

ENVIRONMENTAL MANAGEMENT PLAN

FINAL VERSION

for Odra-Vistula Flood Management Project

co-financed by the World Bank (WB), Loan Agreement no. 8524 PL
Council of Europe Development Bank (CEB)
Framework Loan Agreement no. LD 1866
European Union Funds (IEOP 2014-2020) and State Budget

Subcomponent 3D: Passive and Active Protection in San Basin

WORKS CONTRACT 3D.1

San Programme. Passive Protection in San Basin

ENVIRONMENTAL CATEGORY **B** – in accordance with WB OP 4.01

Issue	Date	Prepared by	Checked by	Client's Approval	Description
H	18.03.2019	Marcin Moczulski Mariusz Pawluć Rafał Salach Artur Adamski	Adrianna Siemionek- Ryszkowska		

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Subcomponent 3D: Passive and Active Protection in San Basin

Works Contract 3D.1 San Programme. Passive Protection in San Basin

The Environmental Management Plan is prepared for Works Contract 3D.1 implemented by the State Water Holding Polish Waters Regional Water Management Authority in Rzeszów

PROJECT IMPLEMENTATION UNIT:

State Water Holding Polish Waters

Regional Water Management Authority in Rzeszów

17B. Hanasiewicza Street, 35-103 Rzeszów

Prepared by:

Marcin Moczulski, Mariusz Pawluć, Rafał Salach, Artur Adamski

AECOM Polska Sp. z o.o.

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List of definitions and abbreviations applied in the EMP

Abbreviation	Description
BGW	Body of Groundwater
BIOZ Plan	Health and Safety Protection Plan developed based upon Article 21a item 4 of the Act of 7 July 1994 – <i>Building Law Act</i>
BOD ₅	Biochemical Oxygen Demand during 5 day period
BSW	Body of Surface Water
CEB	Council of Europe Development Bank https://coebank.org/en/
Consultant / Engineer	Company or legal person providing services for the Investor Technical Assistance Consultant for the OVFMP - AECOM Polska Sp. z o.o
Contract / Works Contract	Works Contract 3D.1 San Programme. Passive Protection in San Basin
Contractor	Company or a legal person implementing Works Contract 3D.1 San Programme. Passive Protection in San Basin
Designer	Company or a legal person drawing up the design documentation
EA Report	Environment Assessment Report
EIA	Environment Impact Assessment
EMP	Environmental Management Plan
Environmental Decision	Decision on environmental conditions
ESHS	Environmental, Social and Health & Safety Management System
ESMF	Environmental and Social Management Framework http://www.odrapcu.pl/doc/OVFMP/Environmental_and_Social_Management.pdf
GDOŚ	General Directorate for Environmental Protection (<i>Generalna Dyrekcja Ochrony Środowiska</i>)
H&S	Health and Safety
IBA	Important Bird Area
IMGW-PIB	Institute of Meteorology and Water Management – National Research Institute (<i>Instytut Meteorologii i Gospodarki Wodnej – Państwowy Instytut Badawczy</i>)
LA&RAP	Land Acquisition and Resettlement Action Plan
MGR	Main Groundwater Reservoir
PAD	Project Appraisal Document for the World Bank for approval of a Loan to the Polish Government to implement OVFMP ¹
PCU / OVFM PCU	Odra-Vistula Flood Management Project Coordination Unit http://www.odrapcu.pl/
PGWWP	State Water Holding Polish Waters
PIU	Project Implementation Unit - State Water Holding Polish Waters Regional Water Management Authority in Rzeszów

¹ <http://documents.worldbank.org/curated/en/2015/07/24763021/poland-odra-vistula-flood-management-project>

