

State Water Holding Polish Waters
Regional Water Management Authority in Szczecin

**Annex no 1 ENVIRONMENTAL
MANAGEMENT PLAN**

**ODRA-VISTULA FLOOD MANAGEMENT PROJECT –
8524 PL**

Environmental category B – pursuant to the OP 4.01 WB

Component 1:

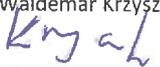
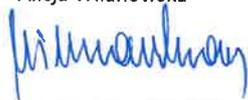
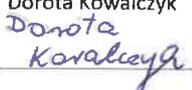
Flood Protection of the Middle and Lower Odra

Subcomponent 1B:

Flood Protection of the Middle and Lower Odra

Contract for works 1B.3/1 Stage 1:

Mooring base for icebreakers

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ODRA – VISTULA FLOOD MANAGEMENT PROJECT

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ENVIRONMENTAL MANAGEMENT PLAN

Component: *1 – Flood Protection of the Middle and Lower Odra*
Subcomponent: *1B – Flood Protection of the Middle and Lower Odra*
Contract: *1B.3/1 Stage I – Mooring base for icebreakers*

Project Implementation Unit:

State Water Holding Polish Waters

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Szczecin, February 2023

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1 INTRODUCTION AND SCOPE OF THE ANNEX

1.1 INTRODUCTION

The scope of Contract 1B.3/1 Stage I: Construction of a mooring base for icebreakers includes, among other things, the dredging works in the area of the wharf of the base for icebreakers with the disposal of dredged material in the dredged material silting fields operated by the Maritime Office.

During the implementation of the Contract, after recognizing all the conditions related to the management of excavated dredged material, the possibility was identified to use the material - uncontaminated sediment transferred within the surface waters, for the purposes of water management and maintenance of waterways, i.e. for the ongoing maintenance of the Odra river bed in a proper, safe condition and prevention of adverse development of the riverbed at the Pomorzan Bridge in Szczecin. Carrying out the activity requires notification to the Regional Director of Environmental Protection in Szczecin and can be implemented only in the absence of objections from the above-mentioned environmental authority.

The implementation of the above river maintenance work in the area of the Pomorzan Bridge in Szczecin requires an appropriate amendment to the EMP in order, in particular, to properly assign the already existing mitigation measures specified for dredging work to the planned maintenance work.

The use of sediment within surface waters for water and waterway management purposes reduces the environmental impacts associated with transporting and depositing the dredged material in silting fields.

1.2 SCOPE OF ANNEX

The addendum takes into account the current assumptions for the implementation of the Task, described in section 1.1. "Introduction", which require for the following changes to the EMP:

- in the text of the EIA, in chapter 2.2. "Task Characteristics" and in chapter 6.8.1., concerning mitigation measures in relation to the natural environment, additional provisions are introduced as described in detail in section 3 to this Annex;
- in Appendix 1 and 2: item 19a is added and items 39 and 47 modified as described in detail in section 3 to this Annex;
- **Annex 12 is added to the EMP: The No-Objection to the Notification of the execution of works under Article 118 of the Law on Nature Protection issued by the Regional Director of Environmental Protection in Szczecin (the Statement issued 27.01.2023, reg. No: WOPN.670.167.2022.DM).**

2 ENVIRONMENTAL AND SOCIAL CONDITIONS RELATED TO THE ANNEX

Changes to the implementation of the Task in question, i.e., allowing dredged material, which represents uncontaminated sediment transferred within surface waters, to be used for water and waterway management purposes, occurred after the development of the EMP.

The original assumption was that all dredged material would be transported for disposal in the dredged material silting fields administered by the Maritime Office. Now, with regard to the native soil, sediment naturally occurring on the river bed (removed during dredging work carried out at the icebreaker base waterfront), the option has been identified to use it for ongoing maintenance of the river bed in a proper, safe condition and to prevent adverse development of the riverbed of the Odra Zachodnia river (the West Oder river) at the Pomorzan Bridge in Szczecin. It is currently assumed that all of the sediment will be used to repair and level the bottom at the above mentioned site. the bridge. Therefore, during the hydrotechnical works, no additional dredging material requiring other management will be obtained.

