

ENVIRONMENTAL MANAGEMENT PLAN

ODRA VISTULA FLOOD MANAGEMENT PROJECT - 8524 PL

Environmental Category B - pursuant to 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 1B.8:

Flood protection of Krosno Odrzańskie

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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.8 - Flood protection of Krosno Odrzańskie*

Project Implementation Unit (PIU):

State Water Holding Polish Waters

Regional Water Management Authority in Wrocław

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List of key definitions and abbreviations used in the EMP

Name	Description
World Bank / WB	International Bank for Reconstruction and Development / World Bank
PCU / OVFMP PCU	Project Coordination Unit / Odra Vistula Flood Management Project Coordination Unit
BP	Bank Procedure ¹
Environmental decision / DŚU	Decision on environmental conditions
Investor / Employer / PGW WP RZGW Wrocław / JWP	The State Water Holding Polish Waters The Regional Water Management Authority in Wrocław / ORFP Project Implementation Unit
IMiGW - PIB	Institute of Meteorology and Water Management - National Research Institute
JCWP	Surface Water Body
JCWpd	Ground Water Body
PIU	Project Implementation Unit
Consultant/ Engineer / Contract Engineer	Company or legal person implementing the Technical Assistance Consultant function for the Investor under the ORFP Project
Contract/ Works contract/ Task / Investment	Works contract 1B.7 - WFS Widawa – the rebuilding of the flood management system of the communes and municipalities Czernica, Długołęka, Wisznia Mała and Wrocław
LDP	Local Development Plan
EIA	Environmental Impact Assessment

1 Operational Policies and Procedures of the World Bank are presented in The World Bank Operational Manual, available from: <https://policies.worldbank.org/sites/PPF3/Pages/Manuals/Operational%20Manual.aspx>.

Environmental Management Plan
Contract 1B.8 - Flood protection of Krosno Odrzańskie

Name	Description
OP	World Bank's Operational Policy ¹
PAD	Project Appraisal Document for ORFPP ² or OVFMP ³
HAS Plan	Health and Safety Plan
ORFPP/ ORFP Project	Odra River Basin Flood Protection Project
OVFMP/ OVFM Project	Odra - Vistula Flood Management Project
EMP	Environmental Management Plan
Epidemic	The occurrence of infections or an infectious disease in a given area in a clearly greater number than in the previous period or the occurrence of infections or infectious diseases in a locality where they were not prevalent.
State of epidemic	Legal situation introduced in a given area in connection with the outbreak of an epidemic in order to undertake anti-epidemic and preventive measures specified in the Act of 5 December 2008 <i>on the prevention and combating of infections and infectious diseases in humans</i> (consolidated text: Journal of Laws of 2019, item 1239 as amended) aimed at minimizing the effects of the epidemic.
State of epidemic emergency	Legal situation introduced in a given area due to the risk of an epidemic in order to undertake preventive measures specified in the Act of 5 December 2008 <i>on preventing and combating infections and infectious diseases in humans</i> (Journal of Laws of 2019, item 1239, as amended).
Construction area/construction site	Construction area / construction site mean the places where Permanent Works are to be implemented, including storage locations and work areas to which the Equipment and Materials are to be delivered, as well as other places indicated in the Contract as being part of the Construction Site. The terms "construction area" and "construction site" are terms used interchangeably and understood as "Construction Site" in the Contract Conditions.
RDOŚ	Regional Director for Environmental Protection
PGWdO / PGW	Plan of water management on the Odra River basin area
SCWP	Combined Surface Water Body
EU	European Union

1 See reference for the BP (World Bank Procedure).

2 The document available at the World Bank's website:

<http://documents.worldbank.org/curated/en/552201468145748680/pdf/31771.pdf>

3 The document available at the World Bank's website:

<http://documents.worldbank.org/curated/en/320251467986305800/Poland-Odra-Vistula-Flood-Management-Project>

Environmental Management Plan
Contract 1B.8 - Flood protection of Krosno Odrzańskie

Name	Description
ESHS	Management Strategies and Implementation Plans
C-ESMP	The Contractor's Environmental and Social Management Plan
GUS	Central Statistical Office
Contractor / Task Contractor / Contractor of Part of the Task	Company/legal person performing the Works Contract 1B.7 - WFS Widawa – the rebuilding of the flood management system of the communes and municipalities Czernica, Długoleka, Wisznia Mała and Wrocław.
Road management authority	Organizational unit implementing the responsibilities of the management of public roads in accordance with the act on public roads and the responsibilities of the management of non-public roads.
Natural habitats	<p>The concept of natural habitats used in the text refers to the definition of natural habitats and a specification of their types contained in Council Directive 92/43 / EEC of 21 May 1992 on the protection of natural habitats and wild fauna and flora (OJ EU L 206 from July 22, 1992, as amended).</p> <p>(Polish nomenclature of natural habitats is defined in the Regulation of the Minister of the Environment of 13 April 2010 on natural habitats and species of Community interest, as well as in the criteria for the selection of areas eligible for recognition or designation as Natura 2000 sites (consolidated text OJ 2014 item 1713), this regulation defines, among others, types of natural habitats of Community interest that require protection in the form of designation of Natura 2000 sites, with an indication of priority natural habitat types)</p>

List of short names for legal acts used in EMP

Names of legal acts cited in the content of EMP are provided in a short form. Full names of legal acts are cited in the list below.

In-text name	Full name (including publication reference)
Birds Directive/BD	European Parliament and Council Directive 2009/147/EC of 30 November 2009 on wild birds protection (OJ UE L 20/7 of 26.01.2010, as amended)
Habitat Directive/HD	Council Directive 92/43/EEC of 21 May 1992 on the protection of natural habitats and wild fauna and flora (EU Official Journal, L 206 of 22.07.1992, as amended.)
Water Framework Directive (FWD)	Directive 2000/60/EC of the European Parliament and Council of October 23rd, 2000 establishing a framework for Community action in the field of water policy (EU Official Journal L 327 of 22.12.2000, as amended)
EIA Regulation	Regulation of the Council of Ministers dated 9 November 2010 <i>on projects likely to have significant effects on the environment</i> (consolidated text, Journal of Laws of 2016, item 71). The abovementioned regulation was repealed by the ordinance of the Council of Ministers of September 10, 2019 <i>on projects likely to have significant effects on the environment</i> (Journal of Laws of 2019, item 1839). However, the provisions in force prior to the entry into force of the repealing Regulation applied to this Task.
EIA Act	Act of October 3, 2008 on Providing Information on the Environment and Environmental Protection, Public Participation in Environmental Protection and on Environmental Impact Assessment (consolidated text: Journal of Laws of 2020 item 283, as amended).
Act on Public Roads	The Act of 21 March 1985 on Public Roads (consolidated text, Journal of Laws of 2018, item 2068)
Environment Protection Act	The Environment Protection Act of 16 April 2004 (consolidated text, Journal of Laws of 2018, item 1614, as amended)
Monuments Protection Act	Monuments protection and guardianship act of 23 July 2003 (consolidated text, Journal of Laws of 2020, item 282)
Waste Act	The Waste Act of 14 December 2012 (consolidated text, Journal of Laws of 2018, item 992, as amended)
Inland Fishing Act	The Inland Fishing Act of 18 April 1985 (consolidated text, Journal of Laws of 2018, item 1476)
Construction Law Act	The Construction Law Act of 07 July 1994 (consolidated text, Journal of Laws of 2018, item 1202, as amended)
Environmental Protection Law Act	The Environmental Protection Law Act of 27 April 2001 (consolidated text, Journal of Laws of 2018, item 799, as amended)

Environmental Management Plan

Contract 1B.8 - Flood protection of Krosno Odrzańskie

In-text name	Full name (including publication reference)
Water Law Act	The Water Law Act of 20 July 2017 (Journal of Laws of 2020, item 310, as amended)

SUMMARY

This Environmental Management Plan (EMP) refers to the Task 1B.8 - Flood protection of Krosno Odrzańskie, constituting an element of Odra-Vistula Flood Management Project (OVFMP) implemented as Contract: *1B.8*

The following information is presented in particular in this EMP:

- brief description of the OVFMP Project and its Component 1, which the subject Task is a part of (chapter 1.1 and 1.2);
- description of the Task being the subject of this EMP (chapter 2);
- characteristics of the institutional, legal and administrative conditions for the implementation of the Task, including the current state of EIA procedure for the Task (chapter 3);
- description of the individual elements of the environment in the vicinity of the Task (chapter 4);
- summary of evaluation of environmental impacts for the Task (chapter 5);
- description of mitigation measures, aimed at eliminating or limiting the potential negative environmental impact of the Task (chapter 6), with a table presenting such measures (Annex No. 1 to the EMP);
- description of environmental monitoring measures, valid for the Task (chapter 7), with a table presenting such measures (Annex No. 2 to the EMP);
- description of the process of public consultations performed at the respective stages of the preparation of environmental documentation for the Task (chapter 8);
- description of the organisational structure for the implementation of the EMP (chapter 9);
- schedule of the EMP implementation and a description of reporting procedures (chapter 10);
- list of reference documents quoted in the EMP (chapter 11);
- list of Annexes to the EMP (chapter 12);
- copies of administrative decisions related to environmental protection, issued for the Task (Annex No. 4),

Characteristics of the Task

The Task concerns construction of new ring flood embankments, retaining walls and mobile flood protection systems, as well as extension or reconstruction of flood control channels along with the installation of backwater valves on the existing storm water drainage system. State Water Holding Polish Waters - Regional Water Management Authority in Wrocław is the Project Implementation Unit (PIU).

The purpose of the Task is to improve flood protection in the southern part of the city of Krosno Odrzańskie. Given the current state of Krosno Odrzańskie flood protection, 1 012 residents are at risk of centenary water occurrence ($p = 1\%$). Several hundred buildings are at risk of flooding, including mainly residential buildings in an area of approximately 60 ha. 31 objects entered in the register of monuments will also be protected.

As part of the Task (see map in Annex 7 to the EMP), the construction of ring embankments is planned, which will surround and protect only individual built-up areas of southern Krosno

Odrzańskie, which will be surrounded by the embankments. The newly built embankments will not, however, limit natural flooding in the remaining floodplain area and will not constitute a migration barrier for aquatic organisms.

Scope of the Task

The whole Task 1B.8 - *Flood protection of Krosno Odrzańskie* covers the construction of 9 new ring flood embankments, retaining walls and mobile flood protection systems with a total length of 5,926.3 m, as well as the extension or reconstruction of four flood control channels along with the installation of backwater valves on the existing storm water drainage system with a total length of 2 757.8 m. This task is implemented as a part of Odra-Vistula Flood Management Project (OVFMP) aiming at protecting the city of Krosno Odrzańskie from flooding.

Institutional, legal and administrative conditions

In accordance with the national regulations of the *Regulation of the Council of Ministers of November 9, 2010 on projects that may have a significant impact on the environment* (

*Journal Of Laws of 2016 item 71*¹ **Construction of flood protection structures (including embankments and flood control channels) constitutes an investment, which can potentially affect environment** - and thus, requires obtaining an Environmental Approval.

The Task, with regard to its characteristics, to the expected potential environmental impacts and location in relation to protected areas, will be implemented in accordance with relevant national regulations on environmental protection in this scope.

The proposed works are set out under item “**1_492_O**” of List No. 1 of the Annex No. 2 to the Master Plan for the Odra river basin (2014) “Investments that do not adversely affect the achievement of good water status or do not worsen the status of water”.

Status of administrative procedures in scope of the EIA

The Regional Director for Environmental Protection in Gorzów Wielkopolski has conducted an Environmental Impact Assessment for the Task. The proceeding was finalized with issuing the decision of the Regional Director for Environmental Protection in Gorzów Wielkopolski on Environmental Conditions (sign.: WZŚ.4233.1.2016.AN).

The copy of the Environmental Approval can be found in Annex 4a.

¹ This regulation has been overruled by the Regulation of the Council of Ministers of September 10, 2019 *on projects that may have a significant impact on the environment* (*Journal Of Laws of 2019 item 1839*). Nevertheless, regulations in force before the overruling regulation became effective, are applicable to the subject Task.

Condition of environment elements in the surroundings of the Task

As a result of works related to the identification of natural and cultural heritage, it has been determined that the area of the Task implementation and its surroundings are characterized, i.a., by the following environmental conditions - the planned works are located in:

- the catchment area of two Uniform Bodies of Surface Water - UBSW: Stara Odra, code: RW6000231598 and Odra from Czarna Struga to Nysa Łużycka, code RW6000211739
- within the limits of two Natura 2000 sites: PLB 080004 Dolina Środkowej Odry and PLH080072 Krośnieńska Dolina Odry
- in the vicinity of protected cultural heritage objects.

Summary of the environmental impact assessment

Landscape and earth surface

Changes in the landscape will be associated primarily with the removal of vegetation, but also with the creation of new elements - earth embankment structures, walls with stone cladding. The works are planned in the manner supposed to limit tree felling to a maximum, which should allow to preserve high landscape value of several embankment sections.

Climate

Implementation of the Task does not have an impact on the climate condition.

Atmospheric air

The impact of Task implementation on the air quality is limited in time to the construction phase and is not significant.

Soil and land

In the scale of the whole Task, impacts on soil condition are of low significance. Works implementation is related to interference with the top surface of soil (topsoil stripping) and it will be restored in the areas of temporary occupation after the completion of works.

Surface waters

The Task includes two activities that may have a potential impact on ecosystems of the river and habitats directly dependent on water - construction of flood embankments and deepening of flood control channels, however, they have an insignificant impact on aquatic organisms and affect other elements of surface water quality assessment to a small extent. The low degree of impact results from the fact that circular embankments of the built-up areas in the southern part of Krosno Odrzańskie will be constructed, which will not limit natural flooding in the floodplain within the Odra Valley and will not affect the migration of aquatic organisms. In turn, dredging works will be carried out only in the bypass channels activated mainly during the flood period.

Ground water

The Task does not involve any uptake or change of the underground water feeding, also no factor which may worsen the condition of underground water has been identified. During construction works there is a probability of short-term spills of substances such as fuel, oils, however their scale and range will be small and will not cause groundwater pollution.

Acoustic climate

The distance between the area where works will be carried out and the housing development (areas covered by acoustic protection) varies depending on the element of the investment. The closest housing development is located along the northern bank of the channel no. 1. Due to the above, the implementation of construction works will take place during the daytime.

Flora and fauna

Implementation of some of the sections within the Task will have an impact on natural habitats present in the vicinity of the embankment or in its new locations. However, only land which makes up a small percentage of the resources of the Natura 2000 Krośnieńska Dolina Odry natural habitat will be impoverished (it will undergo land use change). Activities in the flood control channels will cause damage to floating and submerged plants, however, after the works are completed, the vegetation will quickly return to the channels and their banks. Task Implementation will not have a significant impact on fauna. Due to the scope of the planned tree removal, in order to minimize the potential negative impact of the planned Task on birds, the removal of trees and shrubs must be carried out outside the breeding season of birds, i.e. in September-February.

Monuments of culture

The conducted works will not interfere directly with buildings and other structures listed in the commune register of monuments and/or register of monuments, therefore at the stage of implementation and operation of the Task, there will be no negative impact on such objects.

The purpose of the Task is to improve flood protection. Buildings and facilities in the area of approx. 60 ha in the southern part of Krosno Odrzańskie, including 31 objects entered in the register of monuments will also be protected.

Human health and safety

Task implementation does not generate essential threats to human health or safety. They may occur in the event of an emergency, catastrophes and other random events (such as, e.g.: contamination spillage, fire, discovery of unexploded shells, flood). Relevant conditions aimed at preventing the occurrence of events posing threat to health and safety and at minimizing their possible effects are set out in the EMP.

The Task implementation will improve flood protection of Krosno Odrzańskie. Approximately ca. 1000 inhabitants will be directly protected against flood.

Mitigation and monitoring measures

Chapter 6 and 7 and Annex No. 1 and 2 of the EMP describe and present in a table a set of mitigation and monitoring measures aimed to limit or eliminate adverse impacts of Task implementation on the environment and ensuring the effective implementation of the EMP conditions. The measures contain both, the conditions specified in the administrative decision issued for the Task, as well as the conditions formulated at the stage of developing the EMP. The Contractor covers all the costs of the EMP under the contract, and the agreed contract price covers all the costs associated with it.

Public consultations

Chapter 8 of the EMP presents an account of public consultations carried out under the environmental impact assessment procedure for the planned Task, including:

- public consultations for the document under the title: “*Environmental and Social Management Framework*” for the OVFMP project (2015);
- public consultations for this Environmental Management Plan - the final version of the EMP content got supplemented with that account after conducting the procedure of publicizing the EMP draft and after the public consultations concerning it were completed.

1. INTRODUCTION

This Environmental Management Plan (EMP) refers to the Task 1B.8 - *Flood protection of Krosno Odrzańskie*, constituting an element of Odra-Vistula Flood Management Project (OVFMP) implemented as Contract: **1B.8**

1.1. ODRA-VISTULA FLOOD MANAGEMENT PROJECT (OVFMP)

The Odra-Vistula Flood Management Project (OVFMP) is aimed at increasing the flood protection level of people living in the selected areas of the Odra river basin and the Upper Vistula river basin as well as institutional strengthening of governmental administration in the scope of ensuring a more effective protection against summer floods, winter floods and flash floods.

The Project consists of five components:

Component 1 – Flood Protection of the Middle and Lower Odra, including:

Sub-component 1A - Flood Protection of areas in Zachodniopomorskie Province;

Sub-component 1B - Flood protection of the Middle and Lower Odra

Sub-component 1C - Flood protection of Słubice city

Component 2 – Component 3 – Flood Protection of Nysa Klodzka Valley, including:

Sub-component 2A – Active protection;

Sub-component 2B – Passive protection.

Component 3 – Flood Protection of the Upper Vistula River, including:

Subcomponent 3A – Flood Protection of Upper Vistula Towns and Cracow

Subcomponent 3B – Flood Protection of Sandomierz and Tarnobrzeg.

Subcomponent 3C – Passive and active protection in the Raba Sub-basin;

Subcomponent 3D – Passive and Active Protection in San basin;

Component 4 - Institutional strengthening and enhanced forecasting

Component 5 - Project Management and Studies

Detailed information and additional documents concerning the OVFMP Project are available on the website of the Project Coordination Unit for the Odra – Vistula Flood Management Project (<http://odrapcu2019.odrapcu.pl/>) and on the website of the World Bank (<http://documents.worldbank.org/curated/en/docsearch/projects/P147460>).

1.2. FLOOD PROTECTION OF THE MIDDLE AND LOWER ODRA (COMPONENT 1 OVFMP)

Component 1 OVFMP “*Flood Protection of the Middle and Lower Odra*” aims at flood protection by strengthening protection against summer and winter floods in localities along the Odra River.

3 Sub-components are implemented under Component 1:

Sub-component 1A - Flood Protection of areas in Zachodniopomorskie Province;

Sub-component 1B - Flood protection of the Middle and Lower Odra;

Sub-component 1C Flood protection of Słubice city.

Sub-Component 1B consists of the following tasks:

- 1B.1/1 (a). Reconstruction of river control infrastructure on the Odra River - adaptation to the conditions of Class III waterway, on the section from the village of Ścinawa to the estuary of the Nysa Łużycka River - STAGE II
- 1B.1/1 (b). Reconstruction of the road bridge in Krosno Odrzańskie with access roads.
- 1B.2. Modernization works on boundary sections of Odra River. Stage I – Modernization works to ensure winter ice – breaking.
- 1 B.3/1 Stage I - Construction of a mooring base for icebreakers,
- 1B.3/2 Stage II - The construction of docking - mooring infrastructure on the Lower Odra River and on boundary sections of Odra River as well as new aids to navigation.
- 1B.4/1. Improving flood water -flow during winter from Dąbie Lake.
- 1B.4/2. Dredging of the Klucz-Ustowo ditch.
- 1B.5/1. Reconstruction of bridge to ensure a minimum clearance - Railway bridge km 733.7 Regalica River in Szczecin.
- 1B.5/2. Reconstruction of bridge to ensure a minimum clearance - Road bridge km 2.45 Warta River, Kostrzyn nad Odrą.
- 1B.5/3. Reconstruction of bridge to ensure a minimum clearance - Railway bridge at km 615.1 of the Odra River in Kostrzyn nad Odrą.
- 1B.6. Flood protection of Nowa Sól and below Krosno Odrzańskie.
 - 1B.6/1. Nowa Sól stage I and II.
 - 1B.6/2. Wężyska - Chlebowo.
- 1B.7. WFS Widawa – the rebuilding of the flood management system of the communes and municipalities Czernica, Długoleka, Wisznia Mała and Wrocław.
- 1B.8. Flood protection of Krosno Odrzańskie.

2. TASK DESCRIPTION - 1B.8

The subject Task of this EMP is a construction investment in flood management structures under the name: “Flood protection of Krosno Odrzańskie. State Water Holding Polish Waters - Regional Water Management Authority in Wrocław is the Project Implementation Unit (PIU).

The proposed works are set out under item “**ID 1_492_O: Flood protection of Krosno Odrzańskie**” of List No. 1 of the Annex No. 2 to the Master Plan for the Odra river basin (2014) “Investments that do not adversely affect the achievement of good water status or do not worsen the status of water”.

2.1. LOCATION OF THE TASK

The Task will be implemented on the left bank of the Odra valley, between km 513.5 and 514.7 of the Odra river, in the southern part of the city of Krosno Odrzańskie, Lubuskie voivodship, Krosno powiat, Krosno Odrzańskie commune, in precincts 0002 - Krosno Odrzańskie city, 0016 - Stary Raduszc and in the Dąbie commune, precinct 0013 - Połupin.

In accordance with the issued Investment Project Implementation Permit (decision of the Lubuskie Voivode No. 12/2018 of June 11, 2019, sign.: IB-II.7820.12.2018.MSto), the plots on which the designed embankments and flood control channels will be located have become the property of the State Treasury.

The Task is located within two UBSW's:

- Stara Odra, code RW6000231598,
- Odra from Czarna Struga to Nysa Łużycka, code RW6000211739.

The Task is partially located within the following forms of nature conservation:

- Protected landscape area “Krośnieńska Dolina Odry”,
- Natura 2000 - Special Protection Area (SPA) PLB 080004 Middle Odra Valley
- Natura 2000 - Special Area of Conservation (SAC) PLH080072 Krośnieńska Dolina Odry.

There are two natural monuments within the Task implementation area range - pedunculate oaks, growing within the boundaries of the Krosno Odrzańskie city.

The Task location is presented in the figure below. Roman figures from I to IX indicate the individual sections of flood embankments in accordance with the description of the Task in section 2.2.

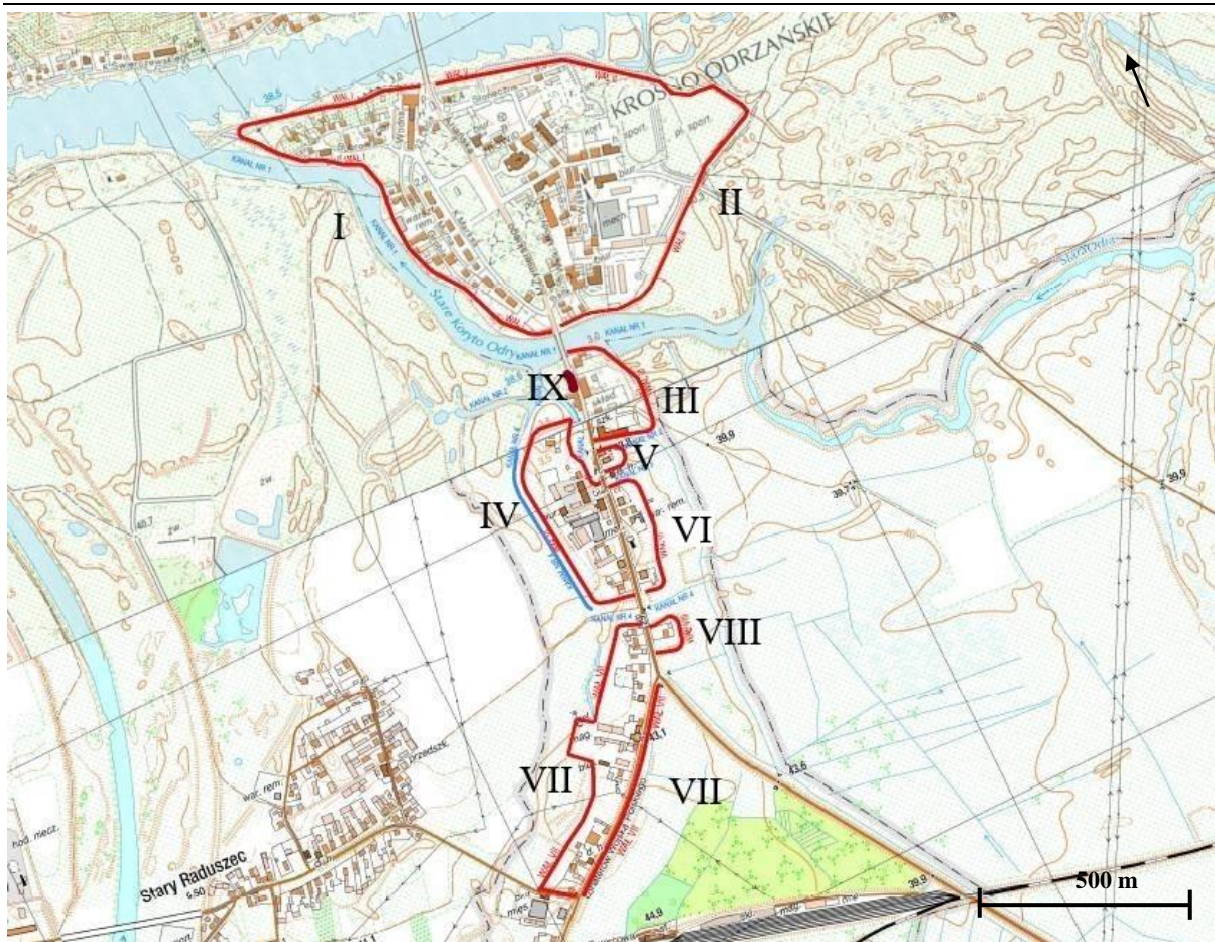


Fig. 1. Location of the Task elements

2.2. TASK CHARACTERISTICS

The scope of the Task covers a part of the Krosno Odrzańskie city located on the left bank of Odra river. The purpose of the Task is to improve flood protection of Krosno Odrzańskie. With the current status of Krosno Odrzańskie flood protection, 1 012 residents are at risk in case of centenary water ($p = 1\%$) occurrence. Several hundred buildings are at risk of flooding, mainly residential buildings. 31 objects entered in the register of monuments will be protected.