Abbreviation	Description
PIO	Project Implementation Office – a separate organizational unit created within PIU responsible for the implementation of the Project http://www.odrapcu.pl/
PIU/Investor/ Employer (from 1 January 2018)	State Water Holding Polish Waters Regional Water Management Authority in Rzeszów
PIU/Investor/ Employer (to December 31 st 2017)	Podkarpackie Board of Amelioration and Hydraulic Structures in Rzeszów
POM	Project Operations Manual prepared by Odra-Vistula Flood Management Project Coordination Unit, Wrocław 2015 http://www.odrapcu.pl/doc/POM_PL.pdf the binding version is English one: http://www.odrapcu.pl/doc/POM_ENG.pdf
Project / OVFMP	Odra-Vistula Flood Management Project
RDOŚ	Regional Directorate for Environmental Protection (<i>Regionalna Dyrekcja Ochrony Środowiska</i>)
Roads authority	Organizational unit responsible for management of public roads in accordance with the Act of 21 March 1985 on public roads
RZGW	Regional Water Management Authority (<i>Regionalny Zarząd Gospodarki Wodnej</i>)
SAC	Special Areas of Conservation Natura 2000
WIOŚ	Provincial Inspectorate for Environmental Protection (<i>Wojewódzki Inspektorat Ochrony Środowiska</i>)
World Bank (WB)	International Bank for Reconstruction and Development http://www.worldbank.org/

List of legal acts applied in the EMP

The table given below presents titles, publication data and abbreviated names of legal acts quoted within the contents of this EMP.

Abbreviation	Full title (with publication address)
<i>Act on damage</i>	Act of 13 April 2007 on the prevention of environmental damage and its remediation (consolidated text: Journal of Laws of 2018, item 954 as amended)
<i>Act on waste</i>	Act of 14 December 2012 on waste (consolidated text: Journal of Law 2018, item 992 as amended)
APC	Act of 14 June 1960 Administrative Procedure Code (consolidated text: Journal of Laws of 2017, item 1257 as amended)
<i>BIOZ Regulation</i>	Regulation of the Minister of Infrastructure of 23 June 2003 on information on health and safety protection as well as health and safety protection plan (Journal of Laws of 2003 no.120, item 1126)
<i>Building Law Act</i>	Act of 7 July 1994 Building Law (consolidated text: Journal of Laws of 2018, item 1202 as amended)
CC	Act of 23 April 1964 Civil Code (consolidated text: Journal of Laws of 2018, item 1025 as amended)
EC	Act of 26 June 1974 Employment Code (consolidated text: Journal of Laws of 2018, item 917 as amended)
<i>EIA Act</i>	Act of 3 October 2008 on access to information on the environment and its protection, public participation in environmental protection and environmental impact assessments (consolidated text: Journal of Laws of 2017, item 1405 as amended)
<i>EIA Regulation</i>	Regulation of the Council of Ministers of 9 November 2010 on projects likely to have significant impact on the environment (consolidated text: Journal of Laws of 2016, item 71)
<i>EPI Act</i>	Act of 20 July 1991 on Environmental Protection Inspectorate (consolidated text: Journal of Laws of 2018, item 1471)
<i>EPL Act</i>	Act of 27 April 2001 Environmental Protection Law (consolidated text: Journal of Laws of 2018, item 799 as amended)
<i>ET Act</i>	Act of 3 December 2010 on implementation of some regulations of the European Union on equal treatment (Journal of Laws of 2016, item 1219)
<i>Nature Conservation Act</i>	Act of 16 April 2004 on the nature protection (consolidated text: Journal of Laws of 2018, item 1614)
PC	Act of 6 June 1997 Penal Code (consolidated text: Journal of Laws of 2018, item 1600)
<i>PH Act</i>	Act of 23 July 2003 on protection of heritage and care for heritage (consolidated text: Journal of Laws of 2018, item 2067)

Abbreviation	Full title (with publication address)
<i>PNLE Regulation</i>	Regulation of the Minister of Environment of 14 June 2007 on permissible noise levels in the environment (consolidated text: Journal of Laws of 2014, item 112)
<i>PR Act</i>	Act of 21 March 1985 on public roads (consolidated text: Journal of Laws of 2018, item 2068)
<i>PSA Regulation</i>	Regulation of the Minister of Environment of 16 December 2016 on protected species of animals (Journal of Laws of 2016, item 2183)
<i>PSF Regulation</i>	Regulation of the Minister of Environment of 9 October 2014 on protected species of fungi (Journal of Laws of 2014, item 1408)
<i>PSP Regulation</i>	Regulation of the Minister of Environment of 9 October 2014 on protected species of plants (Journal of Laws of 2014, item 1409)
<i>SLI Act</i>	Act of 13 April 2007 on State Labour Inspection (consolidated text: Journal of Laws of 2018, item 623 as amended)
<i>Special Flood Act</i>	Act of 8 July 2010 on particular rules of preparing the implementation of flood defense investment (consolidated text: Journal of Laws of 2018, item 433 as amended)
<i>SSI Act</i>	Act of 14 March 1985 on State Sanitary Inspection (consolidated text: Journal of Laws of 2017, item 1261 as amended)
<i>Water Law Act</i>	Act of 20 July 2017 on Water Law (consolidated text: Journal of Laws of 2017, item 1566 as amended)
<i>WMP</i>	Regulation of the Council of Ministers of 18 October 2016 on Water Management Plan for Vistula River Basin (Journal of Laws 2016, item 1911)