Bathymetric maps of the area shows that between 2016 and 2018, the river bottom level at the Pomorzan Bridge in Szczecin decreased by more than one metre. Over the past two years, changes in the depth and size of the breach in the bottom indicate that the above-mentioned process is continuing, with the consequence that there will be a further serious risk of damage to the river bottom. The Odra Zachodnia river, i.e. the watercourse on which the works will be carried out, is included in the Water Maintenance Plan (WMP), which is a document adopted as a local law. The PUW defines the responsibilities of the water owner as carried out by the organisational units of the State Water Management Company Wody Polskie (PGW WP). According to the PUW, on the Odra Zachodnia river, maintenance is carried out, inter alia, by filling in breaches in the banks and bottom of inland surface waters and by their biological development. Failure to carry out these tasks may result in the degradation of the waterway and a threat to the safety of the navigable route, or the prevention of navigation altogether. Part of the infrastructure maintained by PGW WP includes navigable waterways, which provide safe passage under bridges and protect both bridge pillars and vessels from damage. PGW WP, based on national regulations (Act of 20 July 2017. *Water law*, art. 227 section 3 (Journal of Laws of 2022, item 2625, as amended) is obliged to maintain public inland surface waters. These activities can be implemented, among others, by filling in gaps in the banks and bottom of inland surface waters.

Sediment tests confirmed that the sediment, consisting of stones, sand and clay, is not hazardous and is suitable in terms of its granulometric and chemical composition for filling in with sediment the breach in the river bed, where bed degradation has recently been found to progress rapidly. Thus, it qualifies as sediment transferred within surface waters for the purpose of water or waterway management, as referred to in Article 2 p. 7 of the Law of December 14, 2012 on waste (consolidated text: Journal of Laws of 2022, item 699 as amended). Sampling and testing of sediment at the icebreaker base under construction was carried out in February 2022. The methodology of the work carried out was in accordance with the Regulation of the Ministry of the Environment of 11 May 2015 on recovery of waste outside installations and equipment (Journal of Laws of 2015, item 796). Sampling and laboratory tests were carried out by a certified laboratory:

National Laboratory of Feedingstuffs, Laboratory in Szczecin at the Institute of Zootechnics - National Research Institute.

The samples of the spoil for testing were collected using the core method from a depth of 0-2.0 below the level of the bottom of the Regalica River.

Six testing points were selected, from which one samples were taken, one from each. The obtained test results vs. the limit values set out in the Attachment 1 to the abovementioned Regulation are shown in the table below.

| Parameter | Concentration in the sample of sediment taken from the sampling point, mg/kg d.m. | | | | | | Limit values, mg/kg d.m.* |
|-------------------------|---|---------|---------|---------|---------|---------|---------------------------|
| | No 1 | No 2 | No 3 | No 4 | No 5 | No 6 | |
| arsenic | <7.00 | <7.00 | <7.00 | <7.00 | 15.2 | <7.00 | < 30.0 |
| chrome | <3.3 | <5.0 | <5.5 | <3.3 | 13.7 | <3.3 | < 200.0 |
| zinc | 16.0 | 5.0 | 29.0 | 23.3 | 165 | 85.2 | < 1000.0 |
| cadmium | <0.5 | <0.5 | <0.5 | <0.5 | 1.6 | 0.7 | < 7.5 |
| copper | 5.5 | 10.3 | 8.8 | 14.4 | 27.7 | 20.8 | < 150.0 |
| nickel | 6.7 | 10.6 | 10.0 | 6.8 | 12.1 | 8.2 | < 75.0 |
| lead | <9.37 | <9.37 | <9.37 | <9.37 | 24.4 | 11.6 | < 200.0 |
| mercury | <0.01 | <0.02 | <0.02 | 0.02 | 0.17 | 0.07 | < 1.0 |
| benzo(a)anthracene | <0.01 | <0.01 | 0.06 | <0.01 | <0.01 | <0.01 | < 1.5 |
| benzo(b)fluoranthene | <0.01 | <0.01 | 0.05 | <0.01 | <0.01 | <0.01 | < 1.5 |
| benzo(k)fluoranthene | <0.01 | <0.01 | 0.02 | <0.01 | <0.01 | <0.01 | < 1.5 |
| benzo(g,h,i)perylene | <0.01 | <0.01 | 0.14 | <0.01 | <0.01 | <0.01 | < 1.0 |
| benzo(a)pyrne | <0.01 | <0.01 | 0.18 | <0.01 | <0.01 | <0.01 | < 1.0 |
| dibenzo(a,h)anthracene | <0.01 | <0.01 | 0.08 | <0.01 | <0.01 | <0.01 | < 1.0 |
| indeno(1,2,3-c,d)pyrene | <0.01 | <0.01 | 0.15 | <0.01 | <0.01 | <0.01 | < 1.0 |
| PCB | <0.0210 | <0.0210 | <0.0210 | <0.0210 | <0.0210 | <0.0210 | < 0.3 |

* in accordance with the Regulation of the Ministry of the Environment of 11 May 2015 on recovery of waste outside installations and equipment (Journal of Laws of 2015, item 796)

Based on the conducted tests, no exceedances of the permissible concentrations specified in Annex 1 to the Regulation of the Minister of the Environment of May 11, 2015 on the recovery of waste outside installations and equipment (Journal of Laws of 2015, item 796) were found.

