

Information of Slovak operator of the waterway Danube, Slovak Water Management Enterprise, State Enterprise, on the status of the fairway in 2022 and on the Program for maintenance work of 2023

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1. Introduction – basic information

Responsibility of the Slovak Water Management Enterprise, state company:

- to operate Danube inland waterway of international importance;
- to ensure maintenance and marking of the Danube fairway from r. km 1880,2 – 1708,2 in total length 172 km of Danube river and 42 km Canal of Waterworks Gabčíkovo, at follows sections:

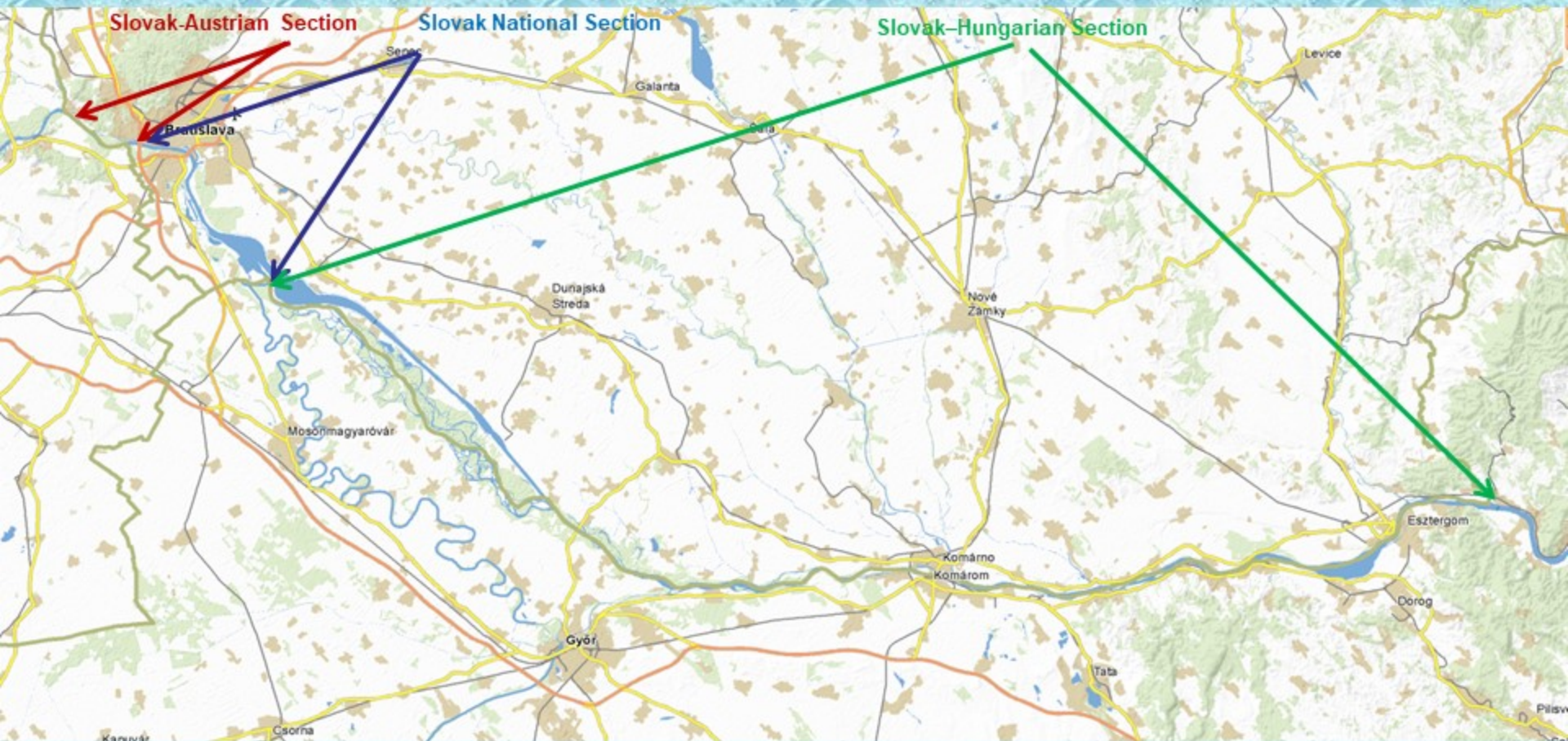
Slovak-Austrian section (7,5 km): r. km 1880,200 – 1872,700

Slovak national section (22,5 km): r. km 1872,700 – 1850,200

Slovak-Hungarian section (142,0 km): r.km 1850,200 – 1708,200

Gabčíkovo waterworks (42 km): r.km 1853,00–1811,00

1. Introduction – situation



2. The state of the main critical sections in 2020 - 2022, including information on the water level

In the monitored sections, there is pay attention to 23 localities, which are defined as critical bottlenecks.