SUMMARY

This Environmental Management Plan (EMP) concerns Works Contract *3D.1 San Programme. Passive Protection in San Basin*, which constitutes a part of Sub-component 3D within the Odra-Vistula Flood Management Project (OVFMP).

The EMP presents i.a. the following information:

- a short description of the OVFMP Project and its Component 3, which includes the Works Contract in question (chapter 1.1 and 1.2);
- purpose for developing this EMP (chapter 1.3);
- a description of the Contract constituting the subject of this EMP (chapter 2);
- characterization of institutional, legal and administrative conditions of Contract implementation, including the current status of EIA procedures for the Contract (chapter 3);
- a description of individual elements of the environment in the surroundings of the Contract (chapter 4);
- a summary of the Environmental Impact Assessment for the Contract (chapter 5);
- a description of mitigation measures aimed at eliminating or limiting the potential adverse environmental impact of the Contract (chapter 6) together with tables presenting those measures (Appendix 1);
- a description of environmental monitoring measures binding on the Contract (chapter 7) together with tables presenting those measures (Appendix 2);
- a description of the course of public consultations conducted at particular stages of developing the environmental documentation for the Contract (chapter 8);
- a description of the organizational structure of EMP implementation (chapter 9);
- an EMP implementation schedule and a description of reporting procedures (chapter 10);
- a list of source materials cited in the EMP (chapter 11);
- copies of administrative decisions in the scope of environmental protection issued for the Contract (Appendix 4).

Specificity of the Contract

The Contract being a subject of this EMP is related to the modernization of the existing flood protection embankment located on the left bank of the River San, in a reach of its estuary, over a length of about 4.5 km (at chainage km 0+000 – 4+445 according to the embankment chainage). The task shall be implemented within the Podkarpackie Province, in districts of Tarnobrzeg (Commune of Gorzyce) and Stalowa Wola (Commune of Zaleszany).

Scope of the Contract

The scope of Works Contract 3D.1 includes the following elements:

- extension (ie. elevating and expanding) of the existing embankment from the side beyond the embankment;
- extension (ie. elevating and expanding) of the existing embankment within the embanked area;
- construction of a boulevard in the form of a retaining wall;
- provision of mobile flood protection system;
- construction of a paved flood route beyond the embankment, at the embankment foot;
- development of a strip of greenery along the embankment – beyond the embankment and within the embanked area;
- extension of six embankment crossings;
- provision of drainage in order to enable drainage of water excess from the existing road;
- renovation of surface of access road located on the embankment.

Need for Contract implementation

The reason for the implementation of the Contract is the need to increase flood safety and to limit flood damage in areas situated along the left bank part of the estuary section of the San River Valley (including developed areas in communes of Gorzyce and Zaleszany), through the modernization of the existing embankment of the San River. According to the forecasts and review of historic floods, the current technical condition of the embankment, its parameters, as well as the possibilities to limit the filtration of flood waters are insufficient, which might be the cause of floods occurring in this area. The subject Contract was placed on the list no.1 "ID 3_624_W" (item 1034) in Appendix 2 "*Investments which do not adversely affect the achievement of good status of water or which do not deteriorate the status of water*" to the MasterPlan for the Vistula River Basin (2014)¹.

Institutional, legal and administrative conditions

The Contract is implemented in accordance with relevant national provisions of environmental protection in the scope of its characteristics, anticipated potential environmental impact and location in relation to protected areas.

