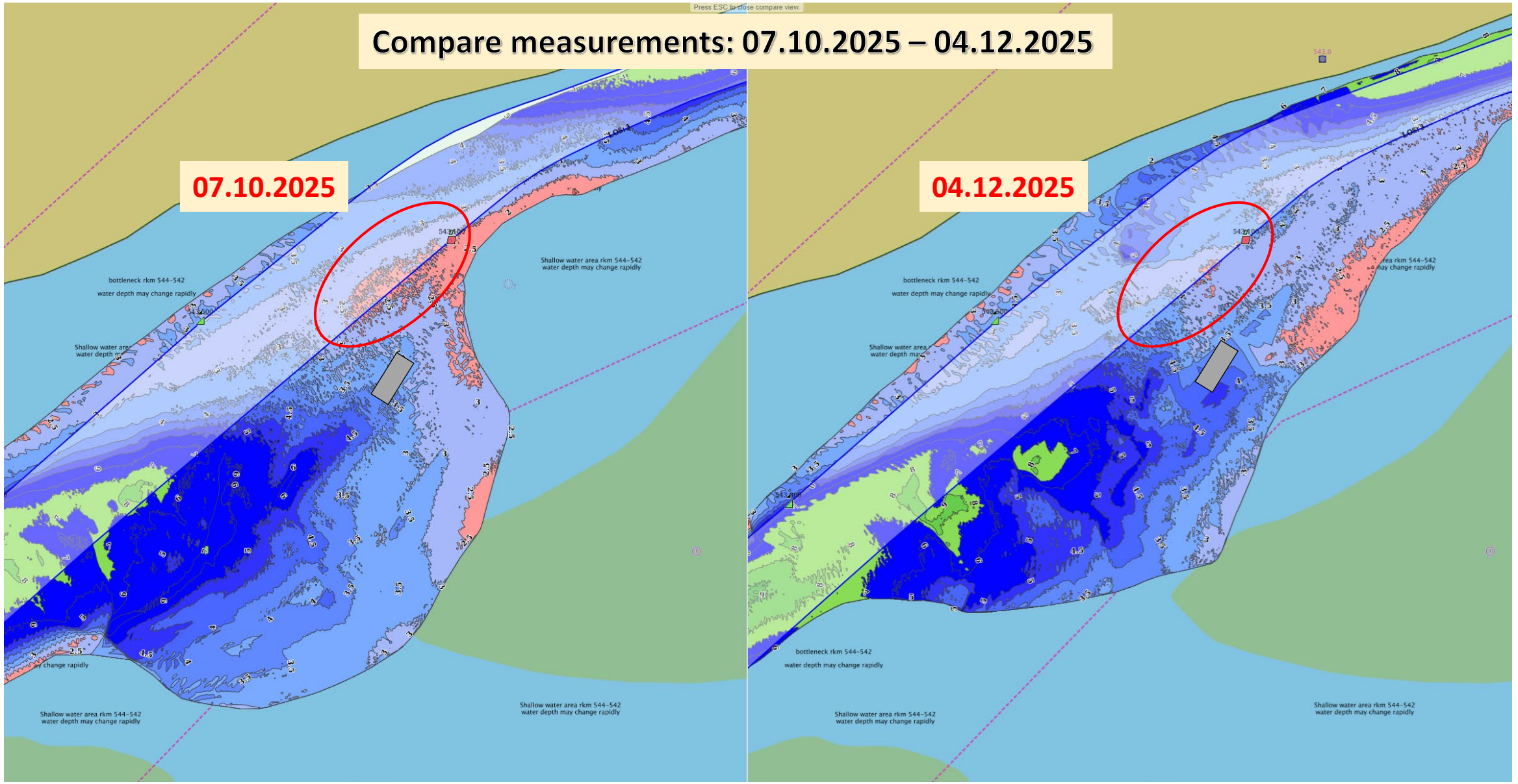


FAIRway Danube II -
Pilot of flexible infrastructure elements for enhancing low water resilience

Period of pilot implementation on Vardim island area (rkm 546.000 – rkm 545.000): Start 15.10.2025 – End 05.12.2025