The Task covers:

Construction of new flood management facilities, including:

1. Embankment I - construction of new flood management facilities at km 0+000 + 1+279 - from the bridge on the left bank of The Odra river along Trakt Książęcy (previously named Ariańska St. ¹⁾) down the river, then along the right bank of the flood control channel no. 1 up to the N-2 bridge in Bohaterów Wojska Polskiego St.;
2. Embankment II - construction of new flood management facilities at km 0+000 + 1+387.6 - up the river from the bridge on the left bank of the Odra river along Trakt Książęcy St., and then via the western edge of the Połupin polder, further along the right

¹ Resolution No. XXXVIII/333/17 of the City Council in Krosno Odrzańskie of 29 August 2017 regarding the change of name and route of the street in Krosno Odrzańskie

- bank of the flood control channel No. 1 to the N-2 bridge in Bohaterów Wojska Polskiego St.;
3. Embankment III - construction of new flood management facilities at km 0+000 + 0+454,3 - route of the embankment runs on the left bank of the flood control channel No. 1, from the N-2 bridge in Bohaterów Wojska Polskiego St. up the channel, further along the eastern outskirts of the city on the Pałupin polder side, and then along the right bank of the flood control channel No. 2 to the bridge N-3 in Bohaterów Wojska Polskiego St.;
 4. Embankment IV - construction of new flood management facilities at km 0+000 + 0+757 - the route of the embankment starts on the left bank of the flood control channel No. 3, runs down the river from the bridge N-4 in Bohaterów Wojska Polskiego St., further along the left bank of the flood control channel No. 2, and then runs up on the right bank of the channel's No. 4 new route and to the roadway embankment of Bohaterów Wojska Polskiego St.;
 5. Embankment V - construction of new flood management facilities at km 0+000 + 0+123,9 - route of the embankment runs on the left bank of the flood control channel No. 2 from the N-3 bridge along Bohaterów Wojska Polskiego St. up the channel, then along the western edge of the Pałupin polder, further along the right bank of the flood control channel No. 3 to the bridge N-4 which is also located in Bohaterów Wojska Polskiego St.;
 6. Embankment VI - construction of new flood management facilities at km 0+000 + 0+352,7 - begins on the left bank of the flood control channel No. 3 from the N-4 bridge in Bohaterów Wojska Polskiego St. up the channel, then along the western edge of the Pałupin polder, further along the right bank of the flood control channel No. 4 to the roadway embankment of Bohaterów Wojska Polskiego St.;
 7. Embankment VII - construction of new flood management facilities at km 0+000 + 1+304.7 - the route runs from the arch bridge within the intersection of Bohaterów Wojska Polskiego St. (district road) with the national road No. 29, further along the roadway embankment of the district road (Bohaterów Wojska Polskiego St.) to the intersection with the road to Raduszec, then it changes direction and runs along the eastern outskirts of the city towards channel No. 4 to change direction again along the left bank of flood control channel No. 4 up the channel and to the N-5 bridge located in Bohaterów Wojska Polskiego St.;
 8. Embankment VIII - construction of new flood management facilities at km 0+000 + 0+190,3 - embankment begins on the left bank of the flood control channel No. 4 from the N-5 bridge in Bohaterów Wojska Polskiego St. (national road No. 29), up the channel, then it changes direction to southerly and runs on the western edgings of the Połupin polder and changes direction again to run towards the roadway embankment of Bohaterów Wojska Polskiego St.;
 9. Embankment IX - construction of new flood management facilities at km 0+000 + 0+076,8 - located on the western side of the national road No. 32 by the Bohaterów Wojska Polskiego St. It has its origins on the left bank and runs from the downstream side of the N-2 bridge southwards through plot 232 to the building on the edge of the plot No. 231/1.;

Reconstruction and transformation of the banks of flood control channels along with assembly of backwater non-return valves on the existing storm water drainage system.

- Flood control channel No. 1: km 0+072 + 1+257 also called Kanał Miejski (the City Channel) - one section of the channel is to be reconstructed, from its outfall to Odra, mainly on the left bank below the bridge in Trakt Książęcy Street (previously named Ariańska Street) up above the N-2 bridge to the Pałupin polder;
- The flood control channel No. 2: km 0+169,3 + 0+551,9 - runs down the Odra river valley and through a short copular channel No. 2a is also a left-bank tributary of the flood control channel No.1. It has its origins in the Odra valley and on the left side of the flood control channel No.1 below the N-2 bridge. It ends above the N-3 bridge on the Połupin polder side. The middle and upper section of the channel is subject to reconstruction.
 - to km 0+169.3 - cleaning and maintenance works
 - reconstruction and strengthening on the remaining section;
- Flood control channel No. 2a is a short copular channel about 60 m long, connecting channel No. 2 with the channel No. 1. The whole channel is subject to reconstruction
- Flood control channel No. 3: km 0+000 + 0+165 - its function is to direct the flood waters from the Połupin polder to below the N-4 bridge. It outfalls into the flood control channel No. 2 below the N-4 bridge
- Flood control channel No. 4: km 0 +000 + 0+792.8 - its function is to direct the flood waters from the Połupin polder to below the N-5 bridge. It outfalls into the flood control channel No. 2 below the N-5 bridge

Furthermore, the following works are to be executed within the Task:

- construction of embankment culverts with non-return valves, a grate at the inlet and outlet and a valve gate in the pipeline, in total 2 structures;
- construction of road culverts within the constructed or reconstructed surrounding drainage trenches as well as roadside ditches, in total 4 structures;
- construction of an embankment-side service road running on the land-side slope shelf or on its crest;
- construction of embankment-side or retaining wall-side footpaths;
- construction of embankment exits and passageways, in total 20 structures;
- construction of passing loops within the service roads, in total 3 structures;
- construction of u-turn loops or vehicle maneuvering yards, in total 6 structures;
- construction of slope stairs for the foot traffic on the embankments, in total 10 structures;
- installation of rotary and fixed gate barriers, fixed bollards with hinged parking blockades on the crest as well as installation of traffic signs where the embankment service roads join public roads.
- securing intersection points with existing and planned underground networks;
- drainage of land side and inter-embankment zones with sectional pipe drainage, with stone by-slope drainage or with sectional, open - surrounding drainage trenches.
- at the intersection with the planned embankments - backfilling of sections of open ditches along with the reconstruction/construction of new sections or with ditch enclosures;

backfilling, raising and leveling of the area within the constructed embankments.

2.2.1. TECHNICAL PARAMETERS AND DESIGN SOLUTIONS FOR EMBANKMENTS AND FLOOD PROTECTION STRUCTURES:

The total length of the designed embankments is 5,926.3 m, including:

- construction of a new embankment I - 1279.0 m
- construction of a new embankment II - 1387, 6 m
- construction of a new embankment III - 454.3 m
- construction of a new embankment IV - 757, 0 m
- construction of a new embankment V - 123.9 m
- construction of a new embankment VI - 352.7 m
- construction of a new embankment VII - 1304, 7 m
- construction of a new embankment VIII - 190, 3 m
- construction of a new embankment IX - 42.5 m

Total length of reconstruction, extension and construction of channels 2,536.0 m, including:

- Flood control channel No. 1 on the section at km 0+072÷1+257 - 1185.0 m - 0+000 - 0+072 - desludging of the channel; 0+072-1+257 - reconstruction and extension of the channel cross section (i.e. slopes and bottom)
- Flood control channel No. 2 on the section at km 0+169÷0+552 – 383, 0 m - 0+000-0+169 cleaning and maintenance of the channel bed by mowing the slopes, pruning, clearing the area (without dredging works); 0+0169-0+552 - reconstruction and extension of the cross section
- Flood control channel No. 2a - 60.0 m - at km 0+000 – 0+060 reconstruction of the cross section
- Flood control channel No. 3 - 115.0 m - reconstruction and extension of the cross section over the entire section
- Flood control channel No. 4 on the section at km 0+000 ÷ 0+793 -793,0 m - reconstruction and extension of the channel bed in accordance with the designed cross-section, km 0+100-0+550 - new channel bed construction, including construction of a double track culvert at km 0+519,5-532,5; Reconstruction and extension of the channel bed in accordance with the designed ordinates at km 0+0550-0+793.

On the basis of the channel inspection carried out by the Consultant, the desludging will concern:

- flood control channel No. 1 - about 70% of works will include extraction of spoil from water, the remaining works are to be executed outside water,
- the other channels - about 15% of works will include extraction of spoil from water, the remaining works are to be executed outside water

Design parameters of embankments / flood protection structures:

- construction of earth embankments:
 - crest width: 3.50 to 4.50 m
 - width of an embankment-side bench: 4.50 m
 - service road width: 3.00 m

- transverse slope of the embankment crest and road: 2%
- water-side slope inclination: 1: 3 to 1: 2
- Land-side slope inclination: 1: 3 to 1: 2
- average embankment height: 1.00 to 4.50 m
- construction of earth embankments and / or retaining walls
 - width of the earth embankment crest: 2.50 to 4.50 m
 - service road / footpath width: 4.50 m
 - land/water-side slope: 1: 3 to 1: n (n- existing)
 - transverse slope of the embankment crest and road: 2.0%
 - average height of the earth embankment: 0 to 1.80 m
 - retaining wall height (in relation to the ground): 0.30 to 1.30 m
 - closing height of mobile devices: 0.73 to 3.0 m

Due to the size of the area protected against flood and to the presence of residential areas, historical monuments and industrial plants in the whole area, the facilities of the existing flood management system as well as the designed flood embankments are assessed as class II main hydraulic structures.

For class II embankments, operational safety should be ensured during the passage of theoretical flood waves, i.e.:

- Design flow Q_m with the probability of exceeding an equivalent of $p=1\%$
- Control flow Q_k with the probability of exceeding an equivalent of $p=0.3\%$,

and the minimum safe elevation of the embankment crest over the design water level equals 1 m and over control water 0,3 m.

The technical need for reconstruction of the existing flood control channels stems from the need to improve the capacity or erosion control of the banks by which the flood embankments are designed.

The flows (design and control) on the considered section of the Odra river are:

- $Q_m = Q_{1\%} = 2\,492 \text{ m}^3/\text{s}$,
- $Q_k = Q_{0,3\%} = 2\,786 \text{ m}^3/\text{s}$.

2.2.2. DESIGN SOLUTIONS

1. HYDROTECHNICAL INDUSTRY:

a) EMBANKMENTS

The designed flood protection devices are of different construction. Detailed design solutions are described in the Design Documentation (Detailed Design - description and drawings).

The embankment design usually includes in various correlations:

- an earth embankment of the following structure:
 - The body of the embankment in the form of an earth embankment, $I_s \geq 0.95$, e.g. made of clayey sand-gravel mix
 - Sowing with a grass mix.
 - Broken stone rip rap, 50cm thick on a 300 g geotextile
 - Cover soil

- Bentomat.
- Sand bedding 10cm thick
- paved service roads:
 - reinforced concrete solid slabs: 3.00×1.50×0.15 m;
 - filling of bevels between concrete slabs C25/30, 15 cm thick;
 - levelling layer 3 ÷ 5 cm thick, made of sand;
 - foundation layer 0 ÷ 31,5 mm of continuous grain size aggregate 10cm thick
 - separation layer made of geotextile with a weight of min. 300 g/m²
- footpaths:
 - lawn edging dimensions: 6×20×75 cm on a concrete bench
 - concrete blocks - Polbruk, 8 cm thick:
 - levelling layer, 5 cm thick, made of concrete and sand (1:3);
 - sub-base layer, 25 cm thick, made of aggregate 0 ÷ 31.5 mm with continuous granulation, $I_s > 0.95$;
 - separation layer made of geotextile with a weight of min. 300 g/m² ;
 - native substructure G1 at $I_s > 0.95$
 - retaining wall on the waterside, in the form of a mobile flood protection system (MSOP) - the flood protection system includes elements of a fixed and a mobile part
- reinforced concrete walls of C25/30 class on lean C10 concrete (reinforcement according to the Design Documentation drawings) with stone cladding
- sheet piling made of steel sheet piles (profiles according to the Design Documentation) with a reinforced concrete cap of C25/30 grade hydrotechnical concrete, (reinforcement according to the Design Documentation drawings)

b) BYPASS (FLOOD CONTROL) CHANNELS

The task mainly includes strengthening, reconstruction and extension of the cross sections of the channels.

Construction works will also include desludging and maintenance of channel beds.

Detailed design solutions are described in the Design Documentation (Detailed Design - description and drawings).

c) OTHER EMBANKMENT FACILITIES

- embankment culverts in the form of reinforced concrete pipelines, ϕ 600 mm in embankment VII
- embankment exits and passages - constructed in places where the existing roads intersect with the route of the designed embankments to ensure continuity of passage and transit to the land-side and inter-embankment areas - 28 passages designed; detailed parameters are specified in the Design Documentation (Detailed Design)
- passing loops on the service road - to ensure efficient road communication during flood emergency action and during embankment maintenance works, the construction of 3 passing loops along the service roads was designed between embankment passages and exits.

- new watercourse channels -to enable drainage of seepage and rainwater to existing watercourses along the designed embankments, the construction and reconstruction of ditch courses and the construction of a new section of the By-pass Channel No. 4 were designed
- water constructions on watercourses - to maintain flow continuity in embankment ditches, under the embankment exit and under communication roads in the designed embankments, ca 3 pipe culverts were designed, of parameters and structures indicated in the Design Documentation (Detailed Design).

2. SANITARY WORKS

In connection with the construction of new flood embankments in the Odra River valley protecting the city of Krosno Odrzańskie against flood, it is necessary to remove the conflict of the embankment with the existing underground infrastructure: water supply, gas and sewage networks and to relocate them outside the area of new embankments or secure them properly.

As part of the Task, conflicts of the constructed embankment facilities or by-pass channels with the gas network will be eliminated (8 conflicts).

It is estimated that gas conflicts will involve the reconstruction of approx. 15 linear meters of pipes, and the amount of earth masses intended for removal will be about 9 m³.

In connection with the need to maintain the continuity of gas flow and an uninterrupted operation of the existing pipelines, it will be necessary to perform a temporary bypass for the time of the reconstruction of gas pipeline sections. Gas flow will be stopped only for the time of making the necessary switching.

To ensure that there is no interruption in gas supply during reconstruction, provisional pipelines (bypass) of PE-225 polyethylene pipes with a diameter of 225x20.5 are to be installed.

The Task also includes eliminating conflicts of constructed embankment facilities or by-pass channels with water supply and sewage systems (98 conflicts). Conflict solutions include protecting the existing infrastructure with split casing pipes and the assembly of backflow flaps at the pipe ends on water side, selected according to the material and diameter of the pipelines on which they are to be installed. All the pipelines of the infrastructure which are out of service will be cut off and plugged so that they do not interfere with the designed flood protection devices.

It is estimated that all the conflicts of the water and sewage network will involve the reconstruction of approx. 813 linear meters of pipes, and the amount of earth masses intended for removal will be approx. 340 m³.

3. ELECTRICAL WORKS

As part of the Task, conflicts of the constructed embankment facilities or by-pass channels with the power infrastructure will be eliminated (33 conflicts). Detailed conflict solutions are described in the Design Documentation (Detailed Design) and most often include:

- protection of existing cables with AROT split pipes,
- disassembly or repositioning of existing cables,
- securing the carried out excavations with formwork.

It is estimated that all the conflicts of LV and MV (low and medium voltage) electrical networks will involve the reconstruction of approx. 530 mb of cables. No earth mass removals are expected.

The Task also includes the elimination of conflicts between the constructed embankment facilities or by-pass channels and the underground teletechnical networks (19 conflicts). Detailed conflict solutions are described in the Design Documentation (Detailed Design) and most often include:

- protecting the existing cables with A110PS pipes,
- protection in the form of a reinforced concrete shell cover with sealing.

It is estimated that the conflicts of the teletechnical network will involve the execution of approx. 320 m of pipe protections, no earth mass removals are expected.

2.2.3. TECHNOLOGY OF WORKS EXECUTION

General Information

The technology of execution and the order of works are described in detail in the Design Documentation (Detailed Design, Volume I Descriptive Part), as well as in Technical Specifications.

Works on erecting the embankment's body, as well as the works carried out in its surroundings, should begin with mowing low vegetation and removing trees and shrubs intended for felling in the scope included in the construction design developed for the Task, in accordance with the issued decision on environmental conditions and with the dendrological survey.

Earthworks and strengthening works will be carried out during periods of low and medium water levels and at times of an optimistic weather forecast regarding precipitation. The works will be carried out and completed in short sections along with the agricultural development of technological strips and with the clearing of adjacent areas. Demolition earthworks are expected to be carried out mechanically using excavators and bulldozers. The volumes of earth masses, obtained from excavations, will, if possible, be distributed within the adjacent plots and in the technological strips along with their agricultural development, in consultation with the users of these plots and / or taken to the nearest municipal waste dump.

Execution of works can be staged or carried out independently, i.e. simultaneously on several sections, at the discretion and technical capabilities of the Contractor. Works on the culverts on the inlet ditches should be carried out independently or even in advance.

Sequence of works

1. Preparatory works:
 - geodetic elevation in the field and stabilization of all project-related elements important for the execution;
 - removing trees and shrubs in accordance with the issued decision and dendrological survey;
 - grubbing up trunks with filling cavities and removing wood and trunks to the place of disposal;
 - demolition works of selected objects and structures, in particular: culverts,
 - pipelines, networks, installations etc.;
 - preparation and reinforcement of existing access roads;
 - removing topsoil and stacking it on the sections of the route planned for reconstruction and
 - places of its incorporation;
 - preparation of construction site facilities;
 - execution of culverts and temporary structures.
2. Demolition of objects and structural elements provided for in the design.
3. Designation of underground utilities located in the area of works and the scope of earthworks performed manually.
4. Construction works - construction of new embankment/road culverts and works on inlet ditches along them.

5. Ongoing sorting of soil from excavations for a new embankment, with division into land not suitable for construction and land for as-built land development.
6. Earthworks during forming the designed embankment structure and managing the excess of soil.
7. Execution of cement-bentonite barrier on the designed section of the embankment.
8. Reinforcement works of the embankment and within the communication objects should be carried out with such progress that the earthworks are not overly in advance.
9. Forming and making of surfaces at embankment exits and passages.
10. Execution of service road surfaces and traffic routes.
11. Development of the technological strip and management of excess spoil.
12. Reconstruction of demolished buildings and fences provided for in the project.

Estimated amount of greenery to be removed as part of the preparatory works:

According to the dendrological survey prepared under the construction design, the Task implementation requires the removal of 703 trees - 1,251 trunks. Nearly half of the trunks (624 pcs.) are young trees with a diameter of less than 15 cm. In addition, 3 087 m² of shrubs are expected to be removed.

Estimated amount of earth masses to be managed

A large part of the earth masses will result from deepening of the channels. The amount of sludge is small in relation to all earth masses extracted from the channels, since most of them are dry channels.

Distances of soil transport shall be determined by the Contractor. It is assumed that the distance to the nearest municipal waste dump will be approx. 75 km.

Due to the geological conditions and provisions contained in the Detailed Design, soil obtained from excavations and demolition of embankments and channels can be used only as non-structural material incorporated outside the embankment body, on its water-side - in the technological strips on the inter-embankment zone surface. Hence, soil delivery is assumed as necessary for the needs of construction of earth structures. It is estimated that the amount of purchased soil to be built-in the embankments and channels will be approx. 225,000 m³.

2.2.4. EXECUTION TIME AND PROGRAMME

Planned execution dates:

- of the whole Task: the first quarter of 2020 to the fourth quarter of 2023.
- construction works: Q4 2020 to Q4 2022 (720 days)
- defect notification period / final settlement: 4th quarter 2022 to 4th quarter 2023 (365 days)

Programme of works	2020				2021				2022				2023			
	quarter				quarter				quarter				quarter			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Preparatory part																
Investment part*																

Defects Notification Period																	
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*duration of construction works 730 days (2 years) - from December 2020 to December 2022.

The general Programme for the implementation of the Task takes into account the restrictions resulting from the EMP and the Environmental Decision. These restrictions will also be included in the Contractor's detailed Programme.

2.2.5. WORKING CONDITIONS AND REQUIREMENTS FOR THE CONSTRUCTION SITE FACILITIES

Working conditions and requirements for the construction site facilities are specified in:

- Decision on environmental conditions of February 27, 2017 (WZŚ.4233.1.2016.AN),
- IPIP Decision No. 12/2018 of June 11, 2019,
- Decision No. DOW-W-I.7322.55.2017.KTB of 17 August 2017 - water permit
- Design Documentation
- Technical Specifications TS-0 and TS-1

To enable the works to be carried out, the construction site facilities should be located close to the structures under construction and the embankment itself. A material storage yard is also planned by the construction facilities. The yard should be located near the works being carried out, most conveniently within the technological strip intended for temporary occupation, and after completion of the works, intended for development and restoring its original function.

Construction site facilities are necessary for efficient work and will be used to:

- store topsoil used for incorporation and land development,
- storage of earth for incorporation or storage of earth excess from excavations to be managed,
- storage of equipment, other materials provided for in the design for incorporation, as well as for organizing the social facilities for the Contractor.

The final choice of the location of the Construction site facilities is to be made by the Contractor in consultation with the Engineer.

Note: The above characteristics of the Task is for illustrative purposes only and does not replace the design documentation for the Task.

All works should be carried out in accordance with Technical Specifications for Execution and Acceptance of Works applicable to particular industries.

3. INSTITUTIONAL, LEGAL AND ADMINISTRATIVE CONDITIONS

3.1. INSTITUTIONS INVOLVED IN THE IMPLEMENTATION OF THE TASK

The Investor for the Task is the State Water Holding Polish Waters in Warsaw represented by the Director of the Regional Water Management Board in Wrocław, acting on behalf and for the benefit of the State Treasury. The Project Coordination Unit (PCU) - an organizational unit of the National Water Management Authority (KZGW), which is as an organizational unit of the State Water Holding Polish Waters - is responsible for the overall coordination of the implementation of the individual EMPs under the Project. In addition, the Task implementation may require the involvement of public administration bodies in connection with issuing administrative decisions regarding environmental protection, nature conservation, building law and water law or other.

3.2. ACTS OF NATIONAL LAW IN FORCE IN THE FIELD OF THE ENVIRONMENT

According to the national regulations contained in the EIA Regulation, the construction of flood management structures is a project that can potentially have a significant impact on the environment.

Due to the above qualification, the Task required obtaining a decision an Environmental Approval, attached as Annex 4a.

According to the Polish law, the investment process in the scope of the environmental protection is regulated by several acts and regulations. A list of selected basic legal acts related to the above mentioned thematic scope and in force during the period of works on the EMP is presented in Annex 3 of the EMP. The number and content of legal acts specified therein may change, along with changes in national environmental protection regulations. In any case, the Contractor shall be obliged to comply with all current legal regulations in force in Poland during the term of the Contract.

3.3. EIA PROCEDURE IN POLAND

The description of the environmental impact assessment procedure applicable in the Polish legislation is included in the *Environmental and Social Management Framework Plan (ESMF)*, published, inter alia, on the websites of the Project Coordination Unit for the Odra - Vistula Flood Management Project¹ and the World Bank².

3.4. WORLD BANK GUIDELINES

This Task is co-financed, inter alia, from the International Bank for Reconstruction and Development, and the conditions for its implementation in the field of environmental protection are consistent with the Operational Policies and the Bank Procedures in the field of environmental protection, including, inter alia, the policies and procedures of OP/BP 4.01 (concerning environmental impact assessment), OP/BP 4.04 (concerning natural habitats) and

1 On website http://odrapcu2019.odrapcu.pl/popdow_dokumenty/.

2 On website <http://documents.worldbank.org/curated/en/717671468333613779/Poland-Odra-Vistula-Flood-Management-Project-environmental-and-social-management-framework>.

OP/BP 4.11 (concerning cultural resources) and OP/BP 4.12 (concerning involuntary resettlement).

Source texts of the abovementioned policies and procedures can be found in the document *The World Bank Operational Manual*¹, and their descriptions are presented, inter alia, in the *Environmental and Social Management Framework Plan (ESMF)*.

3.5. CURRENT STATUS OF THE EIA PROCEDURE FOR THE 1B.8 TASK

In accordance with the requirements of the national legislation, obtaining a decision on the environmental conditions of the project implementation (Environmental Approval) was required for the subject Task.

Pursuant to the classification contained in the EIA Regulation, the Task was included in group II, i.e. projects that could potentially have a significant impact on the environment, for which an environmental impact assessment may be required before issuing decisions on environmental conditions.

In the course of the ongoing proceedings regarding the decision on environmental conditions, the body conducting the proceedings, the Regional Director for Environmental Protection in Gorzów Wielkopolski, ruled on the need to carry out an environmental impact assessment.

The proceeding regarding issuing the decision on environmental conditions, during which an environmental impact assessment was carried out, was completed by the decision of the Regional Director for Environmental Protection in Gorzów Wielkopolski on environmental conditions of 27 February 2017 (Ref. No.: WZŚ.4233.1.2016.AN). Environmental conditions for the implementation of the Task were set out in this decision. Copy of the decision constitutes Annex 4a to the EMP.

As part of the EIA, the report on the environmental impact of the Task, along with other documentation of the case, has been made available to the public at the headquarters of Regional Directorate for Environmental Protection (RDOŚ) in Gorzów Wielkopolski. The public was informed about the possibility of getting acquainted with the content of the environmental impact assessment report by the announcement of 2 January 2017 (No.: WZŚ.4233.1.2016.AN). It was posted on the bulletin board and in the Public Information Bulletin of the Regional Directorate for Environmental Protection in Gorzów Wielkopolski, as well as on the bulletin board in the City Hall in Krosno Odrzańskie and in the Dąbie Commune Office. No comments or motions were submitted in the proceedings with public participation.

The terms of the decision on environmental conditions are binding on the Investor and the Contractor and are included in Annex 1 to the EMP (mitigation measures) and Annex 2 to the EMP (monitoring measures). The EMP is also supplemented with provisions resulting in particular from 1) the World Bank policies (including EHS guidelines and anti-discrimination practices); 2) reporting rules as part of the implementation of the EMP; 3) good construction practices, 4) occupational health and safety requirements. In addition, provisions were introduced which aim at eliminating extraordinary threats to human health and life (e.g. sapper supervision and reconnaissance) or at protecting cultural assets (in particular, the rules of conduct in the event of finding monuments of material culture, conditions for providing services of a team of archaeological experts).