The repair and leveling of the riverbed at the Pomorzán Bridge, which involves filling a breach in the river bottom with sediment, will be carried out using a vessel with an excavator armed with a scoop (a pontoon on stilts with an excavator with a grapple overhang). A barge with sediment will be temporarily moored to the pontoon for the unloading period. The excavator will retrieve material from the barge and release in from a scoop below the water surface, as close to the bottom as

possible (to minimize negative impacts in the form of, for example, dispersion of sediment, turbidity). Optionally, depending on the availability of barges, unloading will take place directly from the open-bottom barrages.

The figure below shows the source location of the excavated material and the target location, as well as the distance between these locations.



No nature protection areas are located at the site designated for maintenance works within the surface waters as indicated on the map below.



It is expected that the indicated maintenance activities will not have a negative impact on nature with the implementation of mitigation measures, as specified in the EMP for dredging works. In particular, it is envisaged to carry out work in the riverbed outside the period of fish spawning and egg incubation, to measure the concentration of suspended solids and dissolved oxygen in the water, and to use silt curtains designed to control the dispersion of suspended solids. The intended use of sediment within surface waters for water and waterway management purposes reduces the environmental impacts associated with the transportation and deposition of material in dredged material silting fields.

Carrying out the measure requires notification to the Regional Director of Environmental Protection in Szczecin and can be implemented only in the absence of objections from the above-mentioned environmental authority. In view of the above, the scope of the planned work was included in the notification to the Regional Director of Environmental Protection in Szczecin, who raised no objections to the implementation of the measure and did not consider it necessary to specify additional environmental conditions for the implementation of the measure.

3 DESCRIPTION OF THE CHANGES INTRODUCED

3.1 CHANGES IN THE TEXT OF THE EMP

As a result of the conditions described in Section 1.1, the following changes are made to the content of the EMP with regard to the management of dredged material, which represents sediment transferred within surface waters:

In chapter 2.2.

- After the sentence „In accordance with agreements with the Maritime Office in Szczecin the silting fields indicated for execution of the Task are silting fields of “Mańków” and “Dębina” (see Attachment 8)”, the following entry is added:
- *„The dredged material, which constitutes the sediment transferred within the surface water, will be used for water management and waterway maintenance: repairing and leveling the river bottom in km 734.6 of the Odra River at the Pomorzán Bridge in Szczecin”.*

In chapter 6.8.1.

- The sentence: „In order to minimise impacts on bird species and the fauna of the Regalica River, the date of cutting trees and shrubs outside the breeding season and the date of conducting dredging works in the Regalica river bed outside the spawning and egg incubation period were determined”, is replaced with the entry:

„In order to minimise impacts on bird species and the fauna of the Regalica river and Odra river, the date of cutting trees and shrubs outside the breeding season and the date of conducting dredging works in the Regalica river bed and maintenance works in the Odra Zachodnia river outside the spawning and egg incubation period were determined”.

- The sentence: „The works carried out in the Regalica river bed will be subject to permanent environmental supervision by an expert of ichthyology”, is replaced with the entry:

„The works carried out in the Regalica and the Odra Zachodnia river bed will be subject to permanent environmental supervision by an expert of ichthyology”

- The sentence: „Additionally, in order to protect ichthyofauna, it is assumed that dredging works will be stopped in case of high concentrations of suspended solids, as described in the item 47 (Cat. H - Requirements for securing protected natural resources) of the Attachment 1 to the EIA”, is replaced with the entry:

„Additionally, in order to protect ichthyofauna, it is assumed that dredging works and river maintenance works will be stopped in case of high concentrations of suspended

solids, as described in the item 47 (Cat. H - Requirements for securing protected natural resources) of the Attachment 1 to the EIA”

- Above the sentence: „Mitigating activities in the scope of protection of animated nature include in particular the following items in the table in the Attachment 1 of the EMP:”, the following entry is added:

„The dredged material, which constitutes the sediment transferred within the surface water, will be used for water management and waterway maintenance: repairing and leveling the river bottom in km 734.6 of the Odra river at the Pomorzan Bridge in Szczecin”.

