**Information on the scenarios and** input **data used for predictive modeling of transboundary hydrological impacts of the planned activity "Reconstruction of construction objects "Creation of a deep-water waterway from the Danube River to the Black Sea in the Ukrainian section of the delta"**

Information on the scenarios and input data used for predictive modeling of the transboundary hydrological impacts of the planned activity is provided in the ATS report on pages 578-590 (subsection 9.4); 594-595 (subsection 9.5); 608-612 (section 9.6); 633-634 (subsection 9.7); 366-637 (subsection 9.8). The pages correspond to the EIA report translated into English.

Flow redistribution calculations between the Bystry and Starostambulsky branches were made for the conditions of water consumption in the Kiliysky branch in the area of Vylkove 6000 m3/s.

The initial data processed and summarized by the general designer, characterizing the changes in the morphology of the sections of the ship’s passage after the reconstruction works, are given in the report from the OVD in tables 1.3 (the second launch complex – 2LC) and 1.4 (the third launch complex – 3LC) on pages 32-37 ( subsection 1.4). The tables contain information on design draft depths, areas and dredged volumes for each of the 27 dredging sections, which fully correspond to the raw data used for predictive modeling.

In order to be more informative, the table additionally contains data averaged over the area of ​​extraction at each site regarding the increase in depth after carrying out the planned dredging works in comparison with the existing state.