1 On website: <https://policies.worldbank.org/sites/PPF3/Pages/Manuals/Operational%20Manual.aspx>

Regardless the above, the Contractor is obliged to obtain all further administrative decisions and permits necessary at the work implementation stage, if such a necessity occurs during Task execution.

3.6. GRIEVANCE REDRESS MECHANISMS

All persons affected by the Task implementation will receive access to appropriate and available mechanisms for submitting complaints and motions. Everyone has the right to file a complaint and motion. Submission of complaints and motions is free of charge. In addition, in accordance with the regulations, the person submitting a complaint or an application/motion may not be exposed to any detriment or accusation due to the submission.

For more information on the mechanisms for submitting complaints and motions applicable to the Tasks co-financed from World Bank funds, see the Operational Manual for the Odra-Visula Flood Management Project available on the Project Coordination Office website (http://odrapcu2019.odrapcu.pl/doc/POM_ENG.pdf).

4. DESCRIPTION OF THE ELEMENTS OF THE ENVIRONMENT IN THE VICINITY OF THE TASK

4.1. TERRAIN AND LANDSCAPE

The terrain, relief, soil, water bodies and landscape of the area in question is of postglacial origin and forms an ice-marginal valley. The surface of the area is mainly covered by Quaternary formations, represented by Pleistocene formations in the form of sands, gravels, loams, clays. There are also Holocene deposits here, which include sands, aggregate muds, alluvial soils lining the bottom of river valleys, as well as peat.

4.2. CLIMATE

The climate of the Krosno Odrzańskie area is classified as a moderate climate zone with transitional features between the maritime and continental climate. The inflow of polar, arctic and tropical air masses determines the high variability of weather types during the year. The terrain and course of the Odra valley, as well as the degree of its development, have a great impact on the microclimate of the Odra valley. The Odra Valley is a corridor conducive to rapid air exchange. Due to local conditions, there is a difference in both temperature and rainfall in comparison to the valley adjacent areas. Because of higher air humidity, such phenomena as fog or rime are more common.

The average annual temperature is 9°C and the average annual rainfall is 559 mm. The average daily temperature is the highest in July and amounts to 19.1°C, while the lowest in February - 2.1 ° C. The lowest rainfall is observed in February, while the highest, in July. West and southwest winds dominate.

4.3. AIR QUALITY

In the Lubuska Zone, to which the Task area belongs, based on the research conducted by the Voivodeship Inspectorate for Environmental Protection in Zielona Góra, exceedances of selected levels are determined - criteria are set out in legal regulations for individual atmospheric air pollutants, in particular: the level of permissible concentrations of suspended dust PM10 determined for the protection of human health and the target level of benzo(a)pyrene contained in PM10 dust, determined for the protection of human health. According to the Voivodeship Inspectorate for Environmental Protection reports, the main reason for the exceedances of benzo(a)pyrene contained in PM10 dust in the Lubuskie Voivodeship is the so-called ground-level emission, coming from the municipal and living sector, and associated with individual heating of buildings using fossil fuels, mainly coal. An important source are also emissions from the transport. In the case of dust pollution, a clear seasonal variation of air pollution concentrations is visible. In the case of dust pollution, exceeding normative levels occurs primarily in the autumn and winter.

For the remaining parameters, all three zones of the voivodeship were classified as class A.

Below are the results of the State Environmental Monitoring (SEM/PMS) in the year 2018 regarding the parameters causing the Lubuska Zone to be included in class C.

Benzo(a)pyrene concentrations

Table 1 Statistical parameters calculated on the basis of a series of benzo(a)pyrene concentration results for the purpose of health protection assessment in the lubuska agglomeration measuring stations.

Station name	Average annual value of Sa [ng/m ³]	Standardized target level [ng/m ³]	
		Zone A	Zone C
Sulęcín Dudka St.	9	≤ 1	>1
Wschowa Kazimierza Wielkiego St.	10	≤ 1	>1
ŻARY Szymanowskiego St. 8	6	≤ 1	>1

Source: Annual air quality assessment in Lubuskie Voivodeship, voivodeship report for 2018

PM10 dust concentrations

Table 2 Statistical parameters calculated on the basis of a series of PM10 concentration measurement results for the purposes of assessment in terms of human health protection (the number of days with exceedances in parentheses is given before the deduction of the contribution of natural PM10 emission sources)

Station name	Average annual value Sa [µg/m ³] (permissible value for class A < 40 µg/m ³)	Multiplicity of 24-hour exceedances S24 > 50 µg/m ³ L > 50 (S24)	Criterion for class A (not more than 35 24-hour concentrations S24 > 50 µg/m ³)	Criterion for class C (more than 35 24-hour concentrations S24 > 50 µg/m ³)
Sulęcín Dudka St.	28	27	≤ 35	> 35
Wschowa Kazimierza Wielkiego St.	34	60	≤ 35	> 35
Żary Szymanowskiego St. 8	29	37 (38)	≤ 35	> 35

Source: Annual air quality assessment in Lubuskie Voivodeship, voivodeship report for 2018

Due to designation of the Lubuska Zone as class C, due to the recorded exceedances of the permissible levels of PM10 and benzo (a) pyrene contained in PM10 dust, the current air protection program for the Lubuska Zone¹ includes a short-term action plan until 2027, whose implementation will reduce particulate matter PM10 and particulate matter emissions, including benzo (a) pyrene and heavy metals. The action plan includes activities related in particular to the removal of high-emission low-efficiency heat generation sources (coal fired boilers and boiler houses), extension of municipal heating systems, promotion of environmental - friendly heat generation units (low-emission and zero-emission) as well as decreasing of heat energy consumption by improving thermal insulation of buildings. Regular cleaning of the road surface by road authorities was indicated as the main activity aimed at reducing transport emissions, especially after the winter and during rainless periods. The actions specified in the action plan do not affect the conditions for the implementation and operation of the Task.

¹ Resolution No. XLII/626/18 of the Parliament of the Lubuskie Voivodeship of February 26, 2018 on determining the Update of the air protection program for the Lubuska Zone due to exceeding the permissible value of PM10 suspended dust and the target values of benzo (a) pyrene and arsenic contained therein (Official Journal of the Lubuskie Voivodeship of 2018, item 506)

4.4. GEOLOGICAL STRUCTURE, SOILS AND LAND

Geologically, Krosno Odrzańskie is located on the Fore-Sudetic Monocline, within the boundaries of the Krosno-Zielona Góra Monocline, which is built by Paleozoic-Mesozoic rock complexes covered with Cenozoic sediments with a thickness of 204.5 to 274.4 m. Cenozoic deposits are represented by Oligocene, Miocene and Quaternary sediments. The accumulation of Quaternary deposits was associated with the stay of ice sheets of South-Polish, Middle-Polish, North-Polish glaciations and with the accumulation during the Holocene. These are Pleistocene river, lake, ice-marginal, glacial and fluvio-glacial sediments as well as river, lake, ice-marginal and aeolian Holocene sediments.

Three terraces are marked in morphology: ice-marginal, alluvial and floodplain. The oldest and highest (ice-marginal) terraces are located 6-12 m above Odra level, the middle terraces are 3-6 m high above Odra level. The youngest, Holocene river terraces, accumulative are located up to 2.5 m above the river level and are cut by numerous dry and waterlogged oxbow lakes.

In the area of Krosno Odrzańskie, Odra flows along the northern side of the bottom of the ice-marginal valley. The majority of Odra floodplain terraces are located on the southern side of the ice-marginal valley. Floodplain terraces are made of various-grained sands and fine-grain gravels of gray and light gray color, sometimes gray-brown and gray-blue, often loamy and with plant debris. Thickness of these deposits reaches up to 6 m.

In the southern part of the Torzyska Plain, periglacial moraines are distinguished, including a ground moraine made of glacial till, denuded and cut by river valleys. Glacial till builds a distinct slope of the Odra River valley.

The Task area is located within the Odra floodplain terrace, in the near-bed zone and in the Odra riverbed.

Alluvial soils dominate in the Odra valley. These are river alluviums developed on sands and river gravels. The high content of organic matter means that these are fertile, acidic soils. Alluvial soils are characterized by a wide variety of physical and chemical properties. The granulometric composition of alluvial soils varies depending on the conditions of sedimentation outside the river bed. A strip of light alluvial soil, consisting of sands, gravels and clay sands extends in the near-bed zone, these are sandy soils with thin layers of fine fractions indicating the falling phase of freshet wave. It is a zone of river point bars and willow-poplar riparian forest habitats. There are medium-heavy alluvial soils in the flat floodplain, developed within sandy loams and loamy sands. Sandy interbeddings of small thickness are visible in their profile (indicating episodes of higher freshening). Sedimentation conditions of off-shore sediments are less dynamic than in the coastal zone. It is a flood waters flow zone, often eroded, within which overflow channels or gullies are formed. These are soils forming fresh habitats of riparian oak and ash forests.

Within the depressions of the terrain, hollows in the floodplain zone (flood basins), heavy alluvial soils are formed from heavy loams. Sediments represent the sedimentation environment typical of marginal reservoirs, fine fractions slowly decant from water and create thicker levels of sediments of low permeability. Gleying developed in conditions of stagnant rain or flood waters is typical. These are soils of periodically marshy habitats - alder alluvial forests and bog woodlands.

Within oxbow lakes and marshy depressions, organic peat and silt soils dominate. The groundwater level corresponds to the water level in the river.

4.5. SURFACE WATERS

The Task will be implemented in the Odra valley left bank section, between km 513.5 and 514.7 of the Odra River. Odra has a length of 855 km. The riverhead is located on the territory of the Czech Republic in the Odra River Mountains (634 m a.s.l.). In Poland, the area of the Odra river basin is 118,015 km². In addition, work will be carried out within and around the bypass channels, in particular the Old Odra Riverbed/Stara Odra (bypass Channel No. 1). In connection with the above, the Task is located within two UBSW's:

- Stara Odra, code RW6000231598,
- Odra from Czarna Struga to Nysa Łużycka, code RW6000211739.

The table below presents features of the abovementioned UBSW's and their catchments, an assessment of their water status as well as the results of monitoring of basic physicochemical parameters.

Table 3 Features and assessment of the status of UBSW's

Parameter	Stara Odra RW6000231598	Odra from Czarna Struga to Nysa Łużycka RW6000211739
UBSW Characteristics		
Abiotic type	23 - a torrent or stream in the area under the influence of peat-forming processes	21 - great lowland river
Status	Natural	Heavily Modified Body of Water (HMBW)
Catchment area	21.8 km ²	186.1 km ²
Risk assessment of not achieving the environmental objectives	Unthreatened	Threatened
Assessment of USWB status		
Measuring point code	PL02S0401_0303	PL02S0401_0638
Measure point name	Stara Odra - Krosno Odrzańskie city	Odra - Połęcko city
Class of biological elements	III	IV
Class of physicochemical elements	>II	>II
Class of physicochemical elements - specific synthetic and non-synthetic impurities	II	II
Classification of ecological status / potential	III - moderate ecological status	4-IV- weak ecological potential
Classification of water chemical status	Below good	Below good
Assessment of USWB status	Bad water condition	Bad water condition
Selected results of water monitoring (for 2018, the class is given in brackets) – average concentrations		
Total suspended solids (TSS)	4 (I)	18 (I)
Dissolved oxygen	9,6 (I)	11,4 (I)

Parameter	Stara Odra RW6000231598	Odra from Czarna Struga to Nysa Lużycka RW6000211739
Total organic carbon	5,5 (I)	5,7 (I)
Total hardness	289 (>II)	258 (I)
Total Nitrogen	1,4 (I)	3,0 (I)
Total phosphorus	0,083 (I)	0,161 (I)

Source: RBMP (aPGW) (Decree of Council of Ministers of October 18, 2016, JoL item 1967), "Assessment of the status of river water bodies and dam reservoirs in 2017-2018 - table" GIOŚ 2019

4.6. UNDERGROUND WATER

In the Task implementation area, the groundwater level oscillates between an ordinate of 37.0 m above sea level and an ordinate of 40.0 m above sea level. Depending on the elevation of the area from which the water table was measured in a borehole, the groundwater table is located at depths from approx. 1.5 m to approx. 5.0 m. The water table is usually unconfined here, however, in the areas of morphological depressions with the cover of cohesive or organic deposits of clay silt and peat nature, the presence of a slightly confined groundwater table was found. Research drilling and measurements of the groundwater table in the wells were performed in October and November, at low water levels caused by a long rainless period. During periods of intense and prolonged rainfall or snowmelt, the groundwater level may rise by approx. 1.0-1.5 m in relation to the stated measurements.

The Krosno Odrzańskie region is located in the area of the GWB (groundwater body) no. 68 (PLGW600068). The main drainage base here is the Odra valley running almost through the center of the GWB. Drainage and groundwater flow to the valley is limited. The water status according to the 2012 and 2016 assessment is good, both in chemical and quantitative terms. In terms of assessing the risk of non-compliance with the environmental objectives, the groundwater body is not at risk.

The southern part of Krosno Odrzańskie (at the height of Stary Raduszec) is located within the range of the Main Underground Water Tank No. 149 Sandr Krosno-Gubin.

There are no groundwater intakes for drinking water supply in the Task implementation area.

Below are the results of a state groundwater monitoring for the abovementioned UBGW of 2016 together with quality classes at the monitoring point in Krosno Odrzańskie - parameters not corresponding to the highest class I were indicated. The assessment of groundwater quality on the basis of tests of water samples taken from measuring points in the Lubuskie Voivodeship was carried out based on the Regulation of the Minister of the Environment of December 21, 2015 on the criteria and method of assessing the status of groundwater bodies (Journal of Laws 2016 item 85). According to the regulation, the classification of physicochemical elements of groundwater status includes five water quality classes. The regulation also defines the good and poor chemical status of groundwater. Groundwater quality classes I, II and III indicate good chemical status, and quality classes IV and V indicate poor chemical status.

Table 4 Results of groundwater monitoring - JCWPd PLGW600068

Indicator	Unit	Krosno Odrzańskie	
		Value	Quality Class
Temperature	[°C]	12,0	II
Dissolved Oxygen	[mgO ₂ /l]	0,47	III
Ammonium ion	[mgNH ₄ /l]	0,69	II
Manganese	[mgMn/l]	0,527	III
Calcium	[mgCa/l]	76,1	II
Bicarbonates	[mgHCO ₃ /l]	231,0	II
Iron	[mgFe/l]	0,57	II
Quality class - physico-chemical indicators		III	
Quality class - organic indicators		II	

Source: Assessment of groundwater quality in the Lubuskie Voivodeship in 2016 (<http://www.zgora.pios.gov.pl/ocena-jakosci-wod-podziemnych-wojewodztwa-lubuskiego-w-2016-r/>)

4.7. ACOUSTIC CLIMATE

The Task implementation area includes, in particular, areas located near residential and residential-and-service buildings, for which the following permissible noise levels in the environment apply (in accordance with the Regulation of the Minister of the Environment *on permissible noise levels in the environment* of June 14, 2007 - consolidated text: Journal of Laws of 2014, item 112):

Type of terrain	Permissible noise level in [dB]	
	The reference time interval equal to 8 least favorable hours of the day in succession	The reference time interval equal to 1 least favorable hour of the night
Single-family housing development areas	50	40
Residential and service areas	55	45

The source of audible noise in the area and in the immediate vicinity of the Task implementation area is the noise from the city of Krosno Odrzańskie and the so-called traffic noise produced by motor vehicle movement on the roads and the bridge.

4.8. FLORA AND FAUNA

4.8.1. FLORA

Among the vascular plants in the area of the planned Task implementation area, the following valuable species were found:

- Water caltrop *Trapa natans*:
3 sites in the inter-groyne bays of Odra and a large site in the harbor; cat. E, strict protection;
- *Batrachium trichophyllum*: 1 site in the oxbow lake; partial protection;

- mouse garlic *Allium angulosum*: 4 large-scale sites, where the species grows (often in large numbers) in the phytocoenoses of alluvial meadows of river valleys; cat. V, partial protection;
- Kadenia dubia *Cnidium dubium*: site arrangement similar to the previous taxon; endangered species on the national scale (cat. V), no legal protection.

During the field research, 2 species under partial protection and one species under strict protection were found in the place of the planned Task implementation area and in its surroundings (in a strip with a minimum width of 50 meters). Among them, *Trapa natans* belongs to dying species in the country (cat. E.) Mouse garlic *Allium angulosum* belongs to the vulnerable species in Poland (cat. V) and locally is an indicator for alluvial meadows of river valleys (natural habitat - code 6440).

Based on the obtained results, floristic data is presented below, which in substantive and formal-legal terms is particularly important and binding for the assessment of the natural environment:

- No species of plants protected under the documents of European Union, including NATURA 2000, have been found in the area of the planned Task implementation area and in its surroundings,
- Among the species of legally protected plants in Poland (Regulation of the Minister of the Environment of October 9, 2014 on the protection of plant species, Journal of Laws 2014 item 1409) 3 taxa were recorded. These are: water caltrop *Trapa natans* - subject to strict protection and two taxa subject to partial protection: *Batrachium trichophyllum* and *Allium angulosum*.

Noteworthy are several species, which, although not listed as endangered, undoubtedly belong to rare species or species scattered in the country. Worth mentioning here are: *Leonurus marrubiastrum*, *Cyperus fuscus*, *Potamogeton lucens*, *Polygonum brittingeri*, *Pulicaria vulgaris*, *Potentilla supina*. The presence of these species on the Odra floodplain terrace significantly increases its geobotanical value, and partly indicates the presence of plant formations characteristic of specific fluvial forms.

4.8.2. NATURAL HABITATS

The Task implementation area is located within the skirts of mainly: pastures, meadows, sites for building purposes and shrublands, as well as sparse arable lands. Built-up areas are located in the back embankment zone of the designed embankments. The construction of embankments will be carried out along the building alignment. The vegetation of the inventoried area (embankment + 50 m buffer on its both sides) is therefore characterized by occurrence of formations typical of the great river valley with anthropogenically changed character and dynamics of fluvial processes. Locally, the best preserved and typically developed are the following Natura 2000 habitats and their phytosociological identifiers:

- a) 3130 - banks and bottoms of drained water reservoirs (*Cypero fusci-Limosellteum*);
- b) 6430 - riverside herb fringe communities: *Urtico-Calystegietum sepium*, *Carduo-Rubetum caesii*, *Fallopia-Humuletum lupuli*;
- c) 6440 - alluvial meadows of river valleys: *Violo stagninae-Molinietum caeruleae*;
- d) 6510 - lowland fresh meadows: *Arrhenatheretum elatioris*.

Natura 2000 natural habitats whose phytosociological identifiers show anthropogenic forms of pressure and degeneration (neophytization, eutrophication, littering, trampling) include:

- a) 3270 - flooded, muddy river banks (*Chenopodio rubri-Polygonetum brittingerii*);
- b) 3150 - oxbow lakes and natural eutrophic water reservoirs (*Nymphaeo albae-Nupharetum luteae*, *Potametum lucentis*, *Myriophylletum spicati*).

All habitats are located in the zone of direct impact of the planned Task implementation area, except: 3130, 3270 and 6510. Habitat 3150 locally represented by the old Odra river bend, is exposed to indirect impact. Within this group, habitat 6430 should also be considered, since Xenospontaneous association *Calystegio-Asteretum lanceolati* is a locally strongly invasive herb fringe community. Measures related to the destruction of existing native herb phytocoenoses and violation of the surface soil layers can with high probability create a gate of invasion for neophytic aster species (*Aster lanceolatus s.l.*).

4.8.3. FAUNA

Invertebrates

As the result of a site survey, the following protected species were found in the Task implementation area and its surroundings:

- dragonflies:
 - green snaketail (*Ophiogomphus cecilia*) - dragonfly species under strict protection.
In total, during the inventory, 2 adult specimens were observed at two locations along the left shoreline of the Odra river. Both sites are located outside the investment impact zone. The green snaketail is a widespread species in the middle Odra river area. Certainly, the presence of green snaketail on the section Pomorsko - Krosno Odrzańskie of Odra river is continuous;
 - Yellow-legged dragonfly (*Gomphus flavipes*) - dragonfly species under partial protection.
At the time of inventorying, 1 adult specimen was observed in the riparian zone of Odra river. The site is located outside the investment impact zone. The species is associated with large lowland rivers. The habitats of the larvae are mainly fine-sandy sediments, most often located in the middle of the coves between the spur dikes, at a certain distance from the bank. Adult dragonflies mainly patrol the area around river spurs, and in order to get food or rest they often fly near trees or shrubs, migrating over long distances (often a dozen or so kilometers). The distribution of the yellow-legged dragonfly in the middle Odra is relatively poorly studied, although it is known that this species is present in the river in at least several locations within the Pomorsko - Krosno Odrzańskie section, i.a. near Gostchorz, Nietków and Brody.
- butterflies:
 - Large copper (*Lycaena dispar*) - a butterfly species under strict protection; species from Annexes II and IV of the Habitats Directive.
A total of 4 adult specimens were observed at one site in the littoral zone of Channel No. 1, above the bridge, at a complex of degraded wet and fresh

meadows and wasteland, outside the direct impact of the planned investment. The species is associated primarily with moist habitats, often found in the valleys of large rivers. The occurrence of the species in the Krosno Valley of the Odra river is poorly studied, depending on the presence of host plants (sorrel), it can occur along the entire Odra valley.

The Odra river area covered by the Task is, to a large extent, built-up and otherwise developed, therefore it has marginal significance for the abovementioned species, i.e. it can primarily constitute occasional feeding and resting locations for adult specimens in the area of the Krosno Valley of the Odra River.

As a result of the inventory, no hermit beetle and no capricorn beetle were found, although there are good quality potential habitats for these species located along the examined embankment section. Several trees with rotting wood microhabitat (willow, chestnut) were found, but no signs of the hermit beetle or other protected beetles were found.

Ichthyofauna

The field research carried out made it possible to determine the presence of the following protected species and / or listed in Annex II of the Habitats Directive of Osteichthyans:

- White-finned gudgeon *Romanogobio belingi* - fish under partial species protection, rare species from the Natura 2000 not protected in the "Krośnieńska Dolina Odry" habitat.
- Amur bitterling *Rhodeus sericeus* - fish under partial species protection, rare species of the Natura 2000 site being subject to protection in the "Krośnieńska Dolina Odry" habitat. In the case of waters covered by the planned Task implementation area, it is easiest to find in the upper part of the flood control channel No. 1.
- Asp *Aspius aspius* - fish under partial species protection. Common in the middle and lower reaches of the Odra River, periodically the fish is present in its oxbow lakes and channels, as is the case with the flood control channel No. 1, and in the Channel No. 2 to a much lesser extent.
- Spined loach *Cobitis taenia* - a fish under partial species protection, rare species of the Natura 2000 site being subject to protection in the "Krośnieńska Dolina Odry" habitat. This is undoubtedly the most common species of the Lubuskie voivodeship ichthyofauna listed in Annex II of the Habitat Directive. The spined loach can be found in all the reservoirs where water is constantly present.
- European weather loach *Misgurnus fossilis* - fish under partial species protection, rare species of the Natura 2000 site being subject to protection in the "Krośnieńska Dolina Odry" habitat. Relatively rare in the waters related to the Task implementation area, it is easiest to encounter it in the upper section of the Channel No. 1.

In the section of Odra adjacent to the planned investment another species of fish from Annex II is certainly present - salmon *Salmo salar* (although it was not caught during the field research), because some upper direct and indirect tributaries of the Odra river are regularly stocked with it, so it is periodically present in their recipient in small amounts, primarily in the form of smolts moving out to the sea.

The spawning, growing and hatching periods for most species found in the Odra River, including protected species, i.e.: spined loach *Cobitis taenia*, European bitterling *Rhodeus amarus*, white-finned gudgeon *Romanogobio belingi*, asp *Aspius aspius*, European weather

loach *Misgurnus fossilis* are in March - half July. Migrations of Salmonids fall within the period of October-December.

Amphibians

There may potentially be 14 species of amphibians present in the Task implementation area, including 3 species of Caudata amphibians and 11 species of tailless amphibians, Anura, i.e. the entire lowland set of species listed for the Lubuskie Voivodeship (Maciantowicz 2007). A total of 8 species of amphibians were found along the discussed section of the embankment, as well as in adjacent reservoirs and ponding waters, including 3 species under strict protection and 5 under partial protection. These are:

- common newt *Lissotriton vulgaris* *Triturus vulgaris* - partial protection,
- European fire-bellied toad *Bombina bombina* - strict protection, species from Annex II of the Habitats Directive,
- common spadefoot *Pelobates fuscus* - strict protection,
- common toad *Bufo bufo* - partial protection,
- moor frog *Rana arvalis* - strict protection,
- common frog *Rana temporaria* - partial protection,
- marsh frog *Pelophylax ridibundus* *Rana ridibunda* - partial protection,
- common water frog *Pelophylax esculentus* *Rana esculenta* - partial protection.

Reptiles

During the field research conducted in the area covered by the study, 4 reptile species were found. These are:

- sand lizard *Lacerta agilis*,
- viviparous lizard *Zootoca vivipara*,
- slow-worm *Anguis fragilis*,
- grass snake *Natrix natrix*.

All identified species are currently under partial protection.

Avifauna

Research on breeding avifauna was conducted from mid-March to the end of June 2016, carrying out 7 inspections, including 5 day and 2 night inspections.

67 bird species were found in the area, of which 54 breeding or probably breeding species. Six breeding species are listed in Annex I of the Birds Directive. Four breeding or probably breeding species: the white stork *Ciconia ciconia*, the corncrake *Crex crex*, the barred warbler *Sylvia nisoria* and the red-backed shrike *Lanius collurio*.

In addition, nesting or probable nestings of several valuable species the population of which is considered sparse or medium-sized were found, including mute swan *Cygnus olor*, water rail *Rallus aquaticus*, common moorhen *Gallinula chloropus*, Eurasian wryneck *Jynx torquilla*, European green woodpecker *Picus viridis*, common grasshopper warbler *Locustella naevia*.