3.2 CHANGES IN APPENDICES NO 1 AND 2

As a result of the conditions described in Section 1.1, with regard to the management of dredged material that represents the sediment transferred within surface waters, the EMP minimizing measures in Appendix no. 1 and Appendix no. 2 are amended in the following way:

- item 19 a. is added in Appendix no. 1

| Item | Issue | Place | Mitigation measure | Responsible party |
|------|------------------------------|--------------------------|---|-------------------|
| 19a | Protection of water and soil | Task implementation area | <p>Management of dredged material, representing uncontaminated sediment transferred within surface waters</p> <p>The dredged material, which constitutes the sediment transferred within the surface water, will be used for water management and waterway maintenance: repairing and leveling the river bottom in km 734.6 of the Odra river at the Pomorzan Bridge in Szczecin.</p> <p>The work should be performed:</p> <ul style="list-style-type: none"> • In accordance with the content of the notification of the measure, to which the Regional Director of Environmental Protection in Szczecin did not raise any objections, including in particular the scope of activities minimizing the impact of the conducted activities: nature supervision during the works, use of silt curtains, measurements of the concentration of suspended solids and dissolved oxygen in water. • In accordance with provisions of the EMP dedicated protection of fishes during dredging works (in particular item 47 - Protection of ichthyofauna against increased concentration of suspended solids in river waters; item. 39 - Deadlines for execution of works in the riverbed). • In accordance with provisions of the EMP related to providing the nature environment supervision team (in particular items 103, 104). | Contractor |

Environmental Management Plan – Annex no 1
 Contract for Works 1B.3/1 Stage I – Mooring base for icebreakers

➤ item 19 a. is added in Appendix no.2

| Item | Issue | Subject of monitoring | Place of monitoring | Responsible party | Monitoring method | Period and frequency of monitoring |
|------|------------------------------|---|--------------------------|-------------------|--|---|
| 19a | Protection of water and soil | <p>Management of dredged material, representing uncontaminated sediment transferred within surface waters</p> <p>The dredged material, which constitutes the sediment transferred within the surface water, will be used for water management and waterway maintenance: repairing and leveling the river bottom in km 734.6 of the Odra river at the Pomorzán Bridge in Szczecin.</p> <p>The work should be performed:</p> <ul style="list-style-type: none"> In accordance with the content of the notification of the measure, to which the Regional Director of Environmental Protection in Szczecin did not raise any objections, including in particular the scope of activities minimizing the impact of the conducted activities: nature supervision during the works, use of silt curtains, measurements of the concentration of suspended solids and dissolved oxygen in water. In accordance with provisions of the EMP dedicated protection of fishes during dredging works (in particular item 47 - Protection of ichthyofauna against increased concentration of suspended solids in river waters; item. 39 - Deadlines for execution of works in the riverbed). In accordance with provisions of the EMP related to providing the nature environment supervision team (in particular items 103, 104). | Task implementation area | Contractor's Team | Visual monitoring, verification of documentation concerning sediment management. | During the Task implementation period, on an ongoing basis. |
| | | | | Engineer's Team | Visual monitoring. Verification of the documentation submitted by the Contractor to the Engineer. | During the Task implementation period, on an ongoing basis, at least once a week. |

➤ items 39 and 47 are modified:

| Item * | Measure description – current entry | Measure description in the Annex |
|--------|---|--|
| 39 | <p>Deadlines for execution of works in the Regalica river bed</p> <p>Works interfering with the Regalica river bed should be carried out in the period from 01.08 to 28.02, i.e. outside the period of fish spawning and spawn incubation, which lasts from 1 March to 31 July.</p> | <p>Deadlines for execution of works in the Regalica and Odra Zachodnia river bed</p> <p>Works interfering with the Regalica and Odra Zachodnia river bed should be carried out in the period from 01.08 to 28.02, i.e. outside the period of fish spawning and spawn incubation, which lasts from 1 March to 31 July.</p> |
| 47 | <p>Protection of ichthyofauna against increased concentration of suspended solids in Regalica river waters</p> <p>The works shall be carried out in accordance with the following rules:</p> <ul style="list-style-type: none"> a) in case concentrations of suspended solids higher than 200 mg/l or dissolved oxygen concentrations of < 4 mg O₂/l are found (at monitoring points located approx. 500 m below the work execution site), the intensity of works should be limited (2-hour intervals every 2 hours) and if concentrations of >400 mg/l of suspended solids or <3 mg O₂/l are found, the works should be stopped immediately for at least 24 hours, b) resumption of works after any break caused by exceeding the suspended solids concentration must be preceded by re-measurement of the suspended solids concentration at monitoring points, c) resumption of works may take place only in conditions of the suspended solids concentration below 200 mg/l at monitoring points. <p>Monitoring of suspended solids should be carried out on a daily basis, with measurement after at least 2 hours of works (with normal intensity). If the concentration exceeds 200 mg/l, the measurement must be repeated after a 2-hours break in the works. In parallel with the measurement of suspended solids, dissolved oxygen concentration will be measured. If the value is below 4 mg O₂/l, the works will be stopped for a minimum of 2 hours, and if the value is below 3 mg O₂/l - for a minimum of 24 hours. The oxygen concentration should be measured in the middle of the water column - approx. 1.0 m below the surface.</p> | <p>Protection of ichthyofauna against increased concentration of suspended solids in Regalica and Odra Zachodnia river waters</p> <p>The works shall be carried out in accordance with the following rules:</p> <ul style="list-style-type: none"> a) in case concentrations of suspended solids higher than 200 mg/l or dissolved oxygen concentrations of < 4 mg O₂/l are found (at monitoring points located approx. 500 m below the work execution site), the intensity of works should be limited (2-hour intervals every 2 hours) and if concentrations of >400 mg/l of suspended solids or <3 mg O₂/l are found, the works should be stopped immediately for at least 24 hours, b) resumption of works after any break caused by exceeding the suspended solids concentration must be preceded by re-measurement of the suspended solids concentration at monitoring points, c) resumption of works may take place only in conditions of the suspended solids concentration below 200 mg/l at monitoring points. <p>Monitoring of suspended solids should be carried out on a daily basis, with measurement after at least 2 hours of works (with normal intensity). If the concentration exceeds 200 mg/l, the measurement must be repeated after a 2-hours break in the works. In parallel with the measurement of suspended solids, dissolved oxygen concentration will be measured. If the value is below 4 mg O₂/l, the works will be stopped for a minimum of 2 hours, and if the value is below 3 mg O₂/l - for a minimum of 24 hours. The oxygen concentration should be measured in the middle of the water column - approx. 1.0 m below the surface.</p> |

*item in Appendix no. 1 and Appendix 2 of the EMP

4 PUBLIC CONSULTATIONS

The Environmental Management Plan draft (EMP) for Contract 1B.3/1 Stage I: The construction of a mooring base for icebreakers was subject to public consultations conducted in accordance with the requirements of the World Bank's operational policy (OP 4.01).

The implementation of this Annex No. 1 does not require a renewed public consultation procedure.

The change in the scope of the Contract does not concern the major material scope of the construction of the icebreaker base. It only covers the management of sediments (from dredging) which physical and chemical composition (absence of contamination) allow their use for maintenance works in surface waters.

The use of sediment in the Odra Zachodnia river [the West branch of Odra river], will form part of the current maintenance works carried out by PGW Wody Polskie. The maintenance of watercourses is based on Water Maintenance Plans (WMPs) adopted by local-law act. The purpose of the measure is to fulfil the statutory duties of the authority responsible for water management and waterway maintenance in order to ensure safety on the waterway and safety of bridge use - the measure will limit the degradation processes of the bottom at the Pomorzán Bridge in Szczecin. Such works are not subject to public consultation at this stage. Failure to carry out these tasks may result in the degradation of the waterway and a threat to the safety of the navigable route, or the prevention of navigation altogether. Part of the infrastructure maintained by PGW WP includes navigable waterways, which provide safe passage under bridges and protect both bridge pillars and vessels from damage.

Annex 1 retains all mitigation and monitoring measures contained in the original EMP. These will continue to be applied, including during the dredged sediment management activities. The changes made to the tables of mitigation and monitoring measures are to clarify that the measures do not only apply to works within the Regalica river (branch of Odra river), but also to use of sediment in the Odra Zachodnia river.

The carrying out of the measure and the use of sediment in the Odra Zachodnia river requires a notification to the Regional Director for Environmental Protection in Szczecin and can only be realised in the absence of objections from the aforementioned environmental authority. Therefore, the scope of the planned works was included in the notification to the Regional Director of Environmental Protection in Szczecin. The Authority raised no objections to the implementation of the measure and did not deem it necessary to specify additional environmental conditions for the implementation of the measure. There are no protected areas located at the site where the sediments will be used, and the Regional Director for Environmental Protection in Szczecin concluded that due to the nature and extent of the measure, its implementation will not have a negative impact on legally protected habitats and species.