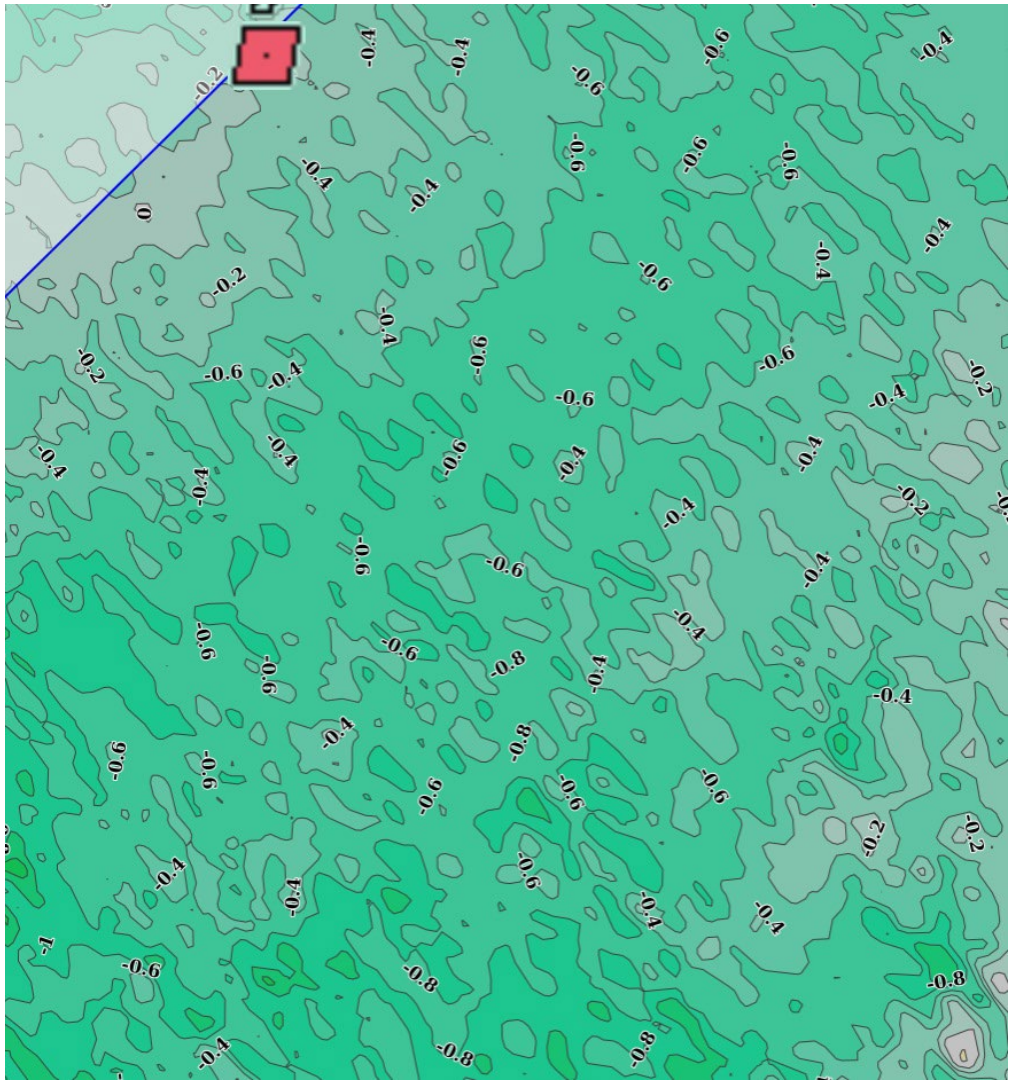
Pilot of flexible infrastructure elements for enhancing low water resilience in Bulgaria