Below is a list of breeding bird species found in the Task implementation area:

- White Stork *Ciconia ciconia*
- Great tit *Parus major*
- Short-toed treecreeper *C. brachydactyla*

-
- Common whitethroat *Sylvia communis*
 - Willow tit *Poecile montanus*
 - Corncrake *Crex crex*
 - Barn swallow *Hirundo rustica*
 - Great spotted woodpecker *Dendrocopos major*
 - Green woodpecker *Picus viridis*
 - Lesser spotted woodpecker *Dendrocopos minor*
 - European greenfinch *Carduelis chloris*
 - Garden warbler *Sylvia borin*
 - Red-backed shrike *Lanius collurio*
 - Common wood pigeon *Columba palumbus*
 - Barred warbler *Sylvia nisoria*
 - Eurasian blackcap *Sylvia atricapilla*
 - Common moorhen *Gallinula chloropus*
 - Black redstart *Phoenicurus ochruros*
 - Common blackbird *Turdus merula*
 - Eurasian nuthatch *Sitta europaea*
 - Eurasian wryneck *Jynx torquilla*
 - Mallard *Anas platyrhynchos*
 - Common snipe *Gallinago*
 - Mute swan *Cygnus olor*
 - Spotted flycatcher *Muscicapa striata*
 - Marsh warbler *Acrocephalus palustris*
 - Common linnet *Carduelis cannabina*
 - Eurasian tree sparrow *Passer montanus*
 - Blue Tit *Cyanistes caeruleus*
 - Willow warbler *Phylloscopus trochilus*
 - Lesser whitethroat *Sylvia curruca*
 - Common chiffchaff *Phylloscopus collybita*
 - Common redstart *Phoenicurus phoenicurus*
 - White wagtail *Motacilla alba*
 - Whinchat *Saxicola rubetra*
 - Corn bunting *Emberiza calandra*
 - Common reed bunting *Emberiza schoeniclus*
 - Sedge warbler *Acrocephalus schoenbaenus*
 - Robin *Erithacus rubecula*
 - Marsh tit *Poecile palustris*
 - Eurasian Skylark *Alauda arvensis*
 - Common nightingale *L. megarhynchos*
 - Eurasian magpie *Pica pica*
 - Eurasian wren *Troglodytes troglodytes*
 - European goldfinch *Carduelis carduelis*
 - Common starling *Sturnus vulgaris*
 - Grasshopper warbler *Locustella naevia*
 - Yellowhammer *Emberiza citrinella*
 - Water rail *Rallus aquaticus*
 - Eurasian golden oriole *Oriolus oriolus*
 - House Sparrow *Passer domesticus*
 - Hooded crow *Corvus cornix*
 - Icterine warbler *Hippolais icterina*
 - Common chaffinch *Fringilla coelebs*

Research on wintering and migrating avifauna near the planned Task implementation area was carried out from January to mid-March 2016. Three day checks were carried out.

15 bird species were found during the checks. Of the migratory species, only the whooper Swan *Cygnus cygnus* and the White-tailed eagle *Haliaeetus albicilla* are included in Annex I of the Birds Directive.

Below is a list of wintering and migrating species found near the planned Task implementation area :

- Smew *Mergus allbelus*
- White-tailed eagle (*Haliaeetus albicilla*)
- Gray heron *Ardea cinerea*
- Tufted duck *Aythya fuligula*
- Common goldeneye *Bucephala clangula*
- Greater white-fronted goose *Anser albifrons*
- Bean Goose *Anser fabalis*
- Great cormorant *Phalacrocorax carbo*
- Mallard *Anas platyrhynchos*
- Whooper Swan *Cygnus cygnus*
- Mute swan *Cygnus olor*
- European herring gull *Larus argentatus*
- Common buzzard *Buteo buteo*
- Common merganser *Mergus merganser*
- Black-headed gull *Chroicocephalus ridibundus*

Teriofauna

In the studied area, 8 species of mammals under partial protection (list below) were found, 2 of them (European beaver *Castor fiber* and Otter *Lutra lutra*) are included in Annex II of the Habitats Directive.

All species were found closer or further from the designed embankment.

Below is a list of protected species of mammals found in the planned Task implementation area:

- European beaver *Castor fiber*
- Otter *Lutra lutra*
- European hedgehog *Erinaceus europeus*
- Least weasel *Mustela nivalis*
- Common shrew *Sorex Araneus*
- Red squirrel *Sciurus vulgaris*
- European Mole *Talpa europaea*
- European water vole *Arvicola terrestris*

4.8.4. PROTECTED AREAS

The Task is partially located within the following forms of nature conservation:

- Natura 2000 - Special Protection Area (SPA) PLB 080004 Middle Odra Valley
- Natura 2000 - Special Area of Conservation (SAC) PLH080072 Krośnieńska Dolina Odry [.

The location of the Task against the background of Natura 2000 sites is shown in Annex 5 to the EMP.

There are two natural monuments within the Task implementation area range - pedunculate oaks, growing within the boundaries of the Krosno Odrzańskie city.

The Task implementation area is located within the boundaries of the SPA Natura 2000 PLB 080004 Dolina Środkowej Odry on the section of 2 460 m, and within the boundaries of the habitat area PLH080072 Krośnieńska Dolina Odry on the section of 2 740 m. The Task will be implemented on the border of lands and built-up areas of the city of Krosno Odrzańskie, and

the occupation (permanent and temporary) within the abovementioned Natura 2000 sites can be estimated at <0.05% of their total area.

The EIA and Environmental Approval Report indicates that the Task is also located within the Protected Landscape Area "Krośnieńska Dolina Odry", however, due to the change in the boundaries of this area (pursuant to the Resolution No. XXIX/455/17 of the Lubuskie Voivodeship Assembly of April 10, 2017 on the protected landscape area named "Krośnieńska Dolina Odry"), currently the Task is fully outside its borders.

Natura 2000 - PLB 080004 Dolina Środkowej Odry

This area is listed in the Regulation of the Minister of the Environment of January 12, 2011 on special bird protection areas (Journal of Laws 11.25.133, as amended). It has a total area of 33,677.79 ha.

The area includes the Odra river valley in its middle course from Bytom Odrzański including the region of the Obrzyca and Nysa Łużycka estuaries where they join Odra, to the north of Słubice where it ends. Numerous oxbow lakes, large groups of wet meadows, as well as thickets and alluvial forests are preserved here. There are at least 22 species of birds listed in Annex I of the Birds Directive, 3 species from the Polish Red Book of Animals (PCKZ) (Głowaciński 2001).

During the breeding period, the area is inhabited by at least 1% of the national population (C6) of the following species: black kite (PCK), red kite (PCK), honey buzzard, common grasshopper warbler and Eurasian penduline tit; corncrake and garganey are present in a relatively high density (C7).

Natura 2000 - PLH080072 Krośnieńska Dolina Odry

The area of the whole site is 19 202.5 ha. It includes a section of the Odra river valley from Cigacice to the Polish-German border. A significant part of the area is flooded (inter-embankment zone). Old oxbow lakes, riparian forests, large groups of foxtail meadows (*Alopecurion pratensis*) and alluvial meadows of river valleys. The refuge also includes a complex of old ash-elm and willow riparian forests, oak-hornbeam forests near Krępa k. Zielonej Góry and well-developed riparian forests near Czarna Łacha in the western part of the area, near Krosno Odrzańskie.

In addition, the Task implementation area is located approximately 500 meters outside the boundaries of the protected landscape areas "Krośnieńska Dolina Odry" and "Dolina Bobru". The protected landscape areas are areas protected due to their distinctive landscape with diverse ecosystems, valuable because of their capabilities to meet the needs of tourism or due to their functioning as ecological corridors.

4.9. CULTURAL LANDSCAPE AND MONUMENTS

The planned works, in the northern part, will be carried out within the historical development of Krosno Odrzańskie, which as an urban layout is listed in the register of monuments as "city, registration number: 102 of 7/7/1958 and No. 2179 of 3/31/1975 and of 3/19/2012"(source: <http://www.nid.pl>).

As to the embankments along Odra, they will be located in the immediate vicinity of the historic road bridge listed in the register of monuments as: "Truss road bridge, over the Odra river, in

Ariańska street¹, 1905, registration number: L-600/A of 08/13/2013" (source: <http://www.nid.pl>).

Due to the rich historical past of this part of Krosno Odrzańskie, there is a very high probability of encountering archaeological finds and individual artifacts during earthworks, such as fragments of boats in canals, etc., especially since some of the debris from the historic buildings of the city center was used after the war for strengthening the banks of Channel 1.

In addition to the two objects mentioned above, there are also 29 objects entered in the register of monuments in the nearest or further vicinity of the Task implementation area (up to 260 m), including: a Piast castle, a castle granary, battlements, a monastery building, historic tenement houses and the church of St. Jadwiga Śląska.

The listed monuments do not collide with the scope of the planned works.

4.10. POPULATION

The city of Krosno Odrzańskie has 11,319 inhabitants (Central Statistical Office - GUS 2019). Given the current state of Krosno Odrzańskie flood protection, 1 012 residents are at risk of centenary water occurrence ($p = 1\%$), and 1 215 residents are at risk of a 500-year water ($p = 0.2\%$). Several hundred buildings are at risk of flooding, including mainly residential buildings, buildings of special social importance as well as some industrial plants. Many of the objects listed in the register of monuments, described under 4.9.

Works related to the Task will be carried out in the immediate vicinity of the abovementioned development.

¹ Currently, from September 2017, named Trakt Książęcy street

5. SUMMARY OF THE ENVIRONMENTAL IMPACT ASSESSMENT RESULTS

5.1. TERRAIN AND LANDSCAPE

The embankments will be constructed in a manner combining the functions of flood protection and walking routes, which will contribute to the attractiveness of this part of the city and to the expansion of its leisure facilities.

Changes in the landscape will be associated primarily with the removal of vegetation, but also with the creation of new elements - earth embankment structures, walls with stone cladding.

To carry out the designed scope of work, it will be necessary to remove the trees and shrubs growing on the slopes of the flood control channels and on the coastal strips along the route of the designed flood embankments.

In the selected variant, due to the occupation of a smaller area as compared to the alternative variant described in the EIA Report, a smaller range of tree felling is planned, therefore a larger number of old trees will remain (32 old trees valuable in terms of nature and landscape, including 12 pedunculate oaks with a circumference of over 3 m, which may in the future be potential habitats for rare protected animals, e.g. the great Capricorn beetle, the oak hermit beetle, or a nesting place for birds). It will allow to maintain high landscape values of several embankment sections. Sowing the embankment body with a mixture of native grass species is planned.

5.2. CLIMATE

Due to the nature of the Task, it will not cause any climate change, as the newly built infrastructure will not produce greenhouse gases or other substances that may contribute to climate change. The task will be implemented in a manner consistent with all the standards applied for this type of structures, therefore possible climate changes should not cause damage to it or impair its ability to perform its function.

5.3. AIR QUALITY

Emissions of gases and dust will occur mainly during delivery of building materials, during passage and operation of mechanical equipment. The works will be carried out and finished in short sections along with the agricultural development of technological strips and with the clearing of adjacent areas, hence the impact on the air quality, in particular in terms of dust emissions, will be local and transient. They will not negatively affect the assessment of the air condition in the lubuska zone.

Once completed, the infrastructure resulting from Task implementation will not be a source of air polluting emissions.

5.4. GEOLOGICAL STRUCTURE, SOILS AND LAND

The works will be carried out and finished in short sections along with the agricultural development of technological strips and with the clearing of adjacent areas. The Contractor will minimize the impact of the conducted earthworks as well as of transport and storage of earth

masses on the state of surface waters by applying solutions limiting soil erosion and flowing of surface runoffs heavily polluted with suspended matter into the surface waters.

Demolition earthworks are expected to be carried out mechanically using excavators and bulldozers. The volumes of earth masses, obtained from excavations, will, if possible, be distributed within the adjacent plots and in the technological strips along with their agricultural development. Embankment mounds will be constructed mainly using the frontal method.

Hazards for soil are associated with emergency situations, such as leakage of petrol derivatives in consequence of which the soil can be contaminated locally. Engine-powered machines and vehicles used during performance of earthworks will be a potential source of pollutants, as well as back-up facilities.

Works implementation is related to interference with the top surface of soil (topsoil stripping) and it will be restored in the areas of temporary occupation after the completion of works using the removed topsoil, which will be stored by the Contractor in the vicinity of the works carried out, on separate piles protected against pollution, as well as against being overrun by vehicles, and protected against overdrying and freezing.

5.5. SURFACE WATERS

The task includes two activities that may have a potential impact on the river ecosystems and on habitats directly dependent on water - construction of flood embankments and deepening of the flood control channels of Odra river.

No works performed directly in the Odra riverbed are planned.

As part of the Task (see map in Annex 7 to the EMP), the construction of ring embankments is planned, which will surround and protect only individual built-up areas of southern Krosno Odrzańskie, which will be surrounded by the embankments. The newly built embankments will not, however, limit natural flooding in the remaining floodplain area and will not constitute a migration barrier for aquatic organisms.

Among others, the assessment of changes in the current water conditions in the area resulting from the excavation of a new section of the by-pass channel (flood control channel No. 4), from deepening the bottom of the channels and construction of new flood embankments was carried out as part of the environmental impact assessment. According to the information contained in the environmental impact assessment report, the current water conditions in the Task area depend on the network of existing surface waters such as the Odra and Bóbr rivers and the layout of the existing flood control channels.

Flood control channels are activated during the flood period, mainly after the Odra flood waters appear on the Połupin polder. Outside the flood period, the water table in the channels depends on instantaneous flows of the Odra river. Odra and the channels are effluent streams regardless of whether before desilting or after desilting.

The Odra water table backs up the channels and deepening them will only increase their width and depth (which will also have a positive impact on the fish species subject to protection of the Natura 2000 "Krośnieńska Dolina Odry" site).

The artificial geological system within the channels is mainly characterized by made grounds (construction waste) originating from the period of city reconstruction, which transfer the level

of the water table in the channels horizontally into their embankments. Therefore, desludging and deepening the channels will not affect the groundwater table.

The construction of subject embankments will not change the natural dynamics of flows, it does not affect or has a slight influence on the formation of the channel morphometry. It has a slight positive effect on water quality as it reduces the inflow of the area pollution to the river.

In connection with the above, the Task implementation will have a slight effect on aquatic organisms, it also has a slight effect on other water assessment/water potential elements. At the stage of operation no impacts relevant to achieving the environmental objectives determined for surface waters in the Water Management Plan in the Odra river basin are predicted.

Water pollution with suspended matter may occur at the Task implementation stage due to the dredging works in the channels, which will not have a significant, long-term impact.

In addition, surface water will be exposed to increased inflows of suspended solids due to earth works and earth mass management in the vicinity of watercourses. In connection with the above, it is necessary to adopt an appropriate work technology (dredging, collecting excess earth masses and spoil from work sites and transporting them to storage locations) and to implement measures preventing soil erosion and limiting surface runoffs heavily polluted with suspended matter. In accordance with sec. 6.15 the Contractor shall develop an Earth masses management plan with the dredging works plan, in which the Contractor shall submit for the Engineer's approval, among others the work technology and mitigation measures to be taken.

At the implementation stage, while performing other types of works, machinery failure and surface water pollution with petroleum substances may potentially occur. When applying appropriate precautions, operating only technically sound equipment and choosing the proper locations of the above-mentioned construction processes and facilities, under normal conditions no major accidents threatening water quality are expected.

5.6. UNDERGROUND WATER

According to the position of the Regional Directorate for Environmental Protection in Gorzów Wlkp. expressed in the substantiation of the decision on the environmental conditions, the Task has no connection with the intake or change of groundwater supply, no factor has been reported that may affect the deterioration of groundwater. During construction works there is a probability of short-term spills of substances such as fuel, oils, however their scale and range will be small and will not cause groundwater pollution and all such threats will be immediately remedied by the Contractor.

There are no groundwater intakes for drinking water supply in the direct vicinity of the Task implementation area. There is a water intake in the city of Krosno Odrzańskie in Gubińska st., consisting of 6 drilled wells with a depth of up to 35 m. In accordance with the provisions of the regulation on the establishment of a protection zone for groundwater intake in Gubińska st. in Krosno Odrzańskie¹, the subject intake is located approx.. 800 m south of the Task implementation area, outside the designated protection zone of the intake. The water table slope decline of the quaternary aquifer is directed to the north-east, i.e. to the Odra valley, from the

¹ Regulation No. 23/2015 of the Director of the Regional Water Management Board in Wrocław of July 30, 2015 on establishing a protection zone for underground water intake in Gubińska st. in Krosno Odrzańskie.

intake towards the Task implementation area. In connection with the above, there is no threat to collective water supply resulting from any emergency situations in the Task implementation area.

A temporary violation of the existing water conditions may occur during works, this impact will only be temporary and will cease when the works are completed.

No water intake or discharge of wastewater into the ground water are expected, neither at the implementation nor at the operation stage of the construction. The Task's impact factors will not degrade the status assessment of the waters under its influence. The implemented project does not pose a threat to the environmental objectives of the WFD.

5.7. FLORA AND FAUNA

5.7.1. FLORA AND THE NATURAL HABITATS

Impact on natural habitats

Implementation of some of the Task sections will have an impact on natural habitats present in the vicinity of the embankment or in its new locations. The EIA report indicates that only land which makes up a small percentage of the resources of the Natura 2000 Krośnińska Dolina Odry natural habitat will be impoverished (it will undergo land use change). It also estimates that depleted habitats are widespread in the Odra valley. And so, the *Urtico-Convolutum* and *Fallopia-Humuletum* herb patches representing the 6430 habitat will be destroyed in a total area of 445 m², constituting only 0.012% of the total area of this habitat identified and indicated in the Standard Data Form (SDF) of the abovementioned Natura 2000 site, covering 384.05 ha. In addition, the herbs are characterized by rapid regeneration and low sensitivity to disturbances, which is why newly formed waterside slopes will constitute new locations for spontaneous regeneration of the herb habitat, stimulated by fluvial processes.

In case of the alluvial meadow *Cnidion dubi* representing habitat 6440, 0.47 ha of patches will be destroyed, constituting only 0.7% of the total area of this habitat identified and indicated in the SDF for the abovementioned Natura 2000 site covering 61.21 ha. The EIA report informs that the habitat patches with the code 6440 indicated in the report (covering 1.4 ha) constitute an additional habitat resource (in relation to the habitat indicated in the SDF) within the abovementioned Natura 2000 area. Therefore, as a result of the Task implementation, the protected area of the 6440 habitat will not decrease and other indicators of its state of preservation will not deteriorate.

The Task related activities within the flood control channels will cause destruction of some floating and submerged vegetation. The EIA report informs about the presence of plant communities serving as indicators of the Natura 2000 natural habitat - codes 3150, 3270 and 3130 in the channels and on their banks. Habitats of oxbow lakes and natural, eutrophic water reservoirs with the communities of *Nymphaeion*, *Potamion* (code 3150) are locally represented by the old Odra bend (channel No. 1) displaying anthropogenic forms of pressure and degeneration (e.g. neophytization, trampling). The banks or drained bottoms of water reservoirs with underwater *Littorelletea* and *Isoeto-Nanojuncetea* constitute an ephemeral habitat found in one location covering 6m², on the edge of channel No. 1. Plant communities identifying natural habitats with the code 3210, i.e. flooded, muddy river banks with *Chenopodium rubri* pp

and Bidention pp vegetation were found outside the works impact zone. Dredging along with correction and strengthening works on the channel slopes do not cover the entire length of all channels (e.g. a section of channel No. 2 is left intact, no works on the left bank of channel No. 1 - on the section from km 0 + 437.6 to km 0 + 900.0 will be executed, a sandbar is left in channel No. 1), which means that after works are completed, there will be a quick return of vegetation in a colonization process from the abovementioned refuges to the channels and to their banks. At the operation stage, vegetation of the ephemeral natural habitat code 3130 will develop again during the channel's low water levels. Due to the above, the impact shall be assessed as short-term and transient.

The Task implementation will involve the removal of trees and shrubs, as described in section 2.2.3, which will result in both a loss of potential habitats for species of protected animals (mainly birds) and a medium-term loss of landscape values on some sections of the designed embankments. As part of the environmental impact assessment, the impact of forest stand depletion on the condition of natural habitats, protected habitats and landscape values was analyzed. According to the prepared dendrological survey, 56 specimens with trunk circumferences of above 300 cm were among the trees initially selected for felling. As a result of data analysis and at the design works stage, 32 specimens were spared, including 13 crack willows (including two with circumferences of 500 cm), 10 pedunculate oaks, 5 European elms, 2 small-leaved lindens, 2 black poplars and a black locust. Leaving old trees will allow to preserve the high landscape values of several sections of the embankment. In relation to the habitats of birds nesting within the area of trees to be felled, it was found that there are many convenient biotopes enabling nesting in close proximity, and the number of the trees to be felled in comparison with the ones to remain in the city area and in its vicinity is not of a size that would result in the extinction of birds found in this part of Krosno Odrzańskie. In order to minimize the potential negative impact of the planned investment on birds - the destruction of broods during the felling of trees and shrubs in the breeding period, taking into account the identified breeding species and the biology of their reproduction, the removal of trees and shrubs must be performed outside the breeding season of birds, i.e. in the period from September-February. The trees on the section of the designed embankment were checked along the entire length of the planned Task and no protected species of beetles - no hermit beetle and no capricorn beetle were found, therefore the investment will not affect these protected insect species. Also the felling of trees will not reduce the area of their potential habitat significantly since at the design stage of determining the scope of investment implementation, 12 old pedunculate oaks with a trunk circumference of over 3 m, which may constitute potential habitats for these species in the future were spared. In connection with the above, in the opinion of the competent authority, i.e. The Regional Director for Environmental Protection in Gorzów Wielkopolski, there is no need to make replacement plantings (see Annex 4a - decision on environmental conditions).

Impact on individual species

As a result of the construction of new embankment sections, the sites of partially protected *Allium angulosum* will be destroyed. The estimated number of specimens that will be destroyed is 350. Destruction of these sites will not cause a significant deterioration of this species conservation status on a local, regional and national scale since mouse garlic is quite often found and locally present even on fallows and flood embankments in the considered section of the Odra river.

5.7.2. FAUNA

Invertebrates

The identified sites of the green snaketail and the large copper are located outside the Task implementation area, and the implementation of the works planned in their vicinity authorizes to conclude that the project has no impact on the abovementioned species. The trees on the section of the designed embankment were checked along the entire length and no hermit beetle as well as no capricorn beetle were found, therefore the Task will not affect these protected insect species. Also the necessary felling of trees will not reduce the area of their potential habitat significantly since 12 old pedunculate oaks were designated not to be removed already at the design stage of determining the scope of Task implementation.

Ichthyofauna

For protected species of fish, deepening the channel beds will ultimately result in an improvement, i.e. in a slight increase in the area of their habitat, e.g. for Amur bitterling, spined and weather loaches, in the case of channels 2, 2A, 3 and 4, and in gaining access to channels (improvement of local migration conditions), e.g. for asp, in the case of channels 1, 2 and 2A. During deepening of channels and forming their banks, a potential short-term deterioration of habitat conditions and forcing a periodic change of habitat may occur as a result of the impact of suspensions. However, this impact will be short-term and transient.

The Contractor will be obliged to carry out works in the channel beds in a manner minimizing the formation of suspension, to conduct constant monitoring of aerobic conditions in waters (measurements of suspension concentration and dissolved oxygen concentration) and to introduce breaks in work according to the results of suspension concentration and dissolved oxygen tests (mitigation measures, pos. XX of Annex 1 to the EMP). As thresholds for the suspension concentrations, for which two-hour or 24-hour breaks will be introduced, concentrations of 200 mg/L and 400 mg/L, respectively, were determined. These are the values based on specialist literature¹ and considered as posing high risk for fish (> 200 mg/l) and posing an unacceptable risk for fish (> 400 mg/l). In accordance with sec. 6.15 the Contractor shall develop an Earth masses management plan with the dredging works plan, in which the Contractor shall submit for the Engineer's approval, among others the work technology and mitigation measures to be taken. In addition, the Contractor will catch ichthyofauna from the area of works implementation and check the extracted bottom sediments in order to pick and release all the animals found in them into the water. The works will be carried out under the supervision of an ichthyologist, who will assess the effectiveness of mitigation measures as part of an ongoing environmental supervision.

After completion of the Task, the condition of the channels will not undergo a significant change, because the flood control channels will not be equipped in any structures limiting the current migration of fish (nonetheless fish with a very limited territorial range) and the water distribution will not be modified.

¹WWF-UK, Review of UKTAG Proposed Standard For Suspended Solids, August 2007, APEM REF: 410242
WWF-UK, Final Report (<https://www.deq.idaho.gov/media/903180-review-uktag-proposed-standard-suspended-solids-2007.pdf>)

Amphibians and reptiles

Presence of the European fire-bellied toad was confirmed in the buffer zone, i.e. outside the Task implementation area, and the implemented project will not have a negative impact on the species foraging and migration. The fire-bellied toad is a migratory species during the breeding season, and its presence was confirmed in the immediate vicinity of the Task implementation area, in the flood plain of the inter-embankment zone, in a small, shallow water reservoir with lush aquatic vegetation. This location is also a breeding place of a common toad and a large population of viviparous lizards. Therefore, it is possible for specimens of the above species to occur in the works implementation area of the embankment no. II.

A measure minimizing mortality of the abovementioned species caused by works, especially of the fire-bellied toad, is installation of a tight protective fence made of geotextile, dug 10 cm into the ground in the northern part of the embankment II, from km 0 +490 to 0 +650.

Disturbances due to the works related to Task implementation affecting amphibians and reptiles will be transient and receding, and the scope of the transformation of their habitats (being significant only locally) will be minor and impermanent. There are diverse and appropriate "replacement" habitats in the vicinity of the Task implementation area, in which the specimens of these species can thrive. The effects of damaging aquatic vegetation during works will be negative, short-term but reversible. There is a high probability that the new embankments as well as ditches and dykes altered for the purpose of the Task will be adapted, at least in part, by amphibians and reptiles.

In addition, in the scope of the necessary works, as early as at the Task planning stage a decision was made not to reconstruct, level and develop the bottom of the channel No. 2 or its slopes by topsoiling and sowing with grass mixture to km 0+169.3, undertaking only cleaning and maintenance works on this section (mowing slopes, pruning of damaged branches). The natural shallowing process of the abovementioned section of the channel can, at a time of an appropriate water level in the Odra valley, over time, create a convenient biotope for reproduction and wintering of amphibians.

Avifauna

In relation to birds and their habitats, protected in the Natura 2000 site Dolina Środkowej Odry PLB080004, the impacts of the Task during the construction and operation phase are not significant (see section 5.7.). The planned works in the area in question will not pose a significant threat to the bird species occurring there and not protected under the Natura 2000 Dolina Środkowa Odra PLB080004 site. Populations of birds nesting in the three inventoried areas (including the Task implementation area and the adopted 50 m buffer zone) constitute fractions of a percent of the national population. The EIA report indicates nesting of the red-backed shrike and the barred warbler among shrubs planned for felling, but does not indicate a confirmed nesting of birds on the trees planned for felling. There are many convenient biotopes for nesting of these birds in close proximity to the shrubs to be removed, and the number of the trees to be felled in comparison with the ones to remain in the city area and in its vicinity is not of a size that would result in the extinction of birds found in this part of Krosno Odrzańskie.