Relevant localities you can see in the table right.

Localities, marked in yellow, they are monitored in the framework of the joint Slovak-Austrian and Slovak-Hungarian Commissions for Boundary Waters.

	location	river km	section
1	Devín	1879,6 - 1879,0	SK-AU
2	Kasmacher	1875,7 - 1875,2	SK-AU
3	Lanfranconi	1871,0 - 1870,7	SK
4	Zemník-Vlčie hrdlo	1864,3 - 1863,8	SK
5	Medved'ov	1808,1 - 1807,6	SK-HU
6	Čičov	1799,0 - 1798,7	SK-HU
7	Vének 3	1797,4 - 1796,6	SK-HU
8	Vének 2	1796,3 - 1795,5	SK-HU
9	Vének 1	1795,5 - 1795,2	SK-HU
10	Klišská Nemá 2	1793,9 - 1793,3	SK-HU
11	Klišská Nemá 1	1792,1 - 1791,6	SK-HU
12	Gonyu	1791,4 - 1791,1	SK-HU
13	Veľké Kosihy 2	1789,2 - 1788,3	SK-HU
14	Veľké Kosihy 1	1786,7 - 1785,9	SK-HU
15	Komárno	1764,3 - 1764,0	SK-HU
16	Patince 2	1757,1 - 1756,7	SK-HU
17	Patince 1	1754,3 - 1754,1	SK-HU
18	Kravany	1740,2 - 1739,8	SK-HU
19	Čenkov	1735,2 - 1733,3	SK-HU
20	Mužla	1732,6 - 1732,2	SK-HU
21	Obid	1726,0 - 1724,4	SK-HU
22	Hron sútok	1714,4 - 1713,9	SK-HU
23	Chľaba	1711,5 - 1710,7	SK-HU

3. Overview of monitoring, restoration and maintenance in 2022 (2019-2022)

From the point of view of navigation conditions, the water levels of the Danube in 2020 were assessed as average and similar to 2019.

In 2021, navigation conditions has improved, but year 2022 was worse for navigation than year 2020.

Low discharges in 2022 resulted to increase of days with restricted navigation conditions at bottlenecks (fords and narrow places).

In period 2020-2022, the year 2022 was year with an largest number of narrow places. At 11 locations, there were 130 and more than 130 days with the occurrence of narrow places. In 2021 there were 4 locations and in 2020 also 4 locations

An overview of the status of the narrow places of the fairway is presented in the next table.

3. Overview of monitoring, restoration and maintenance in 2022 (2019-2022)

Serial number	Location	Section (rkm)	Width	Number of days		
				2020	2021	2022
1	Medveďov	1808,10 – 1807,60	120	47	69	
2	Čičov	1799,00 – 1798,30	100	42	73	94
			110	120	109	130
3	Vének 3	1797,40 – 1796,60	80		73	130
			90	162	78	
			100		31	94
4	Vének 2	1796,30 – 1795,50	100	2	23	26
			110	118	159	198
5	Vének 1	1795,50 – 1795,20	80	18	84	130
			90	24	67	
			100	2	31	94
6	Kližská Nemá 2	1793,90 – 1793,30	80	46	151	130
			100	58	31	94
			110	58		
7	Kližská Nemá 1	1792,10 – 1791,60	100	151	182	224
8	Velké Kosihy 2	1789,20 – 1788,30	120	70	92	151
9	Velké Kosihy 1	1786,70 – 1785,90	120	72	103	170
10	Nyerges	1735,20 – 1733,30	100	150	156	207
11	Obid	1726,00 – 1724,40	130	44	75	138
12	Hron	1714,40 – 1713,90	120	28	29	57
13	Chlaba	1711,50 – 1710,70	100	133	124	192