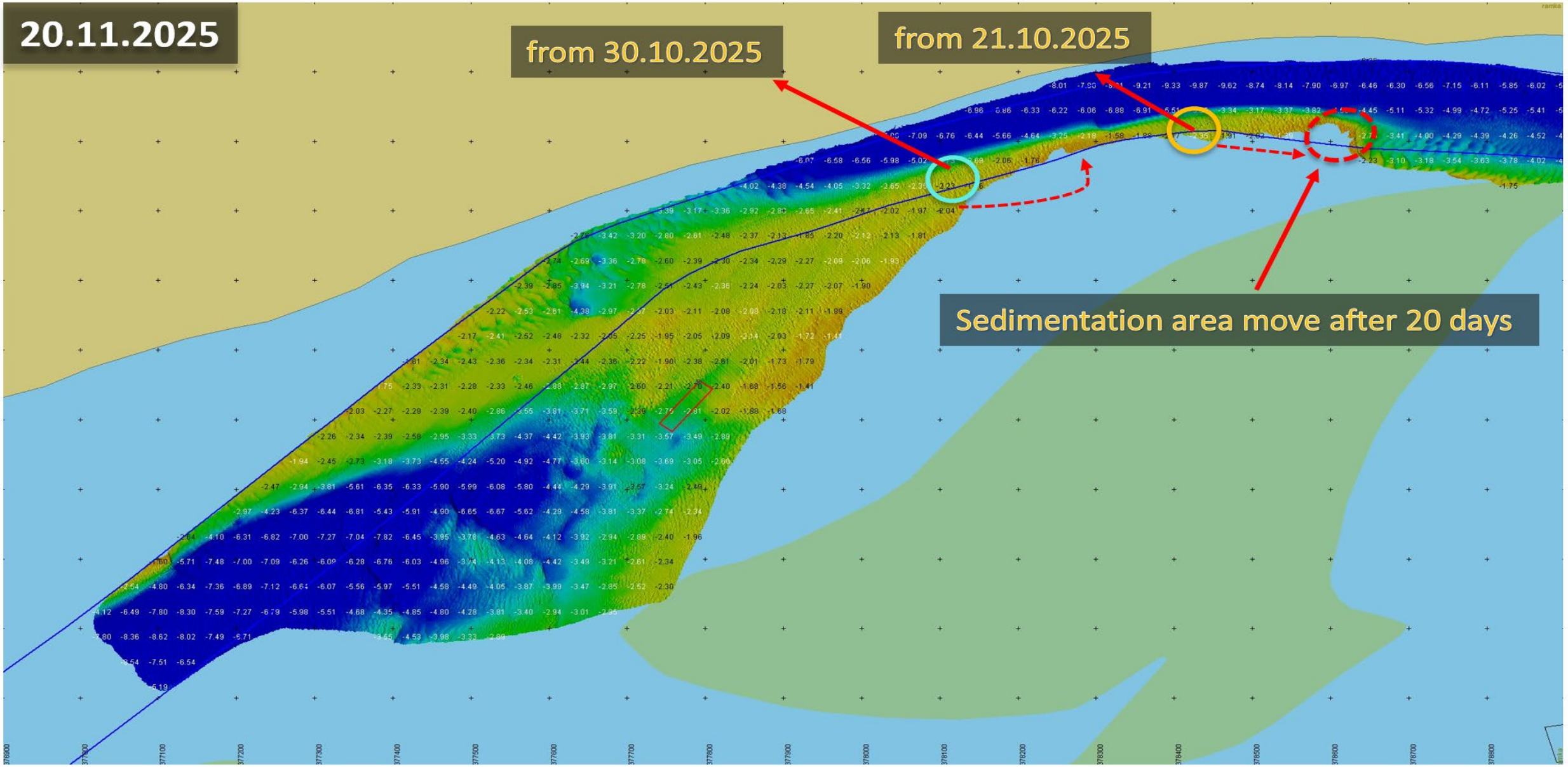
Pilot of flexible infrastructure elements for enhancing low water resilience in Bulgaria

Differences 07.10.2025 - 04.12.2025. A deepening of 60 to 90 cm is observed.

Volume difference between:
07.10.2025 – 21.10.2025 -> 18 740 m^3
07.10.2025 – 04.12.2025 -> 27 265 m^3
(END)



Pilot of flexible infrastructure elements for enhancing low water resilience in Bulgaria



Planned activities to ensure navigation in 2026:
Study of the hydrological regime of the Danube River

Measurement of water discharge at the main hydrometric profiles	24
Water level measurement	3650
Water temperature measurement	2190
Velocity and water discharge measurement in island branches etc.	6
Velocity measurement in the area of the Ruse - Giurgiu bridge	2
Velocity measurement in the area of the Vidin-Calafat bridge	1
Coordination and exchange of measurement results in 2025 with AFDJ	2

Study of the hydromorphological regime in the Bulgarian section of the Danube river

Hydrographic images of sunken vessels	1
Hydrographic images of mooring places	1
Hydrographic images of critical for navigation areas	50 km^2
Hydrographic images at the Ruse - Giurgiu bridge	2
Hydrographic images at the Vidin - Calafat bridge	1
Cross-profiles at the gauging stations	6
Mapping the outlines of coasts and islands	10 km
Hydrographic images at quarries for the extraction of alluvial deposits	1
Hydrographic images on island channels, natural winter harbors	5

Ensuring safe and unhindered navigation in the Bulgarian section of the Danube River

Sampling for grain-size analysis in critical sections	9
Issuance and dissemination of hydrological forecasts	365
Issuance and dissemination of hydrological and navigation bulletins	365
Storm alerts and warnings	1500
Conducting and disseminating meteorological observations	24 090

Planned fairway maintenance activities in 2026: Dredging activities

➢ Under a framework contract with an external contractor (approx. **300 000 m³**):

Not later than May, the most critical shallow area will be selected for dredging.
Surveys and monitoring of possible dredging sites are ongoing and a dredging plan will be prepared for assigning the works to an external contractor.