Among the measures minimizing the impact on birds, the condition of leaving the reed on the bank of the channel and the sandy sandbar located on the km 0 +700 to km 0 +950 section of

the flood control channel was indicated (preservation of the water rail and common moorhen breeding sites).

Due to the scope of the planned tree removal, in order to minimize the potential negative impact of the Task on birds - the destruction of broods during the felling of trees and shrubs in the breeding period, taking into account the identified breeding species and the biology of their reproduction, the removal of trees and shrubs must be performed outside the breeding season of birds, i.e. in the period from September-February.

Teriofauna

Traces of the presence of the European beaver and the presence of the otter were found in the buffer zone, i.e. outside the Task implementation area, and its implementation will not have a negative impact on the foraging and migration of these species.

5.8. PROTECTED AREAS

Natura 2000 sites

In accordance with the substantiation of the decision on environmental conditions, the result of the assessment of the planned activities presented in the EIA Report is considered correct and along with introducing the minimizing measures, the Task does not have a significant, and in particular a significant negative effect on the protection objectives of the Natura 2000 sites, within the meaning of Art. 33 of the Act on environmental protection. The Task implementation area does not cocreate ecosystems with the protected habitats and species, the transformation of which may contribute to the change of key processes, structures, connections and relations of ecosystems of the Natura 2000 sites in question. No direct or indirect impact the scale of which could result in a bad condition of the protected species or the natural habitats has been identified, as the Task implementation does not alter the species population, does not change the area of their habitats, cause fragmentation of natural habitats or creation of a migration barrier, and will not affect key processes and relations that shape the structure of the subject areas. The impacts, during construction and operation, will not be of a scale violating the natural balance or significantly affecting the subject of protection of the Natura 2000 areas. The expected scope of works, i.e. construction of embankments in the vicinity of buildings and the deepening of water channels, will not adversely affect the integrity of the Natura 2000 sites and the coherence of the Natura 2000 network. The current function of the wildlife corridor of the Odra valley will not change and the floodplain area, where natural fluvial processes significant for the natural resources of the abovementioned Natura 2000 sites take place, will not decrease.

In relation to birds and their habitats protected in the Natura 2000 site Dolina Środkowej Odry PLB080004, the Task impacts during the construction and operation stages are not significant, and in some cases even do not create a significant cause-and-effect relationship. The substantiation is the lack of concentration of wintering birds near the Task implementation area and the distance of the only breeding site (of the corncrake), of a minimum 100 m from the Task implementation area. Due to the dependence of the current water conditions in the area of the Task implementation on the network and regime of surface waters, i.e. the Odra and Bóbr rivers, as well as on the layout of the existing flood control channels, the designed scope of works will not alter these conditions significantly, and thus will not cause change (deterioration) of the bird habitats.

The Task implementation area is located approximately 500 m east of the boundaries of the protected landscape areas "Krośnińska Dolina Odry" and "Dolina bobru". The Task implementation will not affect the surface water regime of the Odra and Bóbr rivers determining the natural values and development of the above protected landscape areas. Implementation of the Task will be carried out outside these areas and does not violate the prohibitions in force.

5.9. ACOUSTIC CLIMATE

At the investment implementation stage, noise emissions will be generated by the operation of machinery and heavy construction equipment and the movement of vehicles servicing the construction site. The extent of the impact of noise associated with the construction will depend on the type of plant used, the number of machines simultaneously working and their operating time. The sound power level of most construction machines falls within $L_{WA} = 105-115$ dB.

The noise generated at the investment implementation stage will be diffused, emitted only during the daytime.

Increased noise emission will be associated only with the implementation stage, i.e. a short period limited to carrying out the necessary works. Periodic nuisances related to noise emissions will disappear with the completion of individual stages of works.

The distance between the work implementation area and the housing development (areas covered by noise protection) varies depending on the element of the Task. The closest housing development is located along the northern bank of the channel no. 1. Due to the above, the works will be carried out during the daytime, and the Contractor will be required to document and monitor the technical condition of buildings exposed to vibrations and will use equipment, technologies and methods ensuring reduction of vibrations.

5.10. MONUMENTS OF CULTURE

The cultural monuments presented in sec. 4.9 do not collide with the scope of the planned works. As a result of the mitigation measures taken, the Task will not have a significant negative impact on cultural monuments.

The Task related works carried out near the buildings under conservator's protection - Bohaterów Wojska Polskiego 1/1a (plot no. 235/2) and Bohaterów Wojska Polskiego 6 (plot no. 231/1), should be performed with extreme caution so as not to damage the historic substance of the abovementioned objects.

In connection with the works to be carried out within the urban-architectural complex of the city of Krosno Odrzańskie, at the request of the Regional Water Management Board in Wrocław, the Lubuskie Voivodeship Conservator of Monuments by decision of February 23, 2018 (no.: ZA.5161.52.2018) determined the scope and type of archaeological research for the implementation of the Task:

Type of research: archaeological research consisting in surveillance of the construction excavations during earthworks and an ongoing documentation of the course of works, with the possibility of work alteration; and archaeological rescue excavations in the event of exposing an archaeological site, cultural strata or relics of former development, exposed to destruction and requiring a thorough exploration and detailed documentation.

The scope of archaeological research: embankment I (km 0 +000 - 1 +279), embankment II (km 0 +000 - 1 +387.6), securing the right bank of the channel no. 1 (km 0 +072 - 1 +257)

Conducting archeological research is allowed after obtaining the permission of the Lubuskie Voivodeship Conservator of Monuments under an administrative decision.

5.11. MATERIAL GOODS

Flood protection of the residential and public buildings as well as of 31 objects under conservator's protection will be a lasting benefit of the Task.

Impact on buildings located in the vicinity of the construction sites and transit routes of vehicles supporting works is possible.

5.12. HUMAN HEALTH AND SAFETY

Impact on human health and safety during the implementation of the Task may be related, among others with the following factors:

- increased noise emission,
- pollution with petroleum substances,
- entry of unauthorized persons in the area of works,
- occurrence of high water levels in the Odra river posing a threat to the area of works implementation and to adjacent areas,
- carrying out works within waters and in the immediate vicinity of water.

The detailed selection of equipment units for the purposes of performing the works covered by this Task is left to the discretion of the Contractor, after prior approval by the Engineer. Equipment, machines or tools that do not guarantee compliance with the quality requirements of the works, with the OHS regulations and the health and safety regulations (BIOZ), and which may cause damage to the existing infrastructure or to building and land development elements, will not be approved by the Engineer.

The air pollution and noise emissions generated during Task implementation will be local and limited to the area of works.

5.13. EXTRAORDINARY HAZARDS TO THE ENVIRONMENT

The implementation of the planned Task is associated with the possibility of the following crisis or emergency situations that may cause extraordinary threats to the environment:

- **Uncontrolled emission (leakage) of petroleum substances**
An emergency situation may occur at the stage of construction, as a result of which a leakage of oil derivative substances from vehicles, construction machinery, reservoirs etc. will occur, causing contamination of surface water and/or land surface (including soil). During the works implementation, the risk of an emergency situation will be minimized by providing appropriate procedures and measures limiting losses in the event of damage to the environment
- **Fire or explosion of flammable substances**
An emergency situation may occur at the stage of construction connected with the occurrence of fire (e.g. due to equipment failure, personnel's negligence, explosion of

flammable substances, lightning strike, etc.). The occurrence of such a situation creates a threat to both the Contractor's staff and the environment. However, in order to minimize the occurrence of such situations, e.g. only equipment in a suitable technical condition will be maintained and used properly.

- **Finding unexploded ordnance**

It is possible to find unexploded ordnance or duds during works, such as fuses, missiles, air bombs, artillery and rifle cartridges, bazookas, grenades, all types of mines, explosives, scrap containing remains of explosives, etc. The task will be implemented so as to eliminate the risk of any threat to the Contractor's staff and the nearby residents. Procedures will be developed for the event of such a situation and appropriate personnel (sapper supervision) will be engaged, responsible i.a. for conducting reconnaissance of the Task implementation area in order to determine the presence of any unexploded ordnance or duds.

- **Sudden surge of water, flood**

The Task implementation area covers lands adjacent to the Odra river and flood control channels. At the construction stage, a sudden rise of water or a flood may occur at the construction site, threatening the health and life of personnel and causing material damages. During the period of high water levels or blockage floodings, the Contractor's equipment and elements of the back-up facilities may be located within the riverbed and in the coastal zone. Accordingly, procedures will be developed for the event of such a situation

- **Potential failure of flood embankment at the operation stage**

Flood embankment operation is associated with a potential risk of water overflow through the embankment crest or of breaking the embankment due to the occurrence of an exceptionally strong and long-lasting impoundment of river water causing long-term flooding of the inter-embankment zone areas or an exceptional increase of water level in the inter-embankment zone. Specific design and technical solutions applied for the planned flood protection embankments are employed to limit the risk of occurrence of such disasters, in accordance with valid design guidelines for hydraulic structures (in particular special dimensions of flood protection embankments, appropriate selection of materials for embankment construction, application of required membranes, works technology providing the necessity of specific compaction of the embankment, etc.). Considering the above safeguards and the fact that the embankments were designed according to hydraulic data characterising the scale of flows existing in rivers in this area in calculation periods, it can be concluded that the discussed hazard is potential only and that the probability of its occurrence is negligible.

- **Epidemiological threat**

In the event of an epidemic, there may be risks to both the health and life of the employees of the Contractor and the personnel of the Employer and Engineer, as well as there may be risks to the construction process. By the Regulation of the Minister of Health of March 20, 2020 *regarding the announcement of the state of epidemic in the territory of the Republic of Poland* (Journal of Laws, item 491, as amended) in the period

from March 20, 2020 until further notice, an epidemic status has been announced in the Republic of Poland in connection with the SARS-CoV-2 virus infections.

5.14. CUMULATIVE AND TRANSBOUNDARY IMPACTS

In the environmental impact assessment procedure, issues related to cumulative impact were analyzed.

In accordance with the information contained in the substantiation for the decision on environmental conditions of 27 February 2017 (see Annex 4a to the EMP), the cumulative impact of the planned Task with other similar projects would take place in the event of their simultaneous implementation. Considering the division of the implemented works into sections on a small scale in relation to the size of the entire embankment system of the Odra areas, the possibility of accumulation of significant impacts of the planned Task with other projects was ruled out.

Due to the date of issue of the above decision, an update is presented below, using the analyzes carried out at the stage of issuing the decision of the Mayor of Krosno Odrzańskie on environmental conditions of March 2, 2020 (No.: GN.6220.10.13.2019.MKu) for the project including Reconstruction of the road bridge in Krosno Odrzańskie at km 514.1 of the Odra river. As part of this procedure, the cumulative impacts of tasks were analyzed:

- Flood protection of Krosno Odrzańskie (subject Task)
- Reconstruction of the road bridge in Krosno Odrzańskie at 514.1 km of Odra river (OVFMP Task 1B1/1 (b))
- Revitalization of the part of the lower city including: Grobla St, Bobrowa St, Prusa Square, Żeromskiego St, Wodna St, Rybaki St
- Construction of the beltway for Krosno Odrzańskie along national road No. 29
- Reconstruction of river control infrastructure on the Odra River. Adaptation to the conditions of Class III waterway, on the section from the village of Ścinawa to the estuary of the Nysa Łużycka River – Stage II (Task OVFMP 3. 1B.1/1 (a))

Information on the cumulative impact of the Task and other analyzed projects is presented below.

1B.1/1 (b): Reconstruction of the road bridge in Krosno Odrzańskie at km 514.1 of Odra river - the scope of the Task includes the reconstruction of the existing road bridge in order to ensure a minimum ground clearance under the facility and to enable effective ice-breaking on the Odra river, and to adapt the existing crossing in possible aspects¹ to the conditions set by the Regulation of the Minister of Transport and Maritime Economy of 30 May 2000 *on technical conditions to be met by road engineering facilities and their location*. Implementation of the Task may lead to the accumulation of impacts on local and regional populations of

¹Due to the historic preservation maintenance of the bridge in Krosno Odrzańskie, the works carried out will not make it achieve all the technical parameters required for this type of objects (including the required permissible load for the fast traffic trunk road (GP class), distance between the drainage axis and the curb).

protected species of fauna and flora and on the Natura 2000 sites Krośnieńska Dolina Odry PLH080028 and/or Dolina Śródkowej Odry PLB080004, as well as on the ecological corridor Dolina Śródkowej Odry GZK-19. However, these impacts are not significant enough to pose a threat to ensuring the proper conservation status of the Natura 2000 sites' protection objects. Accumulation of impacts in terms of impacts on land surface and landscape, emissions of air pollutants and noise is also expected. Both Contracts will be implemented in a similar period, therefore the stage of works will be properly coordinated by the Consultant Engineers of individual contracts (mainly in the area of the temporary bridge crossing on the left bank of the Odra river).

Revitalization of the part of the lower city including: Grobla St, Bobrowa St, Prusa Square, Żeromskiego St, Wodna St, Rybaki St (total length approx. 1470 m, area approx. 3.5 ha, plot No. 5/2, 55, 56/1, 56/2, 56/3, 4, 49, 33, 30/3, 34, 48, 56, 47, 68/13, 68/25, 64/2, 66, 117/1 precint002 Krosno Odrzańskie1 - construction of new pedestrian and bicycle communication routes, reconstruction of the existing road infrastructure, improving aesthetics of the environment and giving the areas recreational, social, cultural, educational, economic and tourist functions.

This investment will be implemented in the impact area of the planned Task. In the case of simultaneous construction works, accumulation of impacts in the scope of air emissions and noise may be expected. There is a potential accumulation of impacts on protected species of animals, also being the subject of protection of Natura 2000 sites Krośnieńska Dolina Odry PLH080028 and Dolina Śródkowej Odry PLB080004 (connected with disturbing and startling the animals). However, due to carrying out works in urban areas located outside the key areas for the integrity of Natura 2000 sites, there is no risk of significant negative impacts on the Natura 2000 sites' protection objects.

Construction of the beltway for Krosno Odrzańskie along national road No. 29 together with the reconstruction of existing technical infrastructure devices, protection of agricultural and forest areas and protection of cultural goods2. The construction of a bridge over the Odra River will increase the comfort of road users and city residents.

Implementation of the Task, depending on the chosen variant, may lead to the accumulation of impacts on local and regional populations of protected species of fauna and flora and on the Natura 2000 sites Krośnieńska Dolina Odry PLH080028 and/or Dolina Śródkowej Odry PLB080004, as well as on the ecological corridor Dolina Śródkowej Odry GZK-19. The

1http://bip.wrota.lubuskie.pl/ugkrosnoodrzańskie/zamowienia_publiczne/284/198/REWITALIZACJA_CZESCI_DOLNEGO_MIASTA_OBEJMUJACEGO_ULICE_3A_GROBLA_2C_BOBROWA_2C_PLAC_PRUSA_2C_ZEROMSKIEGO_2C_WODNA_2C_RYBAKI/

2Technical, Economic and Environmental Study with elements of the Program Concept (STEŚ-R) together with materials necessary for issuing the decision on environmental conditions for the investment titles: Construction of the beltway of Krosno Odrzańskie along national road No. 29. Transprojekt Gdański. <https://www.gddkia.gov.pl/pl/a/31388/Spotkanie-informacyjne-w-sprawie-budowy-obwodnicy-Krosna-Odrzanskiego>

development of STEŚ (Technical - Economical - Environmental Study) is planned for August 2020¹.

1B.1/1 (a): Reconstruction of river control infrastructure on the Odra River. Adaptation to the conditions of Class III waterway, on the section from the village of Ścinawa to the estuary of the Nysa Łużycka River – Stage II. - reconstruction of the groynes. One of the main potential construction facilities' locations is planned in the existing port in Krosno Odrzańskie.

Implementation of the Task may lead to the accumulation of impacts on local and regional populations of protected species of fauna and flora and on the Natura 2000 sites Krośnieńska Dolina Odry PLH080028 and/or Dolina Środkowej Odry PLB080004, as well as on the ecological corridor Dolina Środkowej Odry GZK-19. Impact accumulation is also expected in the scope of air pollution and noise emission. No threat of significant negative impacts on Natura 2000 sites was determined.

No significant transboundary environmental impacts were identified within the environmental impact assessment in this context, in accordance with the information contained in the substantiation for the decision on environmental conditions of 27 February 2017 (see Annex 4a to the EMP). This is due to the nature of the Task and its location in relation to the border with the countries neighboring Poland. The Task implementation, consisting in the construction of embankments of Krosno Odrzańskie and within the bypass channels, will not narrow the Odra valley and thus will not significantly change the flow of Odra waters below Krosno Odrzańskie, including the border Odra area.

Given the small range of impact of the Task on the environment, limited in most cases to the width of the technological stripe, and the fact that the investment is located at a distance of approx. 23 km straight east of the Polish-German border, the possibility of causing a transboundary impact on the environment can be excluded.

¹<https://www.gddkia.gov.pl/pl/a/31277/DK29-Obwodnica-Krosna-Odrzanskiego>

6. DESCRIPTION OF MITIGATION MEASURES

Annex 1 of the EMP sets out a list of mitigation measures binding the Contractor in order to limit the negative impact of the planned Task on the environment. The Contractor covers all the costs of the EMP under the contract, and the agreed contract price covers all the costs associated with it. These measures were developed on the basis of the conditions contained in applicable administrative decisions regarding environmental protection issued for the Task, supplemented with additional conditions established at the stage of preparation of the EMP. The implementation of mitigation measures should ensure the implementation of the Task in accordance with the World Bank guidelines (guidelines regarding Environment, Health and Safety: The Environmental, Health, and Safety (EHS) Guidelines). The requirements for the construction phase are set out in the General EHS Guidelines¹, in particular in section 4 (*Construction and Decommissioning*). In reference to dredging and spoil management, consideration should be given to guidelines for dealing with sediments extracted from riverbeds contained in the document Environmental, Health, and Safety Guidelines Ports, Harbors, and Terminals².

Temporary and permanent land acquisition in connection with the Task are carried out on the principles set out in the Real Estate Acquisition and Resettlement Action Plan (LA&RAP) and the Operational Policy of the World Bank OP. 4.12.

In order to supervise and monitor the mitigation measures contained in the EMP, a dedicated position will be appointed in the Contractor's structure - the EMP Coordinator as well as a Health and Safety Expert and Social Expert of the Contractor's team (see pos. 78 cat. 13 - Requirements for the Contractor's personnel involved in the implementation of the EMP)³.

A selection of characteristic mitigation measures is presented below, broken down into individual environmental components discussed in the sections 4 and 5 of the EMP.

6.1. TERRAIN AND LANDSCAPE

The implementation of the Task is related to the permanent occupation of the area by newly built flood embankments, however, as part of the environmental impact assessment carried out, it was concluded that the Task will not have a significant negative impact on the local landscape and the land surface. In order to limit the negative impact of the Task on the surface of the earth and the landscape, standard mitigation measures related to the location and limitation of the area of temporary occupation, to preservation of natural and landscape values outside the locations necessary for occupation, to location of roads, construction facilities and technological yards are set out.

The location of technological roads, construction facilities and other temporary occupation locations should be planned and carried out in such a way as to ensure, i.a. the preservation of protected natural habitats, appropriate equipment of these places and protection of trees not

¹ https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines

² https://www.ifc.org/wps/wcm/connect/ddfac751-6220-48e1-9f1b-465654445c18/20170201-FINAL_EHS+Guidelines+for+Ports+Harbors+and+Terminals.pdf?MOD=AJPERES&CVID=ID.CzO9

³ In Annex 1 of the EMP, mitigation measures were assigned to 16 thematic categories (from cat. 1 to cat. 16).

intended for felling. Access roads to the Task implementation area will be determined on the basis of existing roads. The area of access roads and their surroundings should be restored to the condition from before the completion of the Task. The time of Task implementation should be limited to the minimum necessary to ensure that the negative impact on the landscape does not last long. After the works are completed, land reclamation consisting in clearing the area and restoring topsoil and grassland should be carried out.

Temporary and permanent land acquisition in connection with the Task will be carried out on the principles set out in the Real Estate Acquisition and Resettlement Action Plan (LA&RAP) and the Operational Policy of the World Bank OP. 4.12.

The basic mitigation measures in the scope of limiting the impact on the land surface and landscape are set out in particular in the following items in the table of Annex 1 of the EMP);

- pos. 1-5 (Cat. 01 - Requirements related to the location and limitation of the area of temporary occupations);
- pos. 6-7 (Cat. 02 - Requirements regarding transport services in the Task implementation area);
- pos. 17 (Cat. 04 - Requirements concerning securing the protected natural resources);
- pos. 24-26 (Cat. 05 - Rules for land reclamation and handling topsoil);
- pos. 31-32 (Cat. 06 - Requirements for felling and protection of trees and shrubs);
- pos. 41-42 (Cat. 08 - Requirements for preventing the spread and for the eradication of invasive plant species);
- pos. 43 (Cat. 09 - Rules for conducting works in watercourse beds);
- pos. 85 (Cat. 14 - Requirements resulting from a permit required by Water Law Act).

6.2. CLIMATE

In the case of this Task, no mitigation measures have been identified as necessary to protect the local climate conditions.

6.3. AIR QUALITY

The following standard mitigation measures are recommended to reduce/eliminate the negative impact of the Task on air quality:

- minimizing the operating time of combustion engines of machines and vehicles at idle and limiting the speed of vehicles in the construction area;
- observing the principle of switching off machinery and equipment during breaks in operation.
- applying organizational and technical measures aimed at protection against dust emission during transport operations and construction works.

The mitigation measures aimed at limiting the impact on air quality are set out in particular in the following items in the table of Annex 1 of the EMP);

- pos. 50-53 (Cat. 10 - Requirements for preventing environmental pollution).

6.4. SOILS AND LAND

Threats to the condition of soil and land in the form of pollution, in particular with petroleum-derivatives, may arise in the event of improper operation of equipment and machinery, operation of equipment and machinery in poor technical condition, lack of procedures and technical measures for the event of releasing pollutants into the environment.

In connection with the above, the following mitigation measures have been set out as requirements:

- the Contractor is obliged to develop procedures to be followed in the event of spills of petroleum derivatives;
- the Contractor is obliged to provide the equipment for removing land and water pollution;
- the Contractor must use functional equipment subject to regular technical inspections.

In addition, measures aimed at protecting the land surface at locations where a release of substances hazardous to the soil and water environment may occur, in particular liquid waste (construction site facilities, waste storage sites for liquid waste in particular) have been introduced.

Due to the need to carry out significant earthworks in the vicinity of watercourses, the Contractor will minimize the impact of earthworks and the transport and storage of earth masses on the state of surface waters by using solutions limiting soil erosion and surface runoffs heavily polluted with suspended matter.

The method of developing spoil from dredging and earth masses management will be included by the Contractor in the Earth masses management plan with the dredging works plan

(see p. 6.15), which will be developed taking into account the World Bank EHS - Environmental, Health, and Safety Guidelines Ports, Harbors, and Terminals¹.

The mitigation measures aimed at limiting the impact on soil and land are set out in particular in the following items in the table of Annex 1 of the EMP);

- pos. 11-14 (Cat. 03 - Organization of the construction site, construction site facilities, warehouses and storage yards);
- pos. 33-41 (Cat. 07 - requirements for waste management);
- pos. 49, 50, 53-55 (Cat. 10 - Requirements for preventing environmental pollution).

6.5. SURFACE WATERS

Due to the location of the Task in close proximity to surface waters, activities for the protection of surface waters are consistent with activities for protection against soil pollution.

In addition, surface water will be exposed to increased inflows of suspended matter due to earthworks and earth mass management in the vicinity of watercourses. In connection with the above, it is necessary to adopt an appropriate work technology (dredging, collecting excess

¹https://www.ifc.org/wps/wcm/connect/ddfac751-6220-48e1-9f1b-465654445c18/20170201-FINAL_EHS+Guidelines+for+Ports+Harbors+and+Terminals.pdf?MOD=AJPERES&CVID=ID.CzO9

earth masses and spoil from work sites and transporting them to storage locations) and to implement measures preventing soil erosion and limiting surface runoffs heavily polluted with suspended matter. In accordance with sec. 6.15 the Contractor shall develop an Earth masses management plan with the dredging works plan, in which the Contractor shall submit for the Engineer's approval, among others the work technology and mitigation measures to be taken.

In particular, in order to protect the Odra waters against the inflow of an increased suspension, carrying out works in the channels (dredging works) is conditioned by the results of tests on the concentration of the suspension in accordance with the monitoring measure in pos. 99 of Annex 2 to the EMP: - in accordance with the measure described in pos. 44, if suspension concentrations higher than 200 mg/l are noted (at monitoring points located approx. 200 m below the estuary of Channel No. 1 to the Odra River), the intensity of work will be limited (2-hour breaks, every 2 hours), and if concentrations > 400 mg/l of suspension are found, the works will be suspended for a period of at least 24 hours.

The mitigation measures aimed at limiting the impact on surface waters are set out in particular in the following items in the table of Annex 1 of the EMP);

- pos. 11-14 (Cat. 03 - Organization of the construction site, construction site facilities, warehouses and storage yards);
- pos. 33-41 (Cat. 07 - Requirements for waste management);
- pos. 44 (Cat. 09 - Rules for conducting works in watercourse beds);
- pos. 53-55 (Cat. 10 - Requirements for preventing environmental pollution).

6.6. UNDERGROUND WATER

The task does not generate negative impacts on the condition of groundwater. Standard mitigation measures are consistent with those specified for the protection of land, soil and surface water (see sections 6.3. and 6.4).

6.7. ACOUSTIC CLIMATE

The Task implementation stage will involve short-term noise emissions during the use of machinery and equipment necessary for the execution of works. Due to the local and short-term nature of the emissions, they will not have a significant impact on the acoustic climate in the vicinity of the location of individual sections of works during the implementation stage. The works shall be carried out during the daytime (6:00 - 22:00) and the mitigation measures will be implemented to limit the intensity of impacts during the works implementation stage:

- the construction equipment should be functional, also in terms of noise emissions;
- the time of operation of machine and vehicle combustion engines at idle will be kept to a minimum;
- the principle of switching off machinery and equipment during breaks in operation will be observed.

The mitigation measures concerning noise reduction are set out in particular in the following items in the table of Annex 1 of the EMP);

- pos. 6 (Cat. 02 - Requirements regarding transport services in the Task implementation area);
- pos. 52, 53, 56, 57 (Cat. 10 - Requirements for preventing environmental pollution).