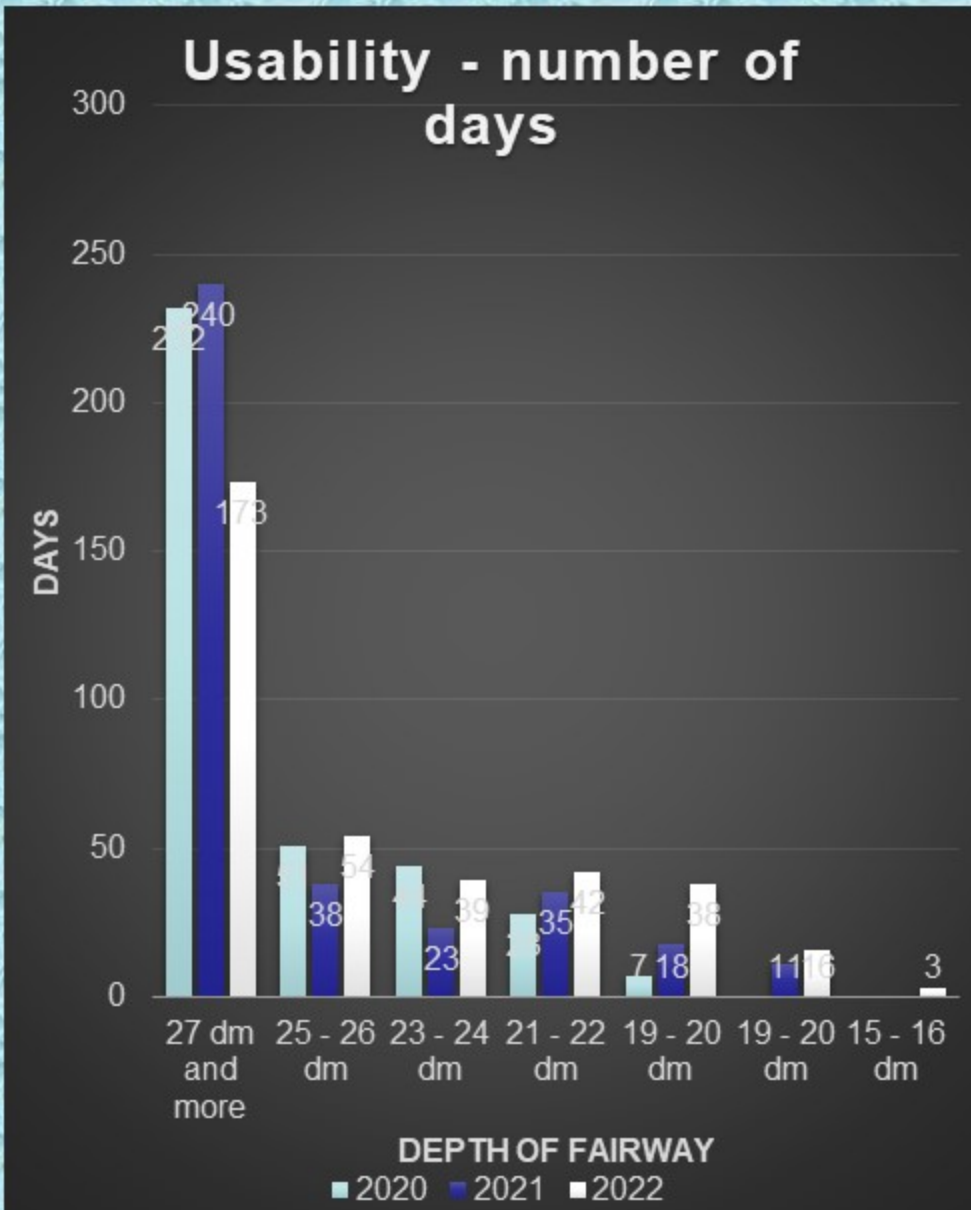
3. Overview of monitoring, restoration and maintenance in 2022 (2019-2022)

The low discharges were also reflected in the number of days with maximum use of vessels for the transport of goods at 100% utilization of vessel capacity. In this assessment, the year 2022 was the most unfriendly.