The most critical area is expected to be near Belene Island
(km 565.000 – 563.000)
Estimated dredged volume: approx. 100 000 m³
In June, dredging works are planned near Vardim Island
(km 544.000 – 542.000)
Estimated volume: approx. 80 000 m³

Planned fairway maintenance activities in 2026: Dredging activities

➢ Using own equipment, dredging is planned (approx. **50 000 m³**):

Near **Belene Island** (rkm 575.500)
Near **Albina Island** (rkm 413.000 – 411.000)

Additional dredging sites will be selected as new bottlenecks emerge, depending on the hydromorphological processes throughout the year.

Planned Single Beam measurements in the Bulgarian section of the Danube River

Region	River kilometer	Planned SB measurement
Chaika island	386.500 – 385.000	20
Vetren island	393.500 – 391.000	20
Vereshti island	399.500 – 398.500	10
Garvan island	404.500 – 402.500	20
Albina island	413.000 – 411.000	20
Kosui island	428.000 – 425.000	10
Braschlyan island	454.500 – 453.000	12
Mishka island	461.500 – 460.000	12
Gostin island	476.000 – 473.000	12
Danube bridge	489.000 – 486.000	4
Batin island	524.000 – 521.000	20
Batin island	526.500 – 524.500	20
Batin island	529.000 – 527.000	14
	531.000 – 530.000	12
Yantra river	537.500 – 535.500	10
Vardim island	544.000 – 541.000	24
Vardim island	546.000 – 544.000	24
Port Svishtov	555.000 – 553.000	20
Belene island	565.000 – 562.500	24
G. Barzina island	576.000 – 573.500	16
Paletz island	585.000 – 584.000	6
Port Somovit	609.500 – 607.000	20

Work plan for the maintenance and improvement of the fairway in 2026 in the Bulgarian section of the Danube River

№	Activity	Unit of Measure	Total Scope of Work
1.	**Marking**		
	Coastal signs	pcs.	18
	Illuminated buoys	pcs.	30
	Non-illuminated buoys	pcs.	140
	Radar reflectors	pcs.	4
	Other navigation signs	pcs.	235
	Total:		427
2.	**Maintenance of the kilometer signs**	pcs.	470
3.	**Conducting single-beam echo sounder measurements on the fairway**		
	Between 5 – 8 soundings per survey	pcs.	350
		km	1000
4.	**Published information for skippers**		
	Notice of change in navigational conditions	pcs.	120
	Bulletins on navigational and fairway conditions	pcs.	120
5.	**ENC Updates**	pcs.	30

Improvement of the navigational infrastructure under DISMAR project

- **1020 new coastal signs** - delivered;
- **150 new floating signs (buoys)** – 80 red and 70 green - delivered;
- **150 LED lanterns** with built-in AIS System, Type 1 and Type 3 systems and solar panels for buoys -delivered;
- **20 lamps** without AIS systems for beacons - delivered.

- **A vessel for maintaining the coastal signalization is currently under construction** – to be completed by October 2026

Establishment of fixed sensors required for GNS monitoring in 17 locations under FAIRway Danube II