The supplemented tables are given below with preservation of the numbering of the tables in the EIA report.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 1.3 -. Volumes of dredging works on the sea and river parts of the DWNF (2LC)** | The average increase in depth in the area of extraction with a slope, m | | **Bar (marine) part (Used diameter of 2019)** | 1.81 |  | **1 section of the river part from 1.534 km to 20.555 km (Used diameter of 2016, including on profiles from 9.400 to 11.200 diameter of 2018)** | 0.6 | 0.61 |  | **2 section of the river part from 20.555 km to 116.000 km (Main diameter of 2016, including diameter of 2019 on profiles: from 35.200 to 38.600, from 46.800 to 49.050, from 60.750 to 66.850, from 71.550 to 74.850, from 79.900 to 85.800, from 90.500 to 92.300)** | 0.79 | 1.13 | 1.92 |
| Laying slopes | Red  edge | 1:6 |  | 1:6 | 1:6 |  | 1:6 | 1:1.5 | 1:1.5 |
| Green edge | 1:4  1:6 |  | 1:6 | 1:6 |  | 1:6 | 1:1.5 | 1:1.5 |
| Volume of dredging works, m3 | with technological overruns | 938 275 | **938 275** | 13 610 | 3 270 | **16 880** | 1 690 | 173 310 | 113 650 |
| without technological overruns | 743 985 | **743 985** | 6 320 | 400 | **6 930** | 210 | 91 585 | 81 090 |
| Scooping area  with a slope/  without a slope, m2 | | 518850 / 322420 | **518850 / 322420** | 15810/ 8025 | 5385/ 5110 | **21195/13135** | 2150/ 1800 | 154120/ 148950 | 64070/ 58880 |
| Design depth,  m BS | | 7.68  8,10 (at the turn) | **All in the sea part** | 6.51 | 6.49 | **In total** | 6.45 | 6.45 | 6.45 |
| Area  of dredging:  Profile No. | | -2+100 - 1+550 | 1+550 – 10+000 | 10+000 -15+000 | 20+500 – 26+000 | 26+000 – 30+900 | 30+900 – 32+700 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **End of table 1.3** | The average increase in depth in the area of extraction with a slope, m  m | | 1.09 | 1.09 | 0.73 | 1.41 | 2.22 | 0.67 | 1.02 | 0.90 | 1.04 | 2.95 |  | **Dredging on the 3rd section of the river section from 116 to 170.36 km is not required** |  |  |
| Laying slopes | Red  edge | 1:1.5 | 1:1.5 | 1:1.5 | 1:3 | 1:2 | 1:6 | 1:1.5 | 1:6 | 1:6 | 1:1.5 |  |  |  |
| Green edge | 1:1.5 | 1:1.5 | 1:1.5 | 1:3 | 1:2 | 1:6 | 1:1.5 | 1:6 | 1:1.5 | 1:1.5 |  |  |  |
| Volume of dredging works, m3 | with technological  overruns | 185 775 | 114 440 | 3795 | 532 065 | 127 605 | 4 700 | 640 | 6 565 | 1 265 | 296 840 | **1 562340** | **1 579 220** | **2 517 495** |
| without technological overruns | 96 210 | 59 455 | 820 | 341 645 | 92 850 | 870 | 350 | 2 870 | 520 | 246 045 | **1 014 520** | **1 021450** | **1 765 435** |
| Scooping area  with a slope/  without a slope, m2 | | 170590/ 164040 | 104470/ 101585 | - / 5220 | 376465/ 348735 | 57610/ 47640 | 7000/ 6500 | 630/170 | 7330/ 5570 | 1215/ 860 | 100595/ 89490 | **1051465/920560** | **The total volume is 1, 2 sections of the river part.** | **The total amount on 2 LC**  **Area: 1 591510 / 1 256115** |
| Design depth,  m BS | | 6.45 | 6.43 | 6.43 | 6.43 | 6.43 | 6.43 | 6.31 | 6.20 | 6.15 | 6.08 | **Total** |
| Area  of dredging:  Profile No. | | 32+700 – 40+000 | 46+000 – 51+000 | 51+000 – 54+000 | 60+700 – 66+000 | 66+000 – 71+000 | 71+000 – 76+000 | 76+000 – 82+000 | 87+000 – 92+000 | 99+000 – 105+000 | 110+000 – 118+200 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Table 1.4 – Volumes of dredging works on the sea and river part of the DWNF (3LC)** | The average increase in depth in the area of extraction with a slope, m | including 2LC | **Bar (marine) part (Used diameter of 2019)** | 4.09 |  | **1 section of the river part from 1.534 km to 20.555 km (Used measurement of 2016, including on profiles from 9+400 to 11+200 measurement of 2018)** | 1.31 | 1.34 | 0.79 |  | **2 section of the river part from 20.555 km to 116.000 km (Main diameter of 2016, including diameter of 2019 on profiles: from 35.200 to 38.600, from 46.800 to 49.050, from 60.750 to 66.850, from 71.550 to 74.850, from 79,900 to 85.800, from 90.500 to 92.300)** | 1.30 | 2.52 |
| only 3LC | 2.42 |  | 1.26 | 1.32 | 0.79 |  | 1.29 | 2.08 |
| Laying slopes | Red  edge | 1:6 |  | 1:6 | 1:6 | 1:6 |  | 1:1.5 | 1:1.5 |
| Green edge | 1:4  1:6 |  | 1:6 | 1:6 | 1:6 |  | 1:6 | 1:6 |
| Volume of dredging works, m3 | with technological  overruns | 1 362 305 | **1 362 305** | 359 810 | 371 720 | 81 020 | **812 550** | 679 120 | 837 280 |
| without technological overruns | 1 119 740 | **1 119 740** | 247 460 | 230 540 | 26 580 | **504 580** | 416 960 | 631 665 |
| Scooping area  with a slope/  without a slope, m2 | | 562610/ 362550 | **562610/362550** | 284745/ 119935 | 280795/ 253535 | 102980/ 92270 | **668520/ 465740** | 525685/ 473735 | 401920/ 373530 |
| Design depth,  m BS | | 10.0  10.5 (at the turn) | **Total in the sea part** | 8.76 | 8.74 | 8.74 | **Total** | 8.71 | 8.71 |
| Area  of dredging:  Profile No. | | -2+100 - 1+550 | 1+550 – 10+000 | 10+000 -15+000 | 15+000 – 20+500 | 20+500 – 26+000 | 26+000 – 30+900 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Continuation of table 1.4** | The average increase in depth in the area of extraction with a slope, m | including 2LC | 2.43 | 2.50 | 2,16 | 1.59 | 0.68 | 3.20 | 1.86 | 1.58 | 1.11 | 0.91 | 1.57 | 1.49 | 1.39 |
| only 3LC | 1.96 | 2.05 | 1.88 | 1.58 | 0.68 | 2.35 | 1.52 | 1.57 | 1.10 | 0.91 | 1.48 | 1.49 | 1.39 |
| Laying slopes | Red  edge | 1:1.5 | 1:1.5 | 1:1.5 | 1:1.5 | 1:1.5 | 1:3 | 1:2 | 1:6 | 1:1.5 | 1:6 | 1:6 | 1:6 | 1:1.5 |
| Green edge | 1:1.5 | 1:1.5 | 1:1.5 | 1:1.5 | 1:1.5 | 1:3 | 1:2 | 1:6 | 1:1.5 | 1:2 | 1:6 | 1:1.5 | 1:1.5 |
| Volume of dredging works, m3 | with technological  overruns | 478 195 | 850 080 | 783 230 | 375 610 | 4 500 | 1 479 220 | 574 920 | 589 845 | 74 015 | 107 125 | 102 015 | 14 265 | 16 605 |
| without technological overruns | 355 010 | 638 250 | 569 590 | 252 415 | 840 | 1 173 485 | 385 235 | 405 210 | 38 135 | 46 995 | 69 310 | 9 025 | 10 365 |
| Scooping area  with a slope/  without a slope, m2 | | 243795/ 231805 | 415190/ 384800 | 416500/ 395165 | 238495/ 229995 | 6670/ 5970 | 629800/ 542965 | 377915/ 345890 | 376620/ 323860 | 67370/ 64245 | 117775/ 100245 | 68990/ 48775 | 9565/ 6495 | 11925/ 11325 |
| Design depth,  m BS | | 8.71 | 8.71 | 8.68 | 8.68 | 8.56 | 8.56 | 8.56 | 8.56 | 8.56 | 8.45 | 8.45 | 8.45 | 8.40 |
| Area  of dredging:  Profile No. | | 30+900 – 32+700 | 32+700 – 40+000 | 46+000 – 51+000 | 51+000 – 54+000 | 54+000 – 60+700 | 60+700 – 66+000 | 66+000 – 71+000 | 71+000 – 76+000 | 76+000 – 82+000 | 82+000 – 87+000 | 87+000 – 92+000 | 92+000 – 96+000 | 96+000 – 99+000 |