¹ See the description in footnote in chapter 2.2.

The status of EIA administrative procedures

The following administrative letters and decisions in the scope of environmental protection are among the ones issued for the Contract in question in years 2015-2017:

- a decision on the environmental conditions for the modernization of the left embankment of the San River at chainage km 0+000 – 4+445.

The status of elements of the environment in the surroundings of the Contract

As a result of works related to identifying the values of the natural and cultural environment it has been established that the Contract implementation area and its surroundings are characterized by i.a. the following environmental conditions:

- the Contract implementation area is located within the boundaries of two Bodies of Surface Water (BSW), named PLRW20002122999 *San od Rudni do Ujścia* and PLRW20002121999 *Wisła od Wisłoki do Sanu*, and also within the boundaries of two Bodies of Ground Water (BGW), having the following codes: PLGW2000135 and PLGW2000119;
- the presence of the following was established in the Contract implementation area and its immediate surroundings: 1 protected species of plants, ca. 40 protected animal species, and 3 types of natural habitats listed in Annex I to EU *Habitats Directive*;
- the Contract implementation area is located partly within the boundaries of one Natura 2000 site and in a small distance from two other areas protected under the *Nature Conservation Act*;
- in the Contract implementation area and in its immediate surroundings, there are no monuments, objects of high cultural value or cultural property.

Summary of the Environmental Impact Assessment

Land surface and landscape

Implementation of the Contract is associated with minor land acquisition and with local felling of trees and shrubs, but those impacts are of small scale and they do not affect the landscape significantly.

Climate

The Contract implementation has no adverse impact on the climate.

Air quality

The impact of the Contract implementation on the sanitary status of the air is limited in time to the construction stage and is not significant.

Soil and ground

The Contract implementation is related to small permanent transformation of the earth surface (including soil and grounds) for the extension (ie. elevating and expanding) of the existing flood embankment, as well as to the possibility of polluting the substrate at the construction stage. At the operation stage, the contract implementation has no impact on the soil and ground status. If the conditions set out in Appendix 1 to the EMP are correctly fulfilled, the Contract implementation will not have any adverse impact on the condition of soils and grounds (including the soils and grounds within Natura 2000 site listed in chapter 4.8.2).

Surface waters

The Contract implementation has no adverse impact on surface waters.

Groundwater

The Contract implementation has no adverse impact on groundwater.

Acoustic climate

The impact of the Contract implementation on the acoustic climate is limited in time to the construction stage and is not significant.

Biotic nature

The Contract implementation shall cause minor adverse impact for 3 types of natural habitats, 1 protected plant species and ca. 40 protected animal species present on the terrains of planned works and in the immediate vicinity thereof. Those impacts mainly result from the necessary land acquisition, traffic of vehicles and machines during the construction period, and felling of trees and shrubs, and they shall be significantly reduced due to the planned mitigation measures, and they will not significantly affect the status of resources within the aforementioned habitats and species – even in a local scale. The Contract implementation does neither significantly affect the status of Natura 2000 sites nor other protected areas.

Cultural monuments and material goods

The Contract implementation has no adverse impact on cultural monuments and material goods.

Human health and safety

The Contract implementation does not generate significant hazards to human health and safety. These may only occur in the case of breakdowns, catastrophes and other random incidents (e.g. pollutant leak, fire, finding unexploded bombs or unfired rounds, flood). The EMP defines appropriate conditions aimed at preventing such events and minimizing their potential effects.

Other hazards in the range of ESHS

Regardless of the issues or hazards related to ESHS, as listed above, other types of issues may occur, e.g. accidents and near misses, cases of sexual harassment or mobbing, violation of labour law, sexually transmitted infections, including HIV/AIDS, and others. The EMP determines relevant conditions to counteract hazards of those types and to successfully react in cases of their occurrence.

Mitigation and monitoring measures

Chapters 6 and 7 and Appendices 1 and 2 to the EMP describe and present in tables a set of mitigation measures and monitoring measures aimed at eliminating or limiting the adverse environmental impact of the Contract, and ensuring effective implementation of EMP conditions. Those measures contain conditions defined in the Environmental Decision and additional conditions established when developing the EMP.