- **Supply and Installation of 11 New Automatic Stations:**

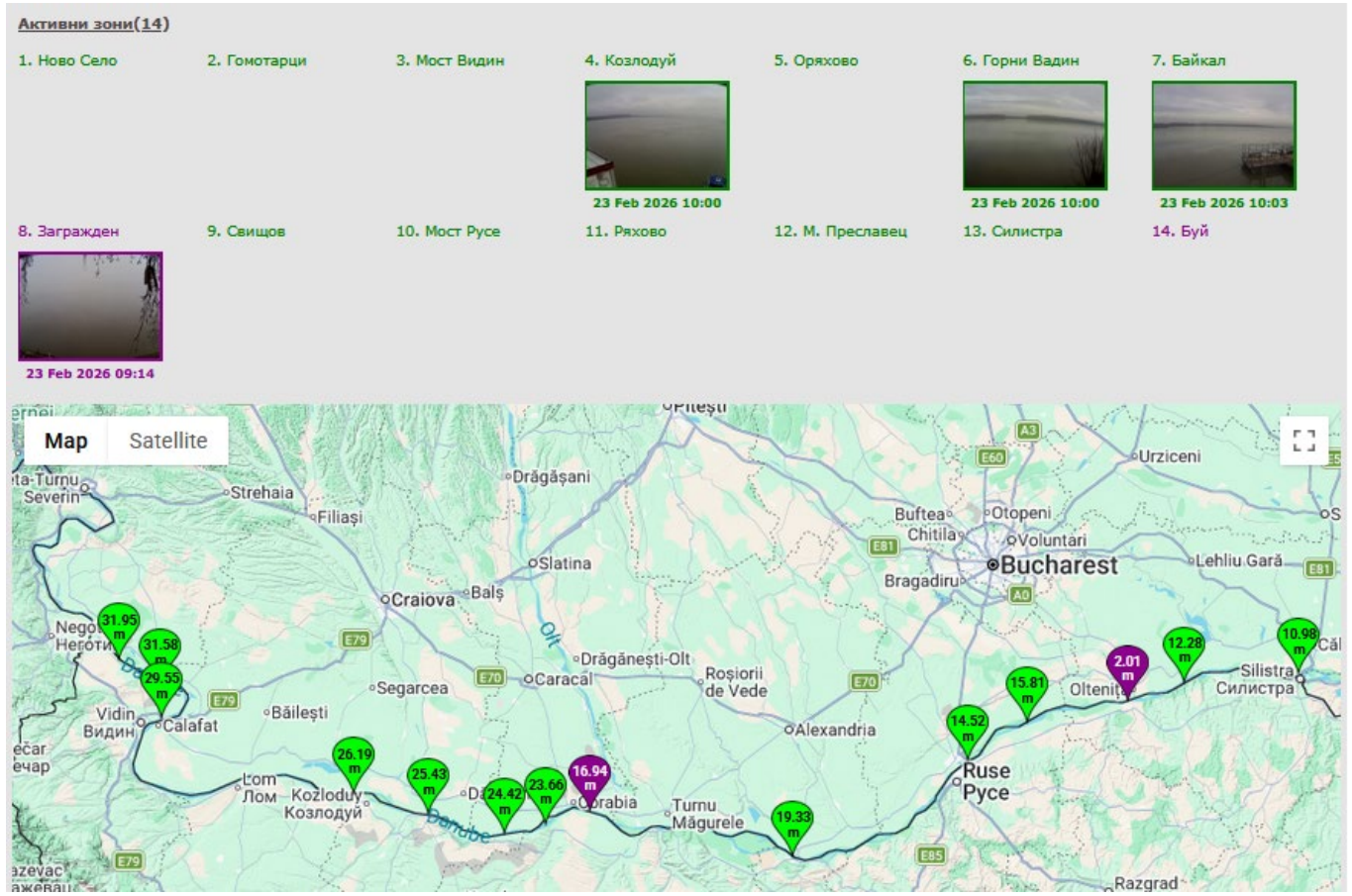
- 6 Automatic Meteorological Stations;
- 2 Automatic Hydrological Stations;
- 3 Automatic Combined Stations.

- **Software for communication, management and data acquisition from the automatic stations**

- **Supply and installation of 12 monitoring cameras for meteorological and hydrological conditions along the river basin.**

The contract was signed on 2 October 2025.
Implementation period: 9 months

Establishment of fixed sensors required for GNS monitoring in 17 locations under FAIRway Danube II



Map of installed sensors

Station Kozloduy – Camera for monitoring of the hydrological and meteorological conditions

Upgrade of water level forecast in Bulgaria under FAIRway Danube II - Advancing Planning Reliability

Agreement regarding technical assistance for forecast provision between INHGA – Romania, AFDJ – Romania and EAEMDR (Bulgaria):

- **Extension of the lead time from 5 days to 7 days (high accuracy - 2 days, for Ruse and Silistra – 3 days);**

- **3 new locations: Novo selo, Vidin, Lom.**

Implementation of new service for communication/ data exchange, integration and publication with INHGA and NIMH - Bulgaria.

Updating all web services and platforms (NtS, bottleneck service and other international exchanges) with new data related to the upgraded forecast

Operational expenditures for conducted activities in 2025 and budget needs in 2026

Areas	Operational expenditures 2025	Required operational budget 2026	Secured operational budget 2026
Minimum fairway parameters (width/depth) – maintenance dredging	1 933 615	4 962 420	4 878 000
Surveying of the riverbed	122 800	151 956	
Water level gauges, Information on water levels and forecasts, Meteorological information	109 156	135 072	
Marking of the fairway	341 113	422 100	
Other	40 934	50 652	
Sum (Euro)	**2 547 618**	**5 722 200**	**4 878 000**

Framework contract for dredging was signed in 2025 for a total volume of 900,000 m^3 for a period of 3 years.
Total budget (VAT incl.): 14 634 000 EUR

Thank you for the attention!

Ivelin Zanev, PhDEng
Executive director

Budapest, Hungary
05 March 2025

Executive Agency
EXPLORATION AND MAINTENANCE OF THE DANUBE RIVER