6.8. FLORA AND FAUNA

In order to limit and prevent the negative impacts, a number of mitigation measures have been proposed to be implemented at the stage of works execution. The Contractor should ensure that the Programme of the works is such that the dates and location of the individual stages of the construction works are adjusted to the requirements of the environmental decisions and the EMP and do not affect the individual specimens of protected species present in the Task implementation area and its surroundings.

The Contractor's responsibility will be to provide the services of an environmental supervision team when carrying out the works. The Contractor's environmental supervision team will include experts in fields such as ornithology, teriology, herpetology, botany/phytosociology and ichthyology. Before commencing the works, a one-time inventory of temporary and permanent occupation areas should be also carried out, aimed at determining the current distribution of protected plant species and those listed on the national and regional red lists of endangered plant species, and at determining the places of potential occurrence of these species and to determine the areas of natural value. During the works, vegetation outside the area covered by the Task must not be destroyed.

The proposed mitigation measures are aimed at:

- limitation of accidental animal mortality (e.g. by securing manholes, excavations, collectors etc. against the possibility of small animals falling into them, by trapping and moving the animals outside the works implemetation area, inspecting trees for the presence of the protected species of beetles and bats, carrying out felling of trees and shrubs outside the breeding season, fencing of sites in the vicinity of locations where amphibians are present and of seasonal routes of amphibian migration);
- limitation of accidental mortality of aquatic animals by electrofishing and checking the spoil for the presence of animals (in particular fish and mollusks, invertebrate larval stages) - caught individuals will be transfered and released into the watercourse in locations ensuring their safety;
- protection of natural habitats, the plant sites, including trees and shrubs not intended for felling (in-field markings, physical protection);
- restoration of natural values after the completion of works (clearing the area of temporary occupations, restoration of green areas, protection of the natural habitat 3150 Oxbow lakes and natural eutrophic lakes with Nympheion and Potamion communities within the channel No. 1 along with maintaining the identified bird breeding sites).
- minimizing the impact on the ichthyofauna of the Odra River of dredging works in the channels by monitoring the concentration of suspension in the Odra waters and introducing, if necessary, breaks in works **in accordance with the monitoring measure in pos. 93 of Annex 2 to the EMP**: at a distance of approx. 200m below the the Channel 1 estuary to the Odra River, monitoring of the concentration of suspension in the Odra waters should be carried out during dredging works - in the event of suspension concentrations higher than 200 mg/l (at monitoring points located approx. 200m below the Channel No. 1 estuary to Odra river), the intensity of work will be limited (2-hour breaks, every 2 hours), and in the case of suspension concentrations > 400 mg/l, works will be suspended for a period of at least 24 hours.

In addition, the Contractor shall develop an Earth masses management plan with the dredging works plan, in which it shall submit for the Engineer's approval, among others the work technology and mitigation measures to be taken in relation to ichthyofauna protection. During the works, the Contractor's environmental supervision team (the team's expert ichthyologist) should above all assess the effectiveness of mitigation measures, in particular during fish spawning (March - mid-July) as part of an ongoing environmental supervision.

The mitigation measures aimed at protection of wildlife are set out in particular in the following items in the table of the Annex 1 of the EMP);

- pos. 3-5 (Cat. 01 - Requirements related to the location and limitation of the area of temporary occupations);
- pos. 8-10 (Cat. 03 - Organization of the construction site, construction site facilities, warehouses and storage yards);
- pos. 16-23 (Cat. 04 - Requirements concerning securing the protected natural resources);
- pos. 24-26 (Cat. 05 - Rules for land reclamation and handling topsoil);
- pos. 27-32 (Cat. 06 - Requirements for felling and protection of trees and shrubs);
- pos. 42-43 (Cat. 08 - Requirements for preventing the spread and for the eradication of invasive plant species);
- pos. 44-49 (Cat. 09 - Rules for conducting works in watercourse beds);
- pos. 77 (Cat. 13 - Requirements for the Contractor's personnel involved in the implementation of the EMP).

6.9. PROTECTED AREAS

The task concerns small fragments of the protected areas. Measures minimizing the impact on protected areas overlap with the measures set out for the wildlife conservation set out under 6.7. They include, in particular, measures in the scope of securing the habitats of species and the sites of protected species as well as measures regarding time limits for felling works. These measures will protect the habitats and sites of species against accidental destruction and removing trees outside the breeding season of birds together with tree inspections for the presence of the protected species of beetles and bats will eliminate significant impacts on the protected fauna.

6.10. MONUMENTS OF CULTURE

Due to the rich historical past of this part of Krosno Odrzańskie within which the Task implementation area is located, there is a very high probability of encountering archaeological finds and single artifacts during earthworks execution, such as fragments of boats in canals, etc., especially since some of the debris from the historic buildings of the city center was used after the war for strengthening the banks of Channel No. 1.

Throughout the entire period of earthworks execution, the Contractor shall ensure the participation of a team of expert archaeologists (Contractor's archaeological supervision holding relevant industry licenses). In particular, the Contractor will carry out archaeological research in the area of the designed embankment I and the embankment II and will secure the right bank of channel 1, in accordance with the instructions of the Provincial Conservator of Monuments specified in the decision in Annex 4d to the EMP, determining the scope and type

of archaeological research (the scope of the decision is also cited in section 5.10.). In order to implement the measures, the Contractor will also obtain, on the basis of the power of attorney granted by the Employer, the permit of the Voivodeship Conservator of Historic Monuments (VCHM) for conducting archeological research.

In order to implement the above provisions of the EMP related to the Protection of cultural heritage and monuments, the Contractor shall, if necessary, also obtain a permit from the Voivodeship Conservator of Historic Monuments (VCHM) to carry out rescue archaeological research and shall carry out the indicated research.

Works carried out near the buildings under conservator's protection - Bohaterów Wojska Polskiego 1/1a (plot no. 235/2) and Bohaterów Wojska Polskiego 6 (plot no. 231/1), will be performed with extreme caution so as not to damage the historic substance of the abovementioned objects.

Mitigation measures concerning protection of cultural landscape and monuments are included in Annex 1 to the EMP in pos. 58 and 62 (Cat. 11 - Requirements for the protection of cultural monuments) and pos. 75 (cat. 13 - Requirements for the Contractor's personnel involved in the implementation of the EMP).

6.11. MATERIAL GOODS

When acquiring a property, the Contractor will be obliged to apply the World Bank Policy expressed in the Project Operational Manual of the Odra-Vistula Flood Management Project and apply the Land Acquisition and Resettlement Action Plan. This applies to properties intended for temporary occupation not covered by the investment project implementation permit (access roads, construction site facilities, etc.). The negotiations and agreements between the Contractor and an owner of the property regarding temporary occupation will be supervised by the Consultant to ensure the integrity of the agreement and its beneficial nature for the land owner.

The Contractor will be responsible for any damage to structures and buildings, roads etc. caused by it or its Subcontractors during the execution of the works. The Contractor shall immediately repair any resulting damages at their own expense and also, if necessary, shall perform other works instructed by the Engineer.

In connection with the above, before commencing the works during which vibrations posing risk to the nearby buildings, residents and infrastructure facilities may occur (including in particular the historic buildings referred to in section 6.10), the Contractor shall, before the commencement of works during which vibrations posing risk to the nearby buildings, residents and infrastructure facilities may occur, carry out an inventory of existing buildings and objects, with particular emphasis on cracks and damages and shall use the equipment, technologies and methods ensuring limiting the vibrations.

The mitigation measures aimed at protecting material goods are set out in particular in the following items in the table of the Annex 1 of the EMP);

- pos. 6-7 (Cat. 02 - Requirements regarding transport services in the Task implementation area);
- pos. 63-65, 71, 73, 74 (Cat. 12 - Requirements for protection of human health and safety);

- pos. 84 (Cat. 14 - Requirements resulting from a permit required by Water Law Act).

6.12. HUMAN HEALTH AND SAFETY

Measures concerning the protection of human health and safety were defined, related to the proper organization of work, technical measures, fire protection, construction sites, use of vehicles and machinery and their condition, as well as training regarding spreading of HIV-AIDS type diseases and other infectious diseases including COVID 19.

During the works, the Contractor ensures a military ordnance disposal supervision over the works (carried out by the sapper supervision team), consisting in sapper's reconnaissance prior to the commencement of works and in ongoing checks and clearing of the Task implementation area of hazardous objects of military origin along with their utilization.

The Contractor will ensure the implementation of detailed guidelines on the requirements of occupational safety, including the establishment and implementation of safety procedures when carrying out works and equipping the employees with appropriate personal protective equipment. In particular, within the Task implementation area, the Contractor is obliged to designate hazardous areas that pose a threat to human health and life, and mark these areas with warning boards and additionally secure against unauthorized access. The Contractor must also secure and mark the construction site in accordance with the applicable law.

The mitigation measures aimed at protecting human health and safety are set out in particular in the following items in the table of the Annex 1 of the EMP);

- pos. 73-74 (Cat. 12 - Requirements for protection of human health and safety);
- pos. 76 (Cat. 13 - Requirements for the Contractor's personnel involved in the implementation of the EMP).
- pos. 82-91 (Cat. 15 - Particular requirements of the ES World Bank policies).

6.13. EXTRAORDINARY HAZARDS

Crisis situation

In the event of a crisis, the competent services should be notified first:

Service	Phone no.
Emergency number from a mobile phone	112
Police	997
Fire Brigade	998
Emergency medical services	999
Municipal police	986

Rules for notification of crisis situations, including accidents on or near the construction site and accidents related to the implementation of the Task (e.g. during transport) are contained in the Annex 1 to the EMP:

- pos. 92 (cat. 15 - Special requirements of the World Bank ES policies).

It is the Contractor's responsibility to counteract threats in the first place and, if they occur, limit the effects of their occurrence. The basic risks are characterized below, while the list is open and not exhaustive in terms of the risks of other threats not listed in the EMP.

Flood

Prior to the commencement of works, the Contractor shall prepare the Flood Protection Plan for the duration of the works and obtain the Engineer's approval for its contents. This document will describe, among other things, the procedures to be followed in the event of flood occurrence (see Section 6.15).

The obligation to develop the abovementioned plan is included in pos. 67 in Annex 1 of the EMP (Cat. 12 - Requirements for protection of human health and safety).

Leakage of petroleum derivatives and chemical substances

Leakage of petroleum derivatives into soil and water is another type of an extraordinary threat. In order to reduce the risk of environmental pollution, the Contractor shall develop a procedure related to spillage in the form of a Quality Assurance Plan, regarding the procedures and steps to be taken in the event of a possible spill of substances harmful to the soil and water environment, in particular petroleum derivatives - pos. 54 (Cat. 10 - Requirements for preventing environmental pollution) and after it is approved by the Engineer, shall act in accordance with it during works implementation.

Finding unexploded ordnance or other hazardous objects of military origin

The Contractor is obliged to provide sapper supervision services (sapper supervision team holding the required industry licenses) which will ensure a sapper inspection performed prior to the commencement of works and an ongoing checking and cleaning the area of any hazardous objects of military origin (among others, igniters, missiles, air bombs, artillery and rifle cartridges, armor, grenades, all types of mines, explosives, scrap containing remains of explosives, etc.) along with their disposal during earthworks implementation.

Under no circumstances may unexploded ordnance or unexploded shells be lifted, dug up, buried, moved or thrown into fire or into places such as rivers, canals, oxbow lakes, ditches, drains etc. The Employer did not inspect the work site for the presence of unexploded ordnance.

The conditions concerning the procedure in case of finding unexploded ordnance and ensuring sapper supervision are specified in the following items in Annex 1 of the EMP);

- pos. 73-74 (Cat. 12 - Requirements for protection of human health and safety).
- pos. 76 (Cat. 13 - Requirements for the Contractor's personnel involved in the implementation of the EMP).

Fire

The Contractor is responsible for fire protection in the area of Task implementation. A detailed procedure in the event of a fire will be included in the Health and Safety (BIOZ) Plan prepared by the Contractor (see section 6.15). The requirement for the Contractor to develop a Health and Safety Plan and obtain approval from the Engineer for its content is specified in pos. 66 (cat. 12 - Requirements for protection of human health and safety) of the table of Annex 1 to the EMP);

Epidemiological threat

In the event of the state of epidemic emergency or state of epidemic during the execution of the works, the Contractor shall be obliged to comply with legal requirements, in particular with the Act of 5 December 2008 on the prevention and combating of infections and infectious diseases in humans (consolidated text: Journal of Laws of 2019, item 1239, as amended), with all obligations arising from the announcement of the state of epidemic or state of epidemic emergency, and with the relevant guidelines of the World Bank. The Contractor's activities should reduce the risk of spreading infection both with respect to the Contractor's personnel, the personnel of the Employer and the Engineer as well as the local community. Guidelines on how to act in case of state of epidemic emergency or state of epidemic are contained in pos. 96 (cat. 16 - Guidelines on how to act during the state of epidemic or epidemic emergency during works implementation) of Annex 1 to the EMP.

Notwithstanding the above, the Contractor in accordance with pos. 72 (cat. 12 - Requirements for the protection of human health and safety) will implement an awareness raising program on the spread of infectious diseases (e.g. COVID 19).

6.14. WASTE AND SEWAGE

The implementation of the Task will involve the generation of waste, therefore it is necessary to minimize its amount during the works and reduce their negative impact on the environment. The principle of minimizing the amount of waste generated should be observed. The generated waste should be properly segregated, and its successive collection should be ensured. Waste management should be carried out in accordance with the provisions of the Waste Act and the Waste Management Plan referred to in pos. 33 (cat. 07 - requirements for waste management) of Annex 1 to the EMP).

During the Task implementation, earth masses will constitute the main group of waste, formed during the construction of embankments and channels (in particular the new section of Channel No. 4 with a length of nearly 800 m). In total, it is expected that around 84500 m³ of excavated soil will need to be utilized. Spoil from dredging works almost exclusively related to the reconstruction of Channel 1, will constitute only a small part of the excavated earth masses. The method of spoil management will be determined in accordance with separate provisions in the field of waste management, in accordance with the results of laboratory tests determining the degree of spoil contamination. The Contractor shall draw up an Earth masses management plan with the dredging works plan (see section 6.15), taking into account the World Bank Environmental, Health, and Safety Guidelines Ports, Harbors, and Terminals.

Prior to the commencement of the works, the Contractor will survey the Task implementation area for the presence of illegal landfills.

In addition, the Contractor will prevent the emergence of illegal landfills in the area of Task implementation.

The mitigation measures regarding waste and sewage management are set out in particular in the following items in the table of Annex 1 to the EMP);

- pos. 33-41 (Cat. 07 - requirements for waste management);

6.15. REQUIREMENTS FOR THE IMPLEMENTATION OF ACTION PLANS DURING THE CONSTRUCTION PHASE

The Contractor of works on the basis of the specified mitigation actions specified in this EMP should prepare and then obtain Engineer's approval for the following Contractor's documents necessary to carry out the works. These documents will constitute elements of the Contractor's Environmental and Social Management Plan (C-ESMP).

- **Construction Site Organization Design**, which should include, i.a., such elements as:
 - Location of the construction site back-up facilities;
 - Development of site facilities;
 - securing the site facilities;
 - technological routes, including, obligatorily, the planned temporary occupations of the area;
 - environmental protection within the site facilities
- The Health and Safety (BIOZ) Plan should include, i.a., elements such as:
 - information on the potential risks which may be encountered during the execution of works, specifying the scale and types of hazards and the location and time of their possible occurrence.
 - information on designation and marking of the place of works execution, according to the type of hazard,
 - information on the method of conducting employee training before proceeding with particularly dangerous works,
 - determination of the method of storage and handling hazardous materials, products and substances in the works implementation area,
 - Indication of technical and organizational measures preventing hazards resulting from the execution of construction works in the zones posing threat to health and in their proximity, including measures ensuring safe and efficient transit, allowing rapid evacuation in case of fire, emergencies, other threats.
 - indication of the location where the documentation of works carried out and documents necessary for the proper operation of machinery and other technical devices are stored.

The BIOZ plan will be developed for the purposes of the Task implementation in accordance with the applicable law. When developing the BIOZ plan, the Contractor is required to put special emphasis on the safety of works implementation. When preparing the Health and Safety Plan, the specificity of the works in river beds should be taken into account, which is important, i.a. for establishing works implementation safety procedures and for equipping employees with appropriate personal protective equipment. The BIOZ plan will include information on how to solve problems related to the epidemiological threat, including COVID-19, taking into account the provisions indicated in pos. 96 (cat. 16 - GUIDELINES ON HOW TO ACT DURING THE STATE OF EPIDEMIC OR EPIDEMIC EMERGENCY DURING WORKS IMPLEMENTATION) in Annex 1 to the EMP.

- **Quality Assurance Plans** for individual categories of works and other types of Contractor's activities (depending on the needs and the Engineer's requirements), which should include – in view of the EMP conditions, among others:

- Organization of works execution
- Organization of transport in the construction area along with markings of the works,
- OHS and environmental protection,
- List of working teams,
- The scope of duties of the key personnel,
- Quality checks,
- Laboratory tests.

The Contractor will also develop:

- **Waste Management Plan**, which should include, i.a., elements such as:
 - the expected types and amounts of waste,
 - ways to prevent the negative impact of waste on the environment,
 - waste management including its collection, transport, recycling and disposal;
 - type of waste produced and the method of its storage with particular attention paid to hazardous waste.

- ***Earth masses management plan with the dredging works plan*** will contain, *in particular, information on:*
 - determining the scope of works related to the extraction of sediments from river beds,
 - the technology and method of planned sediments extraction from river beds,
 - the equipment involved in dredging works as well as in transport of spoil to the deposit / final management location,
 - description of the environmental impacts potentially related to the extraction of sludge and spoil management, taking into account the results of sludge quality testing and in particular the impact on ichthyofauna,
 - defining the method of dealing with excavated sludge in the construction site including the minimization of environmental impacts and taking into account the sediment quality tests results,
 - identification of areas which, for environmental reasons (e.g. sites of protected species, natural habitats) and due to other key environmental conditions related to the extraction of sediments, earthworks or earth masses storage e.g. increase in suspension concentration related to works in riverbed, erosion or surface runoffs, cannot be treated as temporary occupation locations for the purposes of dealing with excavated sediments and other earth masses, e.g. as reloading locations, etc.
 - identification and assessment (including using risk analysis methodologies) of spoil management methods,
 - location of the spoil deposit site and conditions of sludge management at the site of deposit (including issues of environmental protection and protection of human health and life),

- selection of measures to reduce the environmental impact (in particular in the scope of increased supply of suspension to waters) during dredging works,
- defining solutions limiting soil erosion and flowing of surface runoffs heavily polluted with suspended matter due to the earthworks (i.e. construction of embankments and earth mass management),
- parameters of the site of works together with the marking method,
- health and safety protection plan (BIOZ) for dredging works
- defining the methodology for sediment testing.
-

The Contractor shall develop an Earth masses management plan with a dredging works plan based in particular on the results of the tests of the quality of spoil to be extracted, following the guidelines of the World Bank EHS Environmental, Health, and Safety Guidelines Ports, Harbors, and Terminals¹

- **Flood protection plan for the duration of the works execution**, which should include – in view of the EMP conditions, i.a. such elements as:
 - monitoring of the hydrological and meteorological situation,
 - rules of work of the Contractor's team in the period of flood risk,
 - basic duties of key members of the Flood Protection Team,
 - list of function personnel in the period of flood risk,
 - list of the equipment and means of transport needed to carry out the rescue operations.
- Leakage procedure, which should include, inter alia, the elements concerning the procedure to be followed in the case of spillage of chemicals and petroleum derivatives, i.e.:
 - mode of equipping with appropriate materials in relation to potential hazards and substances,
 - alarm mode and mode of notifying the individual services,
 - procedure to limit spillage,
 - mode of dealing with sorbents.
- **ES Management Strategies and Implementation Plans** (management strategies and implementation plans for environmental, social, health and safety risks), which include, i.a. elements such as:
 - description of measures to be taken aimed at risk management,
 - description of the used materials, equipment, description of management processes, etc., to be implemented by the Contractor and its subcontractors to minimize the risk.

The Contractor is obliged to submit to the Engineer for approval, and then implement the Contractor's Environmental and Social Management Plan (C-ESMP), in accordance with the Contract Conditions, Sub-Clause 4.1 of Particular Conditions, including, among others the agreed ES Management Strategies and Implementation Plans as well as the Code of

¹https://www.ifc.org/wps/wcm/connect/ddfac751-6220-48e1-9f1b-465654445c18/20170201-FINAL_EHS+Guidelines+for+Ports+Harbors+and+Terminals.pdf?MOD=AJPERES&CVID=ID.CzO9

Conduct for the Contractor's Personnel (ES). The Environmental Management Plan (EMP/PZŚ) will constitute an obligatory part of the C-ESMP. The Contractor is not entitled to modify the provisions and conditions set out in the EMP/PZŚ. The Contractor reviews the C-ESMP plan periodically and updates it as required by the Contract to ensure that it includes measures appropriate to the Works. The updated C-ESMP shall be submitted to the Engineer for Review. The procedures for reviewing and updating the C-ESMP are set out under Sub-Clause 4.4.1 of Particular Conditions.

The Contractor, when developing the abovementioned documents, shall take into account the relevant World Bank operational policies regarding health, environmental protection and safety principles, including the EHS Guidelines. Before being implemented, these documents must be approved by the Engineer who then also monitors their proper implementation.

- **The ES Code of Conduct for the Contractor's Personnel** (Code of Conduct ensuring the implementation of measures to address environmental and social risks related to the performance of the Task, including the risk of sexual violence, sexual abuse and sexual harassment).

The Contractor shall submit the ES Code of Conduct with the bid, containing provisions specifying the obligations of the Contractor selected in a procurement contract award procedure, in particular those concerning environmental protection, social affairs, health and safety which result from the contract. The Code of conduct shall be developed in accordance with the template and signed on each page. Thus, it acknowledges the need to apply the requirements contained therein at each stage of the Contract execution.

The Code of Conduct is a part of the measures addressing the environmental and social risks related to the implementation of the Task, including the risks associated with sexual harassment and mobbing, as well as with gender-based discrimination. It applies to all Contractor's personnel, workers and other employees in the area of Task implementation. It also applies to the staff of each Subcontractor and any other personnel assisting the Contractor in the implementation of the Task.

The Contractor shall also conduct training on the rules and conditions of the EMP implementation for its managers, for the engineering and technical staff, as well as shall conduct an employee training in the field of Health and Safety, raising awareness in the area of sexual harassment and mobbing prevention.

The requirements to develop and obtain acceptance of the content of the above documents, to ensure compliance with the ES policy and the ES Code of Conduct, and to conduct training on the rules and conditions of the EMP, as well as to conduct the OSH training and training raising awareness in the area of sexual harassment and mobbing prevention, are indicated in particular in the table of Annex 1 to the EMP in pos.:

- pos. 33, 34 (Cat. 07 - requirements for waste management);
- pos. 54 (Cat. 10 - Requirements for preventing environmental pollution).
- pos. 66, 67 (Cat. 12 - Requirements for protection of human health and safety);
- pos. 86-95 (Cat. 15 - Particular requirements of the ES World Bank policies).

6.16. PARTICULAR REQUIREMENTS OF THE WORLD BANK ES POLICIES

During the Task implementation it is necessary to meet the requirements of the World Bank's ES (environmental, social, health and safety aspects) policies, which in general are determined by the national regulations regarding the environmental protection, occupational health and safety and the labor law. State institutions and bodies supervise their observance. Especially in terms of compliance with the provisions of occupational health and safety regulations and the labor law, the bodies of the state sanitary inspection and the state labor inspection are authorized to control the activities of entrepreneurs, including the activities at construction sites. Due to the high importance attached by the World Bank to the ES requirements, the conditions of contracts co-financed from the World Bank loans impose certain obligations on contractors to ensure the implementation of applicable regulations. Particular attention is paid i.a. to the following issues:

- Protection of juveniles engaged in the implementation of the Contract;
- Elimination of inappropriate forms of behaviour of persons employed under the Contract (including sexual harassment and mobbing),
- Ensuring safety and health protection of persons employed under the Contract, including ensuring the OHS services required by law,
- Ensuring proper social conditions and proper employment conditions for the staff employed under the Contract (including fair pay conditions).

The following is a list of issues in the form of requirements for the Contractor related to the WB's ES policies. It should be emphasized that the requirements and conditions in the scope of ES set out for the Contractor and its employees also apply to the Contractor's Subcontractors and their employees or their Subcontractors.

- The Contractor shall conduct training and implement an awareness raising program in the area of sexual harassment and mobbing prevention. These measures will be carried out throughout the entire duration of the Contract, including the Defect Notification Period, at least every other month. They will take the form of information, education and awareness raising campaigns.
- The Contractor shall immediately inform the Consultant of all reported and suspected cases of sexual harassment and mobbing.
- The Contractor shall inform all persons employed at the construction site about the possibility of submitting complaints about work and remuneration conditions, and provide an information leaflet containing the necessary information about reporting complaints and requests, in which it will ensure that the person reporting the problem shall face no repercussions. The content of the leaflet shall be agreed with the Consultant.
- The Contractor shall inform the Consultant of all accidents involving the employees and third parties. In the event of an accident, the Contractor will take all necessary actions to which it is obliged by the applicable law, including the Building Law and the Labor Code.
- The Contractor shall ensure an equal pay for the employees performing the same work regardless of their gender, sexual orientation or age, moreover, persons employed under

the Contract shall not be harassed or discriminated against their gender, sexual orientation or age.

- The Contractor, in accordance with the possibilities and conditions as well as the provisions of the Polish Labor Code, shall meet the living and social needs of its employees in the workplace.
- The Contractor is obliged to help its employees improve their professional qualifications.
- The Contractor may only employ such a juvenile employee who is at least 15 years old, has completed at least eight years of elementary school and has presented a medical certificate stating that work of a given type does not endanger his health. The Contractor will ensure that juveniles (persons under the age of 18) will not perform works forbidden for them, in particular works posing an accident hazard including i.a. construction and demolition works¹.
- The Contractor shall employ an expert in the field of OHS, who holds the qualifications and professional experience in accordance with the Polish Labor Law.

Accordingly, in the table of mitigation measures of Annex 1 to the EMP (pos. 86-95, cat. 15-Particular requirements of the ES World Bank policies), detailed conditions binding the Contractor are included, involving the Contractor's monitoring and reporting obligations during the Task implementation. However, it should be emphasized that the Contractor is obliged to apply all the provisions of the labor Code and comply with them and shall also comply with the ES Code of Conduct. The Contractor shall submit the ES Code of Conduct containing provisions specifying the Contractor's obligations, in particular in the field of environmental protection, social affairs, health and safety, in accordance with the template (attached to BD), after its signing (on each page) along with the Bid. Thus, the Contractor acknowledges the need to apply the requirements contained therein at each stage of the Contract execution. Because this Code is submitted as part of the Bid, it is not subject to the Engineer's assessment and modifications during the implementation of the Contract

6.17. PARTICULAR REQUIREMENTS OF THE WORLD BANK ES POLICIES

In accordance with the conditions contained in the environmental decision issued for the Task, the implementation of the investment does not require the implementation of environmental compensations related to the occurrence of significant negative impacts on Natura 2000 sites, nor does it require compensations at a national level.