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **End of table 1.4** | The average increase in depth in the area of extraction with a slope, m | including 2LC | 1.70 | 1.87 | 3.90 |  | **3 sections of the river section from 116.000 km to 170.360 km (Main measurement of 2016, measurement of 2018 at 65 - 67 miles)** | 0.73 | 1.09 | 1.16 | 1.08 | 0.85 |  |  |  |
| only 3LC | 1.59 | 1.87 | 2.23 |  | 0.73 | 1.09 | 1.16 | 1.08 | 0.85 |  |  |  |
| Laying slopes | Red  edge | 1:6 | 1:6 | 1:1.5 |  | 1:6 | 1:6 | 1:6 | 1:6 | 1:6 |  |  |  |
| Green edge | 1:1.5 | 1:3 | 1:1.5 |  | 1:6 | 1:6 | 1:6 | 1:6 | 1:6 |  |  |  |
| Volume of dredging works, m3 | with technological  overruns | 18 935 | 85 270 | 396 610 | **7 466 840** | 1 535 | 86 795 | 323 400 | 113 315 | 2 215 | **527 260** | **8 806 650** | **10 168 955** |
| without technological overruns | 12 290 | 37 770 | 308 670 | **5 361 220** | 375 | 46 985 | 179 625 | 59 615 | 910 | **287 510** | **6 153 310** | **7 273 050** |
| Scooping area  with a slope/  without a slope, m2 | | 11910/ 9910 | 45650/ 26395 | 177695/ 156640 | **4143470/ 3731745** | 2105/ 1150 | 80010/ 70005 | 279940/ 270050 | 104795/ 99000 | -/ 2610 | **466850 / 442815** | **The total volume in sections 1, 2, 3 of the river part** | **The total amount is 3 LC**  **Area: 5 841450 / 5 002 850** |
| Design depth,  m BS | | 8.40 | 8.33 | 8.33 | **Total** | 8.33 | 8.21 | 8.21 | 8.09 | 8.09 | **Total** |
| Area  of dredging:  Profile No. | | 99+000 – 105+000 | 105+000 – 110+000 | 110+000 – 118+200 | 118+200 – 119+500 | 134+500 – 136+500 | 142+000 – 145+900 | 154+700 – 156+300 | 172+000 – 172+100 |