Public consultations

Chapter 8 of the EMP contains a report of public consultations conducted as a part of EIA procedures for the planned Contract, including:

- public consultations for the document entitled *Environmental and Social Management Framework* (ESMF) for OVFM Project (2015);
- public consultations conducted at the stage of issuing environmental decision for the Task (2015-2016);
- public consultations for this Environmental Management Plan (2019).

1. INTRODUCTION

This study presents the Environmental Management Plan (EMP) for the Works Contract 3D.1 San Programme. Passive Protection in San Basin, implemented under the Odra-Vistula Flood Management Project (OVFMP) co-financed by the International Bank for Reconstruction and Development (the World Bank), Loan Agreement no. 8524 PL; Council of Europe Development Bank (CEB), Framework Loan Agreement no. LD 1866, European Union Funds (IEOP 2014-2010) and State Budget. Emphasis should be put on the fact that the presented document is a site-specific study and is dedicated only to the Works Contract 3D.1.

1.1. ODRA-VISTULA FLOOD MANAGEMENT PROJECT

The primary purpose of the OVFMP Project is to protect the population on the floodplains within the selected parts of the river basins of the two largest Polish rivers Vistula and Odra against risk caused by extreme floods. Under OVFMP it is planned to execute the most urgent tasks regarding flood management. The Project has been divided into five main Investment's components that cover: Protection of the Middle and Lower Odra River (Component 1), Flood protection of the Nysa-Kłodzka Valley (Component 2), Flood protection of the Upper Vistula (Component 3), Institutional Strengthening and Enhanced Forecasting (Component 4) and Project Management and Studies (Component 5). The components are divided into Subcomponents.

Units directly responsible for the implementation of the above components of the Project are:

- 1) State Water Holding Polish Waters RZGW in Wrocław and RZGW in Szczecin
– in the scope of the Protection of the Middle and Lower Odra River (Component 1)
and the Flood protection of the Nysa-Kłodzka Valley (Component 2 – RZGW in Wrocław only);
- 2) State Water Holding Polish Waters RZGW in Rzeszów and RZGW in Kraków
– in the scope of the Flood protection of the Upper Vistula (Component 3);

Detailed information on the Project has been published in the document 'Project Operation Manual'¹.

¹ http://www.odrapcu.pl/doc/POM_PL.pdf,
binding English document is available on:
http://www.odrapcu.pl/doc/POM_ENG.pdf

1.2. COMPONENT 3, SUBCOMPONENT 3D

Under Component 3, four Subcomponents have been identified, designated as 3.A (Protection for Upper Vistula Town and Cracow), 3.B (Protection of Sandomierz and Tarnobrzeg), 3.C (Passive and Active Protection in Raba Sub-basin) and 3.D (Passive and Active Protection in San Basin) – names used are consistent with the POM.

The Works Contract 3D.1 San Programme. Passive Protection in San Basin is comprised by Subcomponent 3D. Under this Contract, it is planned to extend and modernize the left flood embankment of the San River at km 0+000 – 4+445 (estuary section) in order to protect the areas within the boundaries of Wrzawy in Gorzyce Commune (Tarnobrzeg District). The areas to be protected by the modernized section of the flood embankment comprise of residential areas (rural buildings), agricultural land (mainly meadows and arable land) and infrastructure (e.g. transport infrastructure).

1.3. THE AIM OF PREPARING THE EMP IN THE LIGHT OF POLICIES OF THE WORLD BANK

According to the Project Appraisal Document (PAD), the OVFM Project implemented by State Water Holding Polish Waters Regional Water Management Authority in Rzeszów, continuing tasks of the Podkarpackie Board of Amelioration and Hydraulic Structures in Rzeszów since 2018, is a Project with no significant adverse impact on the environment, thus classified according to Bank Policy in category 'B'¹. According to the guidelines of the World Bank, the Environmental Management Plan is an instrument specifying: a) the set of measures used to eliminate or mitigate adverse impacts of the Works Contract on the environment, which should be taken at the stage of its implementation and after its completion, and b) actions necessary for the effective implementation of these measures².

The main purpose of the EMP, prepared for each Works Contracts separately, is ensuring effective mitigation/alleviation and monitoring of unfavorable environmental impacts identified at the stage of the Environmental Impact Assessment, and during further administrative procedures, necessary for the implementation of the construction phase and operational phase.