¹ i.e. specified in the Regulation of the Council of Ministers of 24 August 2004 Concerning the List of Work Forbidden to Juveniles and Conditions of Engaging Them To Do Some Jobs (consolidated text: Journal of Laws of 2016, item 1509).

7. DESCRIPTION OF ENVIRONMENTAL MONITORING MEASURES

7.1. ENVIRONMENTAL MONITORING DURING THE WORKS EXECUTION PERIOD

Annex 2 of the EMP sets out a set of monitoring measures incumbent on the Task Contractor. These measures were developed on the basis of the conditions contained in applicable administrative decisions issued for the Task, supplemented with additional conditions established at the stage of preparation of the EMP.

Monitoring measures listed in Annex 2 to the EMP in pos. 1-96 cover monitoring of the implementation of mitigation measures listed in Annex 1 to the EMP. Monitoring measures specified in the Annex 2 to the EMP are assigned to individual groups of measures in the manner indicated in section 6.

Additionally, in pos. 97-99 the requirements for conducting environmental monitoring during the Task implementation are set out.

7.2. ENVIRONMENTAL MONITORING DURING THE OPERATING PERIOD

There is no need for environmental monitoring of the Task during the operating life. Implementation of mitigation measures ensures that the scale and intensity of the possible negative impacts are reduced only to the duration of the works execution.

8. PUBLIC CONSULTATIONS

8.1. PUBLIC CONSULTATIONS REGARDING THE FRAMEWORK PLAN FOR ENVIRONMENTAL AND SOCIAL MANAGEMENT FOR THE OVFMP (2015)

Draft document entitled Environmental and Social Management Framework Plan (ESMF) for the OVFMP Plan (including Component 1 covering this Task) was subject to the procedure of public consultations conducted in accordance with the OP 4.01 operational policy of the World Bank. The purpose of the consultations was to enable the public to become familiar with the content of this document and to provide the possibility to submit any comments, questions and conclusions to its content.

Documentation of the process of social consultations of the abovementioned document is available on the website of the Project Coordination Unit for the Odra - Vistula Flood Management Project.

8.2. PUBLIC CONSULTATIONS AT THE STAGE OF ENVIRONMENTAL PROCEDURES FOR THE TASK

The Task is a project that could potentially have a significant impact on the environment and for which the obligation to carry out an environmental impact assessment may be imposed. In the course of the proceedings, in view of the hard-to-predict effects of the Task's impact on the environment, in particular on the natural environment and surface waters, as well as due to the scale of the project, it was found that there is a justified need to carry out an assessment of the environmental impact of the Task based on a thoroughly prepared environmental impact report. By the decision of October 26, 2016, ref.no.: WZŚ.4233.1.2016.AN The Regional Director for Environmental Protection in Gorzów Wielkopolski imposed an obligation to carry out an environmental impact assessment and established a detailed scope of the environmental impact report. Information on the issue of the decision was entered in the publicly available data list under no. 1045/2016.

On November 14, 2016, the Environmental Impact Assessment Report for the project entitled "Flood protection of Krosno Odrzańskie" was submitted. Information on the report and its supplementation (consolidated text, December 2016) was entered in the publicly available list of data under numbers 1137/2016 and 9/2017.

In connection with the stated obligation to carry out an environmental impact assessment for the project, public participation in the proceedings was ensured.

Information on the application and on the possibility of submitting comments and motions at the headquarters of RDOŚ in Gorzów Wielkopolski within 21 days was made public by the announcement of January 2, 2017. Ref.no. WZŚ4233.1.2016.AN. It was posted on the bulletin board and in the Public Information Bulletin of the Regional Directorate for Environmental Protection in Gorzów Wielkopolski, as well as on the bulletin board in the City Hall in Krosno Odrzańskie and in the Dąbie Commune Office. The description of the procedure with public participation is included in the substantiation for the decision on environmental conditions issued after the environmental impact assessment had been completed (see Annex 4a).

According to the information contained in the substantiation of the decision on environmental conditions, no comments and no motions were submitted in the proceedings with public participation.

8.3. PUBLIC EMP CONSULTATIONS

Draft of the Environmental Management Plan (EMP) for the Contract *1B.8 - Flood protection of Krosno Odrzańskie* was subject to public consultations conducted in accordance with the requirements of the World Bank's operational policy (OP 4.01). The purpose of the consultations was to enable natural persons, institutions and all the interested parties to become familiar with the content of this document and to provide the possibility to submit any comments, questions and conclusions to its content. Due to the state of epidemic emergency, the formula for conducting public consultations on the draft EMP document is changed. There was no meeting open to all interested parties and the consultations were conducted in the form of a webinar.

After the draft EMP was completed, the document was forwarded to the World Bank in order to obtain approval for the commencement of the publicizing procedure. After obtaining the approval of the World Bank, the procedure of publicizing the draft EMP began. In order to ensure the widest possible access to information, due to the epidemic emergency in Poland, it was decided that the electronic version of the documentation would be published and made available to anyone interested in the period from 23 June 2020 to 14 July 2020 inclusive (i.e. 16 working days) on the following websites:

- of the State Water Holding Polish Waters, Regional Water Management Authority in Wrocław - (Fig. 1 and 2);
- of the OVFMP Project Coordination Unit (Fig. 3);
- of the City Hall in Krosno Odrzańskie - www.krosnoodrzańskie.pl (Fig. 4)

Information on the possibility of becoming acquainted with the content of the draft EMP and submitting motions and comments together with an indication of detailed contact details (e-mail address, telephone number, office hours) was also made public via:

- announcements in the local press (on June 23, 2020 in *Gazeta Lubuska* (Fig. 5) and June 25, 2020 in *Gazeta Tygodniowa* (Fig. 6)
- hanging posters in public places and locations open for general use in the city of Krosno Odrzańskie (Fig. 7).

The published announcement contained information on the changed formula for conducting public consultations (webinar) due to the state of epidemic emergency in Poland. The announcement also contained information about the date, time and website address where a direct link to the webinar with step-by-step instructions was shared.

Invitation for the webinar (Fig. 10) was sent by e-mail and by traditional mail to various institutions and organizations - in accordance with the distribution list:

- Minister of Marine Economy and Inland Navigation
- State Water Holding Polish Waters National Water Management Authority
- Office of Inland Navigation in Szczecin
- Lubuskie Voivode Lubuskie Voivodeship Office in Gorzów Wielkopolski

- Marshal of the Lubuskie Voivodeship Marshal's Office of the Lubuskie Voivodeship in Zielona Góra
 - Regional Director for Environmental Protection in Gorzów Wielkopolski
 - Deputy Regional Director for Environmental Protection in Gorzów Wielkopolski
 - Voivodeship Inspectorate for Environmental Protection in Zielona Góra
 - Voivodeship Inspectorate for Environmental Protection in Zielona Góra, Gorzów Wlkp. Branch
 - State District Sanitary Inspectorate in Gorzów Wielkopolski
 - Polish Anglers Association [PZW] Division in Gorzów Wielkopolski
 - District Headquarters of the State Fire Service in Krosno Odrzańskie
 - Regional Management of State Forests in Zielona Góra
 - District Sanitary and Epidemiological Station in Krosno Odrzańskie
 - Mayor of Krosno Odrzańskie
 - City Council in Krosno Odrzańskie
 - Chairman of the City Council in Krosno Odrzańskie
 - Starost of the Krosno Powiat
 - Krosno Powiat Council
 - Board of the Krosno Powiat
 - District Roads Administration in Krosno Odrzańskie
 - District Police Headquarters in Krosno Odrzańskie
 - Polish Anglers Association [PZW] Division in Zielona Góra
 - PZW [EN: Polish Anglers Association] Club No. 3 in Krosno Odrzańskie
 - General Directorate for National Roads and Motorways
 - Save the Rivers Coalition [Koalicja Ratujmy Rzeki]
 - Polish Society for the Protection of Birds
 - Greenpeace Poland
 - the Green Valley of the Odra and Warta Association [Stowarzyszenie Zielona Dolina Odry i Warty]
 - Polish Ecological Club West Pomeranian District
 - Polish Ecological Club Main Board
 - Alliance of Associations Polish Green Network
 - Ecological Association Eko-Unia
 - WWF [World Wide Fund for Nature] Poland
 - Naturalists' Club
 - Greenmind Foundation
 - Inland master Capt. Czesław Szarek, Association for the Development of Inland Navigation and Waterways "Council of Inland Masters"
 - Communal Association of Village Representatives in Krosno Odrzańskie
 - "Odra gaming" e-sport association
 - The "Młode Krosno" Association in Krosno Odrzańskie
- Army unit no. 5286

Consultation meeting

After the end of the time period of the EMP draft publicity (the electronic version of the documentation was available to all interested parties, from June 23, 2020 to July 14 2020 inclusive), an open webinar was organized for all interested parties. The webinar was organized on July 14, 2020. In accordance with the notification, the meeting began at 2:00 p.m.

For the purposes of the webinar, a multimedia presentation was prepared and information on the principles of developing and functioning of the EMP during the implementation of investments co-financed by the World Bank was presented together with detailed information on the EMP draft for the Contract 1B.8 Flood protection of Krosno Odrzańskie (fig. 11). The meeting was attended by: a representative of the District Starosty in Krosno Odrzańskie, representatives of the Project Implementation Office and the technical assistance Consultant.

Comments submitted during the publication period

In the course of the procedure of making the EMP draft public, no comments were submitted to its content.

Therefore, the process of public consultations was deemed completed - the Consultant began to prepare the Report on public consultations of the draft EMP for the Task 1B.8.

The screenshot shows a webpage from 'Wody Polskie' with the following content:

- Państwowe Gospodarstwo Wodne Wody Polskie** logo and navigation menu: O Wodach Polskich, Aktualności, Stop powodzi!, Nasze działania, Zamówienia publiczne, Media, Kontakt.
- Breadcrumbs: Wody Polskie / Aktualności / Obwieszczenie dotyczące zadania pod nazwą Zabezpieczenie przed powodzią miasta Krosno Odrzańskie
- Obwieszczenie dotyczące zadania pod nazwą Zabezpieczenie przed powodzią miasta Krosno Odrzańskie**
- Utworzono: 19 czerwca 2020
- Summary text: Państwowe Gospodarstwo Wodne Wody Polskie Regionalny Zarząd Gospodarki Wodnej we Wrocławiu (PGW Wody Polskie RZGW w Wrocławiu), Jednostka Realizująca Projekt Ochrony Przeciwpowodziowej w Dorzeczu Odry i Wisły (JRP) udostępniła zainteresowanym osobom i instytucjom PROJEKT PLANU ZARZĄDZANIA ŚRODOWISKIEM dla Kontraktu 1B.8 – Zabezpieczenie przed powodzią miasta Krosno Odrzańskie (nazywany dalej PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM) sporządzony w ramach Komponentu 1 – Ochrona przed powodzią Środkowej i Dolnej Odry, Podkomponent 1B – Ochrona przed powodzią na Środkowej i Dolnej Odrze.
- Text: Z uwagi na stan zagrożenia epidemicznego w Polsce i w trosce o państwa bezpieczeństwo zdrowotne zmianie ulega forma prowadzenia konsultacji publicznych projektu dokumentu PZŚ. Nie odbędzie się spotkanie otwarte dla wszystkich zainteresowanych lecz konsultacje przeprowadzone zostaną w formie elektronicznej przy wykorzystaniu dostępnych (bezpiecznych) kanałów komunikacji elektronicznej.
- Text: Każdy zainteresowany może:
- 1. Zapoznać się z PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM od dnia 23 czerwca 2020 r. do dnia 14 lipca 2020 r. włącznie (16 dni roboczych) poprzez strony internetowe:
 - Państwowego Gospodarstwa Wodnego Wody Polskie Regionalnego Zarządu Gospodarki Wodnej we Wrocławiu, pod adresem - www.wroclaw.wody.gov.pl;
 - Biuura Koordynacji Projektu Ochrony Przeciwpowodziowej Dorzecza Odry i Wisły, pod adresem - www.wodrapcu2019.odrapcu.pl;
 - Urzędu Miasta w Krośnie Odrzańskim - www.krosnoodrzaniskie.pl
- 2. Składać uwagi i wnioski odnośnie PROJEKTU PLANU ZARZĄDZANIA ŚRODOWISKIEM:
 - w formie pisemnej na adres Państwowego Gospodarstwa Wodnego Wody Polskie Regionalny Zarząd Gospodarki Wodnej we Wrocławiu, ul. Nowińska 14, 50-950 Wrocław z dopiskiem uwagi do Projektu PZŚ Kontrakt 1B.8 POFODW1;
 - w formie elektronicznej na adres e-mail: jrpwroclaw.opdow@wody.gov.pl;
 - telefonicznie każdego dnia roboczego trwania upublicznienia pod nr telefonu +48 607 798 912 w godzinach 15.00-16.00, w dniach od dnia 23 czerwca 2020 r. do dnia 14 lipca 2020r. włącznie. Instytucją właściwą do rozpatrzenia uwag i wniosków jest PGW Wody Polskie RZGW we Wrocławiu. Adres e-mail: jrpwroclaw.opdow@wody.gov.pl.

W 16 dniu roboczym udostępnienia dokumentu, tj. 14 lipca 2020 roku, o godz. 14.00-16.00 odbędzie się elektroniczne spotkanie konsultacyjne w formie webinarium, otwarte dla wszystkich zainteresowanych, na którym przedstawione zostaną informacje o PROJEKcie PLANU ZARZĄDZANIA ŚRODOWISKIEM, umożliwiające również zadawanie pytań i składanie wniosków.

Aby wziąć udział w ww. webinarium, należy wejść na stronę <https://wroclaw.wody.gov.pl/aktualnosci>, gdzie we wpisie poświęconym spotkaniu konsultacyjnemu projektu Planu Zarządzania Środowiskiem dla Zadania 1B.8 zamieszczony będzie bezpośredni link do webinarium. Zostanie ono przeprowadzone w oparciu o program Microsoft Teams. Link oraz instrukcja „Krok po kroku” zostaną umieszczone na ww. stronie co najmniej 10 dni przed planowanym elektronicznym spotkaniem konsultacyjnym. Naciskanie > webinarium zostanie udostępnione na stronie PGW Wody Polskie RZGW we Wrocławiu i na stronie

POLECANE ARTYKUŁY

Wody Polskie przygotowały wsparcie dla podmiotów gospodarczych

NASZE JEDNOSTKI

Fig. 1 Announcement on the PGW WP RZGW website in Wrocław (part 1)

dnia 23 czerwca 2020r. do dnia 14 lipca 2020r. włącznie) pod nr telefonu +48 607 798 912 w godzinach 15.00-16.00.
Obwieszczenie to zostało podane do wiadomości poprzez ogłoszenie w lokalnej prasie (Gazeta Tygodniowa, Gazeta Lubuska),

Environmental Management Plan

Contract 1B.8 - Flood protection of Krosno Odrzańskie

Obwieszczenie to zostało podane do wiadomości poprzez ogłoszenie w lokalnej prasie (Gazeta Tygodniowa, Gazeta Lubuska), wywieszenie na tablicy ogłoszeń Urzędu Miasta w Krośnie Odrzańskim, a także na stronach internetowych instytucji wskazanych powyżej oraz portalu www.krosnoodrzanskie.pl.

Załączniki:

Plik	Opis	Rozmiar	Utworzono	Ostatnia modyfikacja
Obwieszczenie PZS_1B.8.DOCX		59 kB	2020-06-23 11:19	2020-06-23 11:19
Obwieszczenie PZS_1B.8.pdf		469 kB	2020-06-23 11:19	2020-06-23 11:19
PZS_1B8.pdf		2059 kB	2020-06-23 11:19	2020-06-23 11:19
PZS_1B8_Zal_1.pdf		1400 kB	2020-06-23 11:18	2020-06-23 11:18
PZS_1B8_Zal_2.pdf		1958 kB	2020-06-23 11:18	2020-06-23 11:18
PZS_1B8_Zal_3.pdf		615 kB	2020-06-23 11:18	2020-06-23 11:18
PZS_1B8_Zal_4a_DUS.pdf		12925 kB	2020-06-23 11:17	2020-06-23 11:17
PZS_1B8_Zal_4b_PWP.pdf		2462 kB	2020-06-23 11:16	2020-06-23 11:16
PZS_1B8_Zal_4c_Opinia_LWKZ.pdf		1304 kB	2020-06-23 11:16	2020-06-23 11:16
PZS_1B8_Zal_4d_Decyzja_LWKZ.pdf		4774 kB	2020-06-23 11:15	2020-06-23 11:15
PZS_1B8_Zal_5_Mapa na tle obszarów chronionych.jpeg		3488 kB	2020-06-23 11:15	2020-06-23 11:15
PZS_1B8_Zal_6_Mapa z lokalizacją Zadania na tle pozostałych obszarów chronionych.jpeg		938 kB	2020-06-23 11:15	2020-06-23 11:15
PZS_1B8_Zal_7_Mapa z lokalizacją głównych elementów zadania.pdf		2929 kB	2020-06-23 11:14	2020-06-23 11:14

POLECAMY



Fig. 2 Announcement on the PGW WP RZGW website in Wrocław (part2)

OGŁOSZENIA

2020-06-23

OBWIESZCZENIE

podaje się do publicznej wiadomości, co następuje:

Z uwagi na stan zagrożenia epidemicznego w Polsce i w trosce o Państwo bezpieczeństwo zdrowotne zmienia się formula prowadzenia konsultacji publicznych projektu dokumentu PZS. Nie odbędą się spotkania otwarte dla wszystkich zainteresowanych lecz konsultacje przeprowadzone zostaną w formie elektronicznej przy wykorzystaniu dostępnych (bezpiecznych) kanałów komunikacji elektronicznej.

Państwowe Gospodarstwo Wodne Wody Polskie Regionalny Zarząd Gospodarki Wodnej we Wrocławiu (PGW Wody Polskie RZGW we Wrocławiu), Jednostka Realizująca Projekt Ochrony Przeciwpowodziowej w Dorzeczu Odry i Wisły (JRP) udostępniła zainteresowanym osobom i instytucjom **PROJEKT PLANU ZARZĄDZANIA ŚRODOWISKIEM** dla Komponentu 1B.8 – Zabezpieczenie przed powodzią miasta Krosno Odrzańskie (nazwany dalej **PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM**) sporządzony w ramach Komponentu 1 – Ochrona przed powodzią Środkowej i Dolnej Odry, Podkomponent 1B – Ochrona przed powodzią na Środkowej i Dolnej Odry.

Każdy zainteresowany może:

A. Zapoznać się z **PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM** od dnia 23 czerwca 2020 r. do dnia 14 lipca 2020 r. włącznie (16 dni roboczych) poprzez strony internetowe:

- Państwowego Gospodarstwa Wodnego Wody Polskie Regionalnego Zarządu Gospodarki Wodnej we Wrocławiu,
- Urzędu Miasta w Krośnie Odrzańskim,
- Biura Koordynacji Projektu Ochrony Przeciwpowodziowej Dorzecza Odry i Wisły.

B. Składać uwagi i wnioski odnośnie **PROJEKTU PLANU ZARZĄDZANIA ŚRODOWISKIEM**:

- w formie pisemnej na adres Państwowego Gospodarstwa Wodnego Wody Polskie Regionalny Zarząd Gospodarki Wodnej we Wrocławiu, ul. Norwida 94, 50-950 Wrocław z dopiskiem „uwagi do Projektu PZS Kontrakt 1B.8 POPODOW”;
- w formie elektronicznej na adres e-mail: jrpwroclaw.opdow@wody.gov.pl,
- telefonicznie każdego dnia roboczego trwania upublicznienia pod nr telefonu +48 607 798 912 w godzinach 15.00-16.00.

w dniach od dnia 23 czerwca 2020 r. do dnia 14 lipca 2020 r. włącznie. Instytucja właściwą do rozpatrzenia uwag i wniosków jest PGW Wody Polskie RZGW we Wrocławiu. Adres e-mail: jrpwroclaw.opdow@wody.gov.pl.

W 16 dniu roboczym udostępnienia dokumentu, tj. w dniu 14 lipca 2020 r., o godz. 14.00-16.00 odbędą się elektroniczne spotkania konsultacyjne w formie webinarium, otwarte dla wszystkich zainteresowanych, na którym przedstawione zostaną informacje o **PROJEKcie PLANU ZARZĄDZANIA ŚRODOWISKIEM**, umozliwione zostanie również zadawanie pytań i składanie wniosków.

Aby wziąć udział w ww. webinarium, należy wejść na stronę <https://wroclaw.wody.gov.pl/aktualnosci>, gdzie we wpisie poświęconym spotkaniu konsultacyjnemu projektu Planu Zarządzania Środowiskiem dla Zadania 1B.8 zamieszczony będzie bezpośredni link do webinarium. Zostanie ono przeprowadzone w oparciu o program Microsoft Teams. Link oraz instrukcja „Krok po kroku” zostaną umieszczone na ww. stronie co najmniej 10 dni przed planowanym elektronicznym spotkaniem konsultacyjnym. Nagranie z webinarium zostanie udostępnione na stronie PGW Wody Polskie RZGW we Wrocławiu i na stronie Biura Koordynacji Projektu.

Pytania oraz wnioski do projektu PZS można również składać telefonicznie każdego dnia roboczego trwania upublicznienia (od dnia 23 czerwca 2020r. do dnia 14 lipca 2020r. włącznie) pod nr telefonu +48 607 798 912 w godzinach 15.00-16.00.

Obwieszczenie to zostało podane do wiadomości poprzez ogłoszenie w lokalnej prasie (Gazeta Tygodniowa, Gazeta Lubuska), wywieszenie na tablicy ogłoszeń Urzędu Miasta w Krośnie Odrzańskim, a także na stronach internetowych instytucji wskazanych powyżej oraz portalu www.krosnoodrzanskie.pl.

[Dokumenty do pobrania](#)

Fig. 3 The content of the draft document on the website of the OVFP PCU



DLA TURYSTY

DLA PRZEDSIĘBIORCY

DLA MIESZKAŃCA

Konsultacje projektu Planu Zarządzania Środowiskiem – Zabezpieczenie przed powodzią miasta Krosno Odrzańskie

Opublikowano: 23 czerwca 2020

Lubię to! Tweetnij

Informujemy, że Państwowe Gospodarstwo Wodne Wody Polskie Regionalny Zarząd Gospodarki Wodnej we Wrocławiu (PGW Wody Polskie RZGW we Wrocławiu), Jednostka Realizująca Projekt Ochrony Przeciwpowodziowej w Dorzeczu Odry i Wisty (JRP) udostępniła zainteresowanym osobom i instytucjom PROJEKT PLANU ZARZĄDZANIA ŚRODOWISKIEM dla Kontraktu 1B.8 – Zabezpieczenie przed powodzią miasta Krosno Odrzańskie (nazywany dalej PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM) sporządzony w ramach Komponentu 1 – Ochrona przed powodzią Środkowej i Dolnej Odry, Podkomponent 1B – Ochrona przed powodzią na Środkowej i Dolnej Odry.

Z uwagi na stan zagrożenia epidemicznego w Polsce i w trosce o Państwa bezpieczeństwo zdrowotne zmianie ulega forma prowadzenia konsultacji publicznych projektu dokumentu PZŚ. Nie odbędzie się spotkanie otwarte dla wszystkich zainteresowanych lecz konsultacje przeprowadzone zostaną w formie elektronicznej przy wykorzystaniu dostępnych (bezpiecznych) kanałów komunikacji elektronicznej.

Obwieszczenie

Załączniki

BURMISTRZ
Marek Cebula

godziny przyjęć Interessantów:
Poniedziałek: godz. 15:00 - 17:00

Facebook



KROŚNIEŃSKIE WYDARZENIA



Fig. 4 Announcement on the website of the City Hall in Krosno Odrzańskie

OBWIESZCZENIE

podaje się do publicznej wiadomości, co następuje:

Z uwagi na stan zagrożenia epidemicznego w Polsce i w trosce o Państwa bezpieczeństwo zdrowotne zmianie ulega forma prowadzenia konsultacji publicznych projektu dokumentu PZŚ. Nie odbędzie się spotkanie otwarte dla wszystkich zainteresowanych lecz konsultacje przeprowadzone zostaną w formie elektronicznej przy wykorzystaniu dostępnych (bezpiecznych) kanałów komunikacji elektronicznej. Państwowe Gospodarstwo Wodne Wody Polskie Regionalny Zarząd Gospodarki Wodnej we Wrocławiu (PGW Wody Polskie RZGW we Wrocławiu), Jednostka Realizująca Projekt Ochrony Przeciwpowodziowej w Dorzeczu Odry i Wisty (JRP) udostępniła zainteresowanym osobom i instytucjom

PROJEKT PLANU ZARZĄDZANIA ŚRODOWISKIEM dla Kontraktu 1B.8 – Zabezpieczenie przed powodzią miasta Krosno Odrzańskie (nazywany dalej PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM) sporządzony w ramach Komponentu 1 – Ochrona przed powodzią Środkowej i Dolnej Odry, Podkomponent 1B – Ochrona przed powodzią na Środkowej i Dolnej Odry.

Każdy zainteresowany może:

A) zapoznać się z PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM od dnia 23 czerwca 2020 r. do dnia 14 lipca 2020 r. włącznie (16 dni roboczych) poprzez strony internetowe: Państwowego Gospodarstwa Wodnego Wody Polskie Regionalny Zarząd Gospodarki Wodnej we Wrocławiu, pod adresem – www.wroclaw.wody.gov.pl; Biura Koordynacji Projektu Ochrony Przeciwpowodziowej Dorzecza Odry i Wisty, pod adresem – www.odrapcu2019.odrapcu.pl; Urzędu Miasta w Krośnie Odrzańskim – www.krosnoodrzańskie.pl.