Depth of fairway	Ship sinking	Use of the ship's cargo space	Usability number of days		
Year			2020	2021	2022
27 dm and more	25 dm and more	100%	232	240	173
25 - 26 dm	23 – 24 dm	80 – 90 %	51	38	54
23 - 24 dm	21 – 22 dm	70 – 80 %	44	23	39
21 - 22 dm	19 – 20 dm	60 – 70 %	28	35	42
19 - 20 dm	17 – 18 dm	50 – 60 %	7	18	38
19 - 20 dm	15 – 16 dm	40 – 50 %		11	16
15 - 16 dm	13 – 14 dm	30 – 40 %			3

3. Overview of monitoring, restoration and maintenance in 2022 (2019-2022)

The low flows were also reflected in the number of days with maximum use of vessels for the transport of goods at 100% utilization of ship capacity. In this assessment, the year 2022 was the most unfavorable.



3. Overview of monitoring, restoration and maintenance in 2022 (2019-2022)

Monitoring of the fairway status is permanent ensured by relevant expert group. Slovak surveying vessels navigated 16.193 km.

It includes:

- The control of navigational signs and marks, along all fairway and the navigational depths and widths at bottlenecks / critical sections of the fairway.
- Fairway monitoring of the waterway by bathymetric measurements of the entire section of the Danube at least once a year and selected critical sections several times a year.

In 2022, bathymetric measurements were taken from April to December.

In 2022, maintenance work was concentrated on 3 bottlenecks / critical sections of the Danube fairway.

3. Overview of monitoring, restoration and maintenance in 2022 (2019-2022)

Regulatory dredging of the national section of the Danube

r. km 1864,5 – 1864,0 - location Vlčie hrdlo

- length 500 m, width 100 m, depth -2,7 m below Low regulatory and navigable water level;
- dredged material in the amount 41.265 m³ of gravel and sand unloaded on the shore / bank (implemented from 26.09.2022 until 15.12.2022)

Regulatory dredging of the Slovak-Hungarian section of the Danube

r. km 1792.20 – 1791.60 - location Kližská Nemá 1

- length 600 m, width 85 m, depth -2.7 m below Low regulatory and navigable water level;
- dredged material in the amount of 16.429 m³ of gravel and sand unloaded on the shore / bank in the area of r. km 1792.50 (implementation from 1.06.2022 until 13.07.2022)

r. km 1786.70 – 1786.00 - location Veľké Kosihy 1

- length 700 m, width 95 m, depth -3.0 m below Low regulatory and navigable water level;
- dredged material in the amount of 16.525 m³ of gravel and sand dumped on the shore / bank in the amount of r. km 1787.60 (implementation from 08.08.2022 until 14.09.2022)

4. Planned activities to ensure navigation in 2023

DREDGING:

Regulatory dredging - national section of the Danube

The amount of 120.000 m³ of material

Regulatory dredging of the Slovak-Hungarian section of the Danube

Amount of 15.000 m³ of material

Regulatory dredging of the Slovak-Austrian section of the Danube

Amount of 10.000 m³ of material

Fairway of Hrušov reservoir

Fairway repair and maintenance of the Danube waterway

r. km 1880-1860 and r. km 1810-1709

Bathymetric measurements of the fairway

5. Operating costs for activities implemented in 2022

Regulatory dredging of the national section of the Danube

rkm 1864,5 – 1864,0 - location Vlčie hrdlo

807 147 €

Regulatory dredging of the Slovak-Hungarian section of the Danube

rkm 1792,20 – 1791,60 - location Kližská Nemá 1

rkm 1786,70 – 1786,00 - location Veľké Kosihy 1

589 237 €

Dredging of the Fairway of Hrušov reservoir

482 401 €

Repair and maintenance of the Danube waterway 1880-1860 and 1810-1709

506 366 €

Bathymetric measurements of the waterway

281 185 €

5. Budget requirements for 2023

Dredging:

Regulatory dredging - national section of the Danube	1 675 000 €
Regulatory dredging of the Slovak - Hungarian section of the Danube	357 500 €
Regulatory dredging of the Slovak - Austrian section of the Danube	319 600 €
Dredging of the Fairway of Hrušov reservoir	400 000 €
<i>Repair and maintenance of the Danube waterway</i>	
1880-1860 and 1810-1709	50 000 €
<i>Bathymetric measurements of the waterway</i>	285 000 €



Thank you for your attention

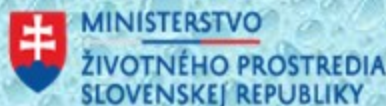
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