It should be emphasized that this EMP does not supersede the provisions of issued administrative decisions, but is a separate document, that assigns to the Contractor actions resulting from the decisions and other legal provisions required by the Project's Financing

¹ According to the classification specified in item 8 of the operational policy OP 4.01 of the World Bank (February 2011) : <http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,contentMDK:20064724~menuPK:64701763~pagePK:64709096~piPK:64709108~theSitePK:502184,00.html>.

² According to item 3 in Annex A to the operational policy OP 4.01 of the World Bank.

Institutions. It also imposes an obligation to implement by the Contractor the detailed recommendations stated in decisions and legal regulations (see Appendix 3 – List of national legislation related to environmental protection and Appendix 4 – the Environmental Decision).

2. DESCRIPTION OF THE WORKS CONTRACT

2.1. CONTRACT LOCATION AND AREA

The Works Contract is located at km 0+000 – 4+445 of San River, mostly within the boundaries of Gorzyce Rural Commune (Tarnobrzeg District, Podkarpackie Province). The last 20 m section of the embankment (connection to the embankment San II section) is located within the boundaries of Zaleszany Rural Commune (Stalowa Wola District, Podkarpackie Province). The Site covers north and east section of Wrzawy Parish (Gorzyce Commune).

The location of the Contract is presented on a figure given below (Fig. 1).