B) składać uwagi i wnioski odnośnie PROJEKTU PLANU ZARZĄDZANIA ŚRODOWISKIEM: w formie pisemnej na adres Państwowego Gospodarstwa Wodnego Wody Polskie Regionalny Zarząd Gospodarki Wodnej we Wrocławiu, ul. Norwida 34, 50-950 Wrocław z dopiskiem „uwagi do Projektu PZŚ Kontrakt 1B.8 POPDOW”; w formie elektronicznej na adres e-mail: jrpwroclaw.opdow@wody.gov.pl.

telefonicznie każdego dnia roboczego trwania upublicznienia pod nr telefonu +48 607 798 912 w godzinach 15.00-16.00.

w dniach od dnia 23 czerwca 2020 r. do dnia 14 lipca 2020r. włącznie. Instytucją właściwą do rozpatrzenia uwag i wniosków jest PGW Wody Polskie RZGW we Wrocławiu. Adres e-mail: jrpwroclaw.opdow@wody.gov.pl. W 16 dniu roboczym udostępnienia dokumentu, tj. w dniu 14 lipca 2020 r., o godz. 14.00-16.00 odbędzie się elektroniczne spotkanie konsultacyjne w formie webinarium, otwarte dla wszystkich zainteresowanych, na którym przedstawione zostaną informacje o PROJEKcie PLANU ZARZĄDZANIA ŚRODOWISKIEM, umożliwiające zostanie również zadawanie pytań i składanie wniosków.

Aby wziąć udział w ww. webinarium, należy wejść na stronę <https://wroclaw.wody.gov.pl/aktualnosci>, gdzie we wpisie poświęconym spotkaniu konsultacyjnemu projektu Planu Zarządzania Środowiskiem dla Zadania 1B.8 zamieszczony będzie bezpośredni link do webinarium. Zostanie ono

przeprowadzone w oparciu o program Microsoft Teams. Link oraz instrukcja „Krok po kroku” zostaną umieszczone na ww. stronie co najmniej 10 dni przed planowanym elektronicznym spotkaniem konsultacyjnym. Nagranie z webinarium zostanie udostępnione na stronie PGW Wody Polskie RZGW we Wrocławiu i na stronie Biura Koordynacji Projektu.

Pytania oraz wnioski do projektu PZŚ można również składać telefonicznie każdego dnia roboczego trwania upublicznienia (od dnia 23 czerwca 2020r. do dnia 14 lipca 2020r. włącznie) pod nr telefonu +48 607 798 912 w godzinach 15.00-16.00.

Obwieszczenie to zostało podane do wiadomości poprzez ogłoszenie w lokalnej prasie (Gazeta Tygodniowa, Gazeta Lubuska), wywieszenie na tablicy ogłoszeń Urzędu Miasta w Krośnie Odrzańskim, a także na stronach internetowych instytucji wskazanych powyżej oraz portalu www.krosnoodrzańskie.pl.



Fig. 5 Announcement in Gazeta Tygodniowa of June 25, 2020.

OGŁOSZENIE 009745357

OBWIESZCZENIE

podaje się do publicznej wiadomości, co następuje:

Z uwagi na stan zagrożenia epidemicznego w Polsce i w trosce o Państwa bezpieczeństwo zdrowotne zmianie ulega formuła prowadzenia konsultacji publicznych projektu dokumentu PZŚ. Nie odbędzie się spotkanie otwarte dla wszystkich zainteresowanych lecz konsultacje przeprowadzone zostaną w formie elektronicznej przy wykorzystaniu dostępnych (bezpiecznych) kanałów komunikacji elektronicznej.

Państwowe Gospodarstwo Wodne Wody Polskie Regionalny Zarząd Gospodarki Wodnej we Wrocławiu (PGW Wody Polskie RZGW we Wrocławiu), Jednostka Realizująca Projekt Ochrony Przeciwpowodziowej Dorzecza Odry i Wisły (JRP) udostępniła zainteresowanym osobom i instytucjom **PROJEKT PLANU ZARZĄDZANIA ŚRODOWISKIEM** dla Kontraktu 1B.8 – Zabezpieczenie przed powodzią miasta Krosno Odrzańskie (nazywany dalej PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM) sporządzony w ramach Komponentu 1 – Ochrona przed powodzią Środkowej i Dolnej Odry, Podkomponent 1B – Ochrona przed powodzią na Środkowej i Dolnej Odrze.

Każdy zainteresowany może:

A) zapoznać się z PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM od dnia 23 czerwca 2020 r. do dnia 14 lipca 2020 r. włącznie (16 dni roboczych) poprzez strony internetowe:

- Państwowego Gospodarstwa Wodnego Wody Polskie Regionalnego Zarządu Gospodarki Wodnej we Wrocławiu, pod adresem – www.wroclaw.wody.gov.pl;
- Biura Koordynacji Projektu Ochrony Przeciwpowodziowej Dorzecza Odry i Wisły, pod adresem – www.odrapcu2019.odrapcu.pl;
- Urzędu Miasta w Krośnie Odrzańskim – www.krosnoodrzańskie.pl

B) składać uwagi i wnioski odnośnie PROJEKTU PLANU ZARZĄDZANIA ŚRODOWISKIEM:

- w formie pisemnej na adres Państwowego Gospodarstwa Wodnego Wody Polskie Regionalny Zarząd Gospodarki Wodnej we Wrocławiu, ul. Norwida 34, 50-950 Wrocław z dopiskiem „uwagi do Projektu PZŚ Kontrakt 1B.8 POPDOW”;
- w formie elektronicznej na adres e-mail: jrpwroclaw.opdow@wody.gov.pl;
- telefonicznie każdego dnia roboczego trwania upublicznienia pod nr telefonu +48 607 798 912 w godzinach 15.00-16.00,

w dniach od dnia 23 czerwca 2020 r. do dnia 14 lipca 2020r. włącznie. Instytucją właściwą do rozpatrzenia uwag i wniosków jest PGW Wody Polskie RZGW we Wrocławiu. Adres e-mail: jrpwroclaw.opdow@wody.gov.pl.

W 16 dni roboczym udostępnienia dokumentu, tj. w dniu 14 lipca 2020 r., o godz. 14.00-16.00 odbędzie się elektroniczne spotkanie konsultacyjne w formie webinarium, otwarte dla wszystkich zainteresowanych, na którym przedstawione zostaną informacje o PROJEKCIE PLANU ZARZĄDZANIA ŚRODOWISKIEM, umożliwione zostanie również zadawanie pytań i składanie wniosków.

Aby wziąć udział w ww. webinarium, należy wejść na stronę <https://wroclaw.wody.gov.pl/aktualnosci>, gdzie we wpisie poświęconym spotkaniu konsultacyjnemu projektu Planu Zarządzania Środowiskiem dla Zadania 1B.8 zamieszczony będzie bezpośredni link do webinarium. Zostanie ono przeprowadzone w oparciu o program Microsoft Teams. Link oraz instrukcja „Krok po kroku” zostaną umieszczone na ww. stronie co najmniej 10 dni przed planowanym elektronicznym spotkaniem konsultacyjnym. Nagranie z webinarium zostanie udostępnione na stronie PGW Wody Polskie RZGW we Wrocławiu i na stronie Biura Koordynacji Projektu.

Pytania oraz wnioski do projektu PZŚ można również składać telefonicznie każdego dnia roboczego trwania upublicznienia (od dnia 23 czerwca 2020 r. do dnia 14 lipca 2020 r. włącznie) pod nr telefonu +48 607 798 912 w godzinach 15.00-16.00.

Obwieszczenie to zostało podane do wiadomości poprzez ogłoszenie w lokalnej prasie (Gazeta Tygodniowa, Gazeta Lubuska), wywieszenie na tablicy ogłoszeń Urzędu Miasta w Krośnie Odrzańskim, a także na stronach internetowych instytucji wskazanych powyżej oraz portalu www.krosnoodrzańskie.pl.




Fig. 6 Announcement in Gazeta Lubuska of June 23, 2020.



Fig. 7 Announcement and poster with information about public consultations



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**Zadanie 1B.8 – Zabezpieczenie przed
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14 lipca br., w godz. 14.00-16.00

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Fig. 10 Invitation to the webinar sent to the representatives of local governmental organizations and NGOs

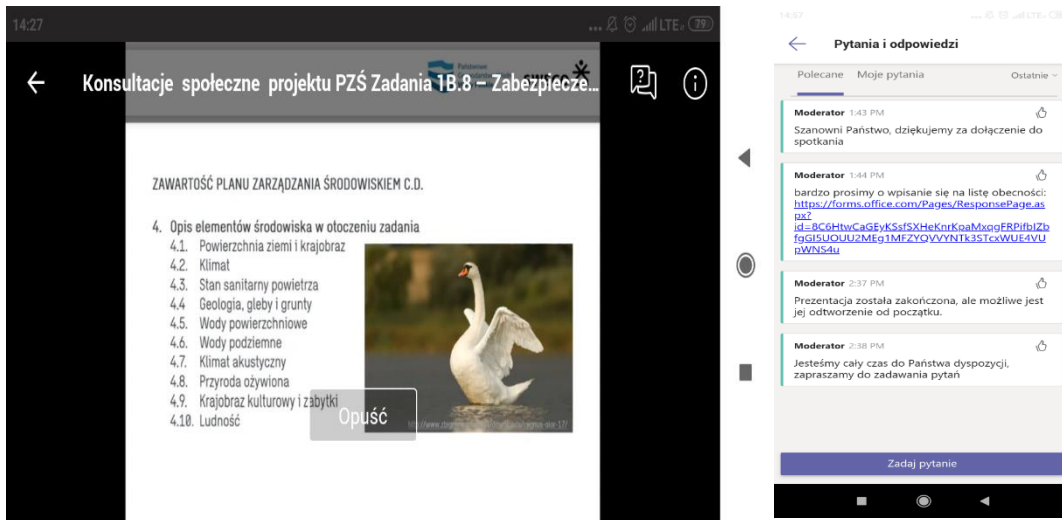


Fig. 11 Presentation and chat pictures via mobile device

8.4. ORGANIZATIONAL STRUCTURE OF THE EMP IMPLEMENTATION

The subject Task of this EMP is implemented as part of the Odra – Vistula Flood Management Project, co-financed by the World Bank, the Council of Europe Development Bank (CEB), the Cohesion Fund and the state budget. In connection with the above, the structure of supervision over the implementation of the EMP must comply with both Polish law and the requirements of the World Bank.

8.5. PROJECT COORDINATION UNIT OF THE ODRA – VISTULA FLOOD MANAGEMENT PROJECT (OVFMP PCU)

The Project Coordination Unit (PCU) - an organizational unit of the National Water Management Authority (KZGW), which is as an organizational unit of the State Water Holding Polish Waters - is responsible for the overall coordination of the implementation of the individual EMPs under the Project.

The tasks of the OVFMP PCU include:

- Managing the tasks of the Project Implementation Units (PIU) and Project Implementation Offices (PIO) in the scope of implementation of tasks under the Projects,
- Technical assistance and support for PIU and PIO in the implementation of tasks under the Projects, including the application of World Bank procedures regarding procurements, environmental protection and social affairs,
- Preparation of annual work programs under Projects and evaluation of their progress,
- Supervising works under Projects and evaluation of their progress,
- Ongoing control and monitoring of financial resources allocated for the implementation of Projects and participation in managing the financial resources of Projects,
- Reporting, including the development and submission of quarterly reports on the implementation of Projects to the World Bank, CEB and the Steering Committee.

8.6. PROJECT IMPLEMENTATION UNIT (PIU) AND PROJECT IMPLEMENTATION OFFICE (PIO)

The entity directly responsible for the EMP execution and monitoring the progress of its implementation shall be the Project Implementation Unit (PIU), i.e. the State Water Holding Polish Waters, Regional Water Management Authority in Wrocław (PGW WP RZGW).

In connection with the implementation of the OVFMP Project, the Project Implementation Office (PIO) was separated within the structure of the PIU, constituting a separate organisational unit and supervised by the Chairman of the State Water Holding Polish Waters. Such a structure is transparent and has a very high decision-making level, which increases the efficiency of the Project implementation. The positions of environmental, technical, public procurement, legal, financial, property and resettlement, and international cooperation experts got separated within the organizational structure. As part of the supervision over the implementation of the EMP, the PIO performs the following tasks:

- monitoring the progress of the EMP implementation;
- financial management and accounting;
- developing the necessary reports for monitoring the implementation of the EMP and coordinating its implementation by all departments involved in the implementation of the EMP;
- The scope of responsibilities of the PIO employees related to the supervision of the implementation of the EMP is as follows:
- managing, coordinating and supervising the implementation of the EMP by the Consultant and the Contractor;
- direct supervision of the proper implementation of the Task;
- cooperation with the PCU;
- administrative and legal supervision of the implementation of the EMP;
- verification of reports on the implementation of the EMP prepared by the Consultant and the Contractor;
- exercising financial supervision over the implementation of the EMP;
- supervision of the correctness of the application of formal procedures within the EMP implementation, resulting, inter alia, from the Contract conditions, *the Building Law, Environmental Protection Law* and other relevant administrative decisions and legal acts.

The following experts will be part of the team supervising the implementation of the EMP on the part of PIU:

- Head specialist in the environmental and real estate team
- Head specialist
- Senior specialists

8.7. CONSULTANT/ENGINEER

The role of the Consultant/ Engineer is to support the PIU (State Water Holding Polish Waters, Regional Water Management Board in Wrocław) in the effective implementation of the entire investment process - from the preparation of the project to its settlement.

The Consultant/Engineer was selected using the QCBS (Selection based on quality and price) method, in accordance with the *"Guidelines for Selection and Employment of Consultants by World Bank Borrowers"*.

In accordance with the planned structure of the Engineer - Technical Support Consultant team, at the stage of works implementation supervision over the proper performance of works and over the observance and implementation of the provisions of the EMP will be performed by the Engineer Team (supervision inspectors in cooperation with the environmental team coordinated by the Key Environmental Expert).

In accordance with the scope of activities specified in the Contract for the services of the Technical Support Consultant, the Engineer - Consultant will be required to ensure the appropriate composition of the team so that it can properly supervise the implementation of the EMP by, inter alia:

- monitoring of the EMP implemented by the Contractor;
- monitoring the Contractor's activities;
- checking the quality of construction works carried out by the Contractor and of the incorporated construction products, in particular preventing the use of defective construction products and products not approved for use in construction;
- representing the PGW WP RZGW in Wrocław at the construction site by controlling the compliance of the construction execution with the design, with the IPIP, environmental protection regulations and technical knowledge principles;
- supervising all issues related to the environmental protection by experienced experts in the field and other Engineer's personnel members;
- constant monitoring of the correctness of implementation of the measures aimed at mitigating the negative environmental impacts;
- conducting additional research, if necessary to verify the Contractor's reports;
- identifying the problems resulting from the adverse impact of the works implementation on the environment and presenting proposals for solutions;
- checking and acceptance of covered up or concealed construction works, participating in tests and technical acceptance of installations and technical devices as well as preparing and participating in the acceptance of completed structures and commissioning them;
- confirmation of the works carried out and of the removal of defects, and, at the Investor's request, controlling construction settlements.

The following persons will be part of the team supervising compliance with the EMP and its implementation on the part of the Consultant/Engineer:

- EMP Supervision inspector – non-key expert
- Environmental management expert - key expert

Social issues will be monitored by the Consultant/ Engineer at the stage of works implementation by the Consultant's real estate team, which will be coordinated by:

- Real estate specialist - key expert

8.8. CONTRACTOR

For the purpose of performing construction works, a Contractor will be appointed who will also be responsible for the EMP implementation. The Contractor's obligations in this respect include:

- executing the construction works based on the principles defined in the EMP, in the contract conditions and in design documentation, in accordance with applicable legal provisions and requirements of administrative decisions issued for the Task;
- carrying out the Engineer's recommendations (including the recommendations of environmental supervision experts and the Investor's supervision) concerning the implementation of EMP;
- ensuring that before the commencement of works the following are developed: the Health and Safety (BIOZ) Plan, the Waste Management Plan, the construction site flood protection plan for the duration of the works, the spill procedure and other documents specified in the EMP and contract conditions as elements of the Contractor's Environmental and Social Management Plan (C-ESMP).
- submitting the signed ES Code of Conduct together with the offer (thus the Contractor acknowledges the need to apply the requirements contained therein at each stage of the Contract implementation);
- submitting the ES Code of Conduct and the ESHS Management Strategy and Implementation Plans described in the bidding documentation, developed at the bid submission stage for the Contract Engineer's approval and verification of these documents as a result of the periodic instructions of the Contract Engineer;
- keeping the construction site documentation;
- preparation of monthly reports and inspection reports;
- preparation of reports on environmental protection;
- applying to the Investor for changes in the design solutions if it is justified by the need to increase the security of construction works or improve the construction process in the scope of the EMP implementation.

The following persons will be part of the team supervising compliance with the EMP and its implementation on the part of the Contractor:

- Environmental Expert Environment (the EMP Coordinator) - key expert
- Social Expert - key expert
- Health and Safety Expert - key expert

9. SCHEDULE FOR THE EMP IMPLEMENTATION AND REPORTING PROCEDURES

The EMP implementation enables the parties involved in the preparation, implementation and supervision of the Task to:

- identify various environmental aspects which may have a significant impact on the condition of the environment, and which may have economic effects, so that they can be controlled, corrected, reduced;
- correct the adverse consequences of the works carried out during their implementation for the benefit of the environment and financial results;
- define the objectives and tasks carried out under the adopted environmental policy, covered by the EMP, which require expenditures and bring measurable effects;
- identify and eliminate the potential threats and breakdowns, prevent and remove the potentially resulting environmental effects which may cause losses disproportionate to the costs of preventive measures;
- use natural resources rationally, with minimal environmental losses and optimal cost generation.

In addition, the implementation of the recommendations and measures arising from the EMP may reduce or even eliminate the risks related to the Contract, in particular:

- the risk of skipping environmental protection issues during the implementation of the Task by the Contractor;
- the risk of escalating protests of the local community resulting from the Contractor's non-compliance with the technologies for conducting works and with the environmental procedures approved by the Engineer;
- the risk of additional environmental penalties;
- the risk of additional losses in the environment.

Taking into account the importance of issues regarding environmental and social conditions, the following procedures for the implementation of the EMP are envisaged:

- before selecting a Contractor, the Employer shall submit a draft of this EMP to the World Bank for opinion;
- the EMP will then be subject to public consultations;
- after conducting public consultations (and supplementing the document with their results), the EMP will be supplemented and the final version will be submitted for the World Bank's approval;
- after the approval of the EMP by the World Bank, understood as no-objection, the final document will be attached to the bidding documentation for the selection of the Contractor;
- all Contractor's activities will be reported at regular intervals (monthly), in Polish and if necessary in English, on paper and in an electronic format, in the scope of the obligations arising from the EMP and other contractual documents. These reports will be subject to approval by the Engineer and the Employer.

Environmental monitoring in the scope of the impact of the task on the environment consists, among other things, in:

1. Control of the execution of construction works related to the implementation of the Task under the supervision of a Contractor's environmental supervision appointed for the Contract implementation period.
2. The Contractor's environmental supervision team carries out activities including.:
 - review and on-going control of the area covered by the Works prior to their commencement and inspections during the execution of the Works, together with preparation of appropriate reports, constituting documentation of the proper performance of environmental supervision and, at the same time, informing about the proper implementation of mitigation measures,
 - formulating and submitting to the Engineer conclusions regarding the need to take mitigation measures (including their implementation) necessary to mitigate the potential adverse effects of the Task on natural habitats and species of fauna and flora of interest to the Community¹ and subject to legal protection (species protection), unforeseeable and/or impossible to reveal at the stage of determining the conditions of the Task implementation. The measures can only be implemented after the Engineer's approval,
 - obtaining, if necessary, the permits to derogate from the prohibitions of species protection of plants, fungi or animals in accordance with the rules and procedure laid down in the Environmental Protection Act,
 - reporting in the form of periodic reports.
3. The Contractor will appoint for the environmental supervision team experts in the following fields: ornithology, teriology, herpetology, botany/phytosociology and ichthyology. The abovementioned specialists must have a documented experience in this field and hold a degree in biology or related fields. Periodic reports keeping the construction submitted.

At the stage of the works implementation, it is planned that the Contractor will prepare collective reports on environmental monitoring, confirmed by specialists of the Contractor's environmental supervision team, approved by the environmental supervision of the Engineer. The detailed scope of the report will be determined by the Engineer in consultation with the Employer (commencement report, periodical - monthly, quarterly, ad-hoc and closing reports), the Engineer will also determine the dates of their execution.

The Contractor's environmental supervision team shall also prepare periodic reports, submitted to the relevant environmental protection authorities, in writing, in accordance with the requirements of the administrative decisions issued for the Task implementation by these authorities (in particular the species decisions). These reports (in advance, two weeks before the date of submission to the authority) shall be submitted to the Engineer for approval.

The Project reporting system will be based on monthly reports submitted by the Contractors to the PIU via the Engineer and on the Engineer's monthly reports. As a part of the monthly reports

¹ determined in accordance with the Regulation of the Minister of the Environment of 13 April 2010 on natural habitats and species of Community interest, as well as criteria for the selection of areas eligible for recognition or designation as Natura 2000 sites (consolidated text Journal of Laws of 2014 item 1713)

or as a separate document, the monthly reports on the implementation of the EMP (Contractor's and Engineer's) will also be prepared. Collective quarterly reports will also be prepared on this basis.

The PIU shall submit quarterly and monthly reports to the PCU on the part concerning the tasks performed by it. The reports will contain the required set of information and descriptions enabling the PCU to prepare a quarterly report on the Project. In addition, especially in the event of any issues with the implementation of the Task, the PCU will expect the PIU to submit statements and data, including more detailed information and explanations, on a monthly basis.

The following reporting procedures have been established:

1) Reporting:

- a) reports (monthly, quarterly, ad-hoc, final) prepared by the Contractor and/or Engineer;
- b) review of the report by the Engineer;
- c) submission of report to the Employer (for information purposes)
- d) submission of report to RDOŚ and/or GDOŚ (only in the scope arising from administration decisions issued during execution, i.e. when reporting obligations are imposed in the decisions);
- e) submission of the PIU quarterly report to PCU;
- f) submission of the final EMP implementation report prepared by the Engineer (after verification carried out by PIU and PCU the report will be submitted to the World Bank not later than three months after completion of works).

2) Archiving:

- a) Contractor: 1 copy of each report in an electronic version for 5 years from the date of termination of the Contract,
- b) Engineer 1 copy of each report in an electronic version for 5 years from the date of termination of the Contract,
- c) Employer: 1 copy of each report in an electronic version for 5 years from the date of termination of the Contract,

3) Evaluation - ongoing assessment of the results of the implementation of the planned measures arising from the EMP. Ongoing analysis of the documentation (Contractor's Reports) by the Engineer. Providing the Employer with reliable information on the construction process, with particular emphasis on the implementation of measures limiting the negative impact on the environment and on the recommendations resulting from environmental decisions.

The PCU also prepares reports submitted to the World Bank on a quarterly basis.

The following are planned:

- Ex-ante evaluation: Report before the commencement of the Contract implementation (Engineer's Report),
- ongoing evaluation: Engineer's quarterly reports,
- Ex-post evaluation:
 - ✓ Report after the completion of the Contract (the EMP final report prepared by the Contractor and the Engineer),
 - ✓ EMP report after the Defect Notification Period prepared by the Engineer.

10. LIST OF THE SOURCE MATERIALS

- 1) Project Operational Manual (POM) for the Odra - Vistula Flood Management Project. OVFMP Project Coordination Unit. Wrocław, October 2015 with the update approved on 20.06.2017.
- 2) Environmental and Social Management Framework Plan for the Odra - Vistula Flood Management Project - final document. RZGW [Regional Water Management Board] in Szczecin, RZGW in Wrocław, RZGW in Kraków, Lubuski ZMiUW [Board of Land Amelioration and Water Facilities] in Zielona Góra, West Pomeranian ZMiUW in Szczecin, Świętokrzyski ZMiUW in Kielce, Dolnośląski ZMiUW in Wrocław, Małopolski ZMiUW in Kraków, Podkarpacki ZMiUW in Rzeszów, IMiGW - State Research Institute. April 2015.
- 3) Investment Project Implementation Permit of 11/06/2019 issued by the Lubuskie Voivode (reference number: IB-II.7820.12.2018.MSto).
- 4) Decision on the environmental conditions [Environmental Approval] of the Regional Director for Environmental Protection in Gorzów Wielkopolski of 27 February 2017, ref.no.: WZŚ.4233.1.2016.AN.
- 5) Report on the environmental impact of the project 'Flood protection of Krosno Odrzańskie', Lubuski Board of Land Reclamation and Water Facilities in Zielona Góra, November 2016, Zielona Góra - Wrocław.
- 6) Decision of the Lubuskie Voivodeship Conservator of Monuments of February 23, 2018 regarding the scope and type of archaeological research for the implementation of the project, ref.no.: ZA.5161.52.2018
- 7) Construction design for the project 'Flood protection of Krosno Odrzańskie', August 2018.
- 8) Detailed design for the project 'Flood protection of Krosno Odrzańskie', May 2017.
- 9) Decision of the Marshal of Lower Silesia Voivodeship of August 17, 2017, ref.no.: DOW-WI.7322.55.2017.KTB granting a water permit for the construction of water facilities and construction of buildings as well as the execution of works and activities in the area of particular flood risk under the investment entitled "Flood protection of Krosno Odrzańskie".

11. LIST OF ANNEXES

- Annex 1. Plan of mitigation measures
- Annex 2. Plan of monitoring measures
- Annex 3. List of national legal acts related to environmental protection
- Annex 4. Decisions issued for the Task
- Annex 4a. Decision on the environmental conditions [Environmental Approval] of the Regional Director for Environmental Protection in Gorzów Wielkopolski of 27 February 2017, ref.no.: WZŚ.4233.1.2016.AN.
- Annex 4b. Decision of the Marshal of Lower Silesia Voivodeship of August 17, 2017, ref.no.: DOW-WI.7322.55.2017.KTB granting a water permit for the construction of water facilities and construction of buildings as well as the execution of works and activities in the area of particular flood risk under the investment entitled “Flood protection of Krosno Odrzańskie”
- Annex 4c. Letter of the Lubuskie Voivodship Conservator of Monuments of December 8, 2016, ref.no.: ZN5142.68.2016 [mKOd], regarding a positive opinion on the project entitled: “Flood protection of Krosno Odrzańskie”.
- Annex 4d. Decision of the Lubuskie Voivodship Conservator of Monuments of Thursday, March 9, 2017, ref.no.: ZA.5161.40.2017, determining the scope and type of archaeological research for the investment in the field of flood protection structures entitled “Flood protection of Krosno Odrzańskie”.
- Annex 5. Map presenting the Task location against the background of protected sites (Natura 2000)
- Annex 6. Map presenting the Task location against the background of other protected areas
- Annex 7. Map presenting the location of Task key elements
- Annex 8. Public consultations report