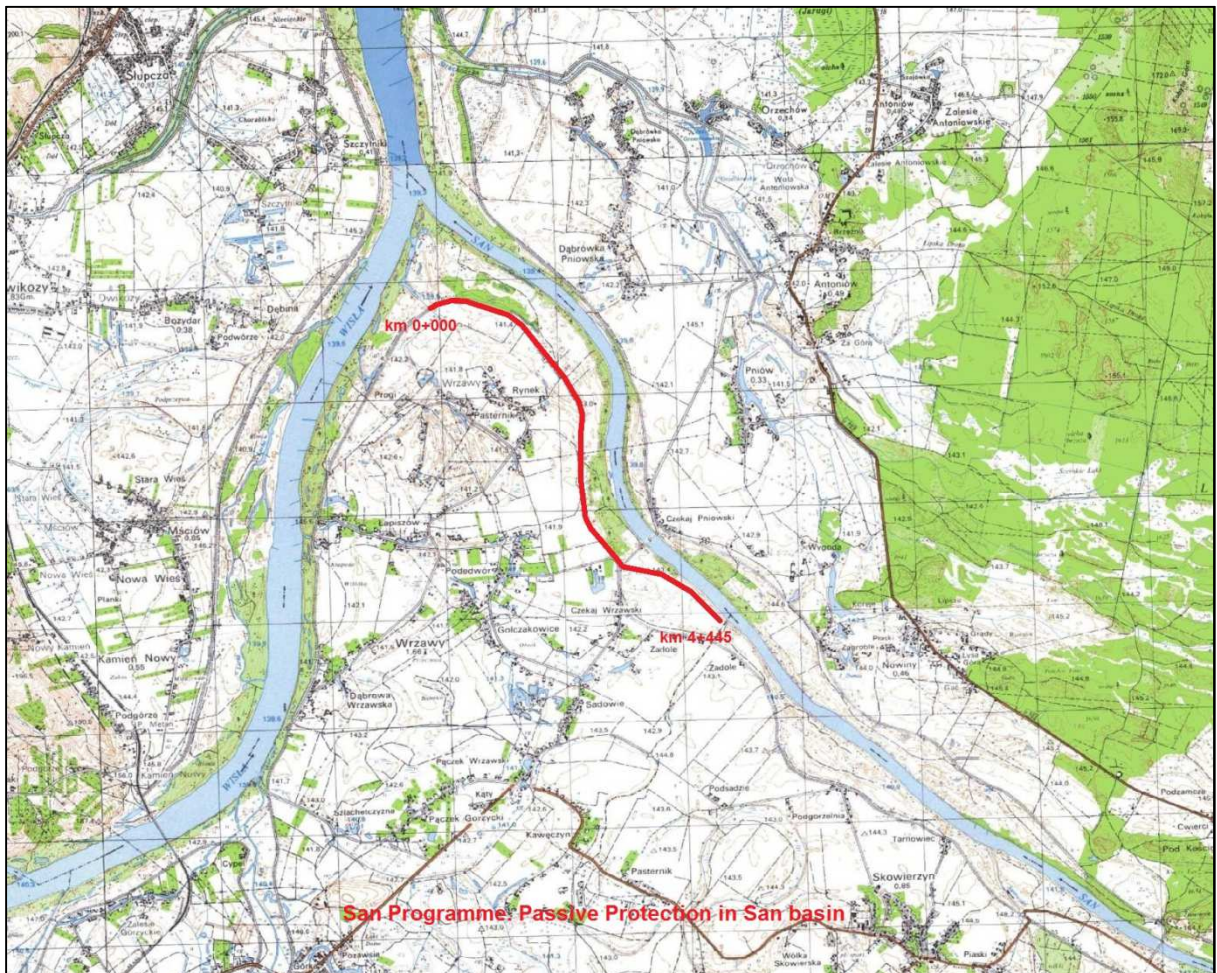


Figure 1. Contract location

2.2. CHARACTERISTICS OF THE WORKS CONTRACT

The Works Contract will cover the modernization of the existing embankment on the left bank of the San River, over a length of 4.445 km (from km 0+000 to km 4+445).

The modernized section of the embankment will be joined with the adjacent sections of existing embankments, with matching to their parameters (including levels of embankments crests). The levels are consistent with the design provided for the Contract 3B.2: Flood protection Tarnobrzeg, Vistula River Stage 2 (Construction Design provided) and for section San II (contract completed). The location of both above-mentioned embankments (ie. the Wisła River Stage 2 embankment and the San II embankment) adjacent to the modernized embankment section is presented on the maps in Appendices 5 and 10 to the EMP.

Referring to the environmental screening described in the Environmental and Social Management Framework Plan for OVFMP, the Works Contract is included on the List no. 1 "ID 3_624_W" (ordinal number: 1034) in the Attachment 2 "*Investments which do not adversely affect the achievement of good status of water or which do not deteriorate the status of water*" to the MasterPlan for the Vistula River Basin (2014)¹.

Characteristic points of the modernized embankment:

- km 0+000 – the start of the embankment, Wrzawy, Gorzyce Commune (Tarnobrzeg District, Podkarpackie Province),
- km 4+425 – the borderline between Gorzyce Commune (Tarnobrzeg District) and Zaleszany Commune (Stalowa Wola District),
- section km 4+425 – 4+445 – joining the embankment of San III section to embankment of San II section (works completed in 2015) in Zaleszany Commune,
- km 4+445 – the endpoint of the embankment in Skowierzyn, Zadole suburb (Stalowa Wola District, Podkarpackie Province).

The design parameters require elevation of the existing embankment:

- km 0+000 – 3+150 – average by 1.0 m,
- km 3+150 – 4+445 – average by 0.5 m,
- entire section km 0+000 – 4+445 – average by approx. 0.8 m.

¹ MasterPlans for the Vistula River Basin and the Odra River Basin remain a results of establishments made with the European Commission, and their consequence was "*The Action Plan for Strategic Water Management Planning*" (*Resolution of the Council of Ministers* of July 2nd, 2013 no. 118/2013) adopted by Poland.

MasterPlans remained supplementation for the binding *Water Management Plans* until their update in 2015, and subsequently their results – referring to investment affecting or which may affect the status of Bodies of Water (BSW/BGW) – were transferred to the updated *Water Management Plans* (constituting an annex to the *Regulation of the Council of Ministers* of October 18th, 2016 [Journal of Laws item 1967])

Basic parameters of proposed embankment:

- embankment Class – II
- design flow p = 1.0%
- control flow p = 0.3%
- embankment's length $L_{ca} = 4445$ m
- embankment's crest width – approx. 3.0 m
- embankment's crest width in road section – approx. 4.5 – 5.0 m
- waterside and landside slope grade – 1:1.5 ÷ 1:2.5 (landside slope grade - section at km 3+445 – 4+445 – 1:1.5 ÷ 1:10).

Modernization will include i.a. the following elements (shown on the map in Appendix 10 to the EMP):

- extension (ie. elevating and expanding) of the majority of the embankment from the side beyond the embankment – extension at km 0+000 – 2+960 by the construction of a typical earth bank;
- extension (ie. elevating and expanding) of the embankment from the riverside – extension at km 3+445 – 4+445 (overlapping section of approx. 10 m with retaining wall at km 3+435 – 3+445), where due to the proximity of the buildings the extension of the embankment would require resettlement of residents and demolition of the buildings;
- construction of a retaining wall – construction of a boulevard in the form of a retaining wall (impermeable wall with concrete clamps from riverside's area) together with earth-fill embankment on the side beyond the embankment at km 2+960 – 3+130, as well as the retaining wall (with no earth-fill embankment) at km 3+130 – 3+180 and at km 3+212 – 3+445;
- provision of mobile flood protection system at km 3+180 – 3+212;
- construction of a paved flood route, next to the foot of embankment from the side beyond the embankment at km 0+000 – 2+960, and the other one, away from the foot of embankment at km 2+960 – 3+100;
- provision of approx. 4-5 m wide landscaped stripes along the embankment on both the river site and beyond the embankment, to enable the communication;
- extension and strengthening of six embankment crossings at km 0+086, 1+350, 3+180, 3+610, 3+895 i 4+315;
- construction of a vertical anti-filtration membrane at km 0+000 – 2+960 in the embankment axis, and construction of a vertical anti-filtration membrane with surface anti-filtration protection in the foot of embankment's waterside slop at km 3+440 – 4+445;

- provision of drainage along proposed retaining wall (the side beyond the embankment) at km 3+215 – 3+435, in order to enable drainage of water excess from the existing road within riverside's area – drainage channels (or drainage system) together with drainage pipes with non-return valves and strengthening of road bank from the riverside approx. 1.0 m wide;
- provision of drainage along proposed earth-fill embankment (the side beyond the embankment) at km 3+435 – 4+438, in order to enable drainage of water excess from the existing road within riverside's area – drainage channels (or drainage system) together with drainage pipes with non-return valves and strengthening of the slop from the riverside approx. 1.0 m wide;
- renovation of access road's surface at km 3+445 – 4+445.

The proposed modernization is designed to increase the function of the embankment and significantly minimize any possible saturation or loss of stability of the embankment. The current technical condition of the embankment does not provide the required stability. The final result will be improved flood safety in the valley of the estuary section of San River.

3. INSTITUTIONAL, LEGAL AND ADMINISTRATIVE CONDITIONS

3.1. INSTITUTIONS INVOLVED IN THE IMPLEMENTATION OF THE CONTRACT

The direct Investor/Employer for this Contract is State Water Holding Polish Waters Regional Water Management Authority in Rzeszów. Additionally, at the construction and operational phases, implementation of the Contract may require the involvement of public administration units on central, regional and local levels. The responsibility for the coordination of the Contract concerning Loan Agreement no. 8524 PL and Framework Loan Agreement no. LD 1866, as well as monitoring of its implementation, lies with the Odra-Vistula Flood Management Project Coordination Unit.

3.2. BINDING POLISH LAW ACTS WITH REGARD TO THE ENVIRONMENT

In accordance with the Polish Law, the investment process related to environmental protection remains a subject of several acts and regulations. A summary of selected, basic legal acts binding in case of environmental protection has been presented in Appendix 3 to the EMP. The Contractor is obliged to apply current legal acts in the scope of environmental protection if during the course of the Works Contract implementation they are amended. The provisions of the EMP do not absolve the Contractor from the obligation to comply with all legal regulations applicable in the country of the Contract implementation.

3.3. MAIN STAGES OF THE EIA PROCEDURE IN POLAND

The description of the EIA procedure in Polish legislation is included in the Environmental and Social Management Framework (ESMF) published on the i.e. websites of the World Bank¹ and the Odra-Vistula Flood Management Project Coordination Unit².

3.4. WORLD BANK REQUIREMENTS

The Works Contract is co-financed by the International Bank for Reconstruction and Development (the World Bank). The conditions of its implementation, with regard to environmental protection, are compliant with the following policies of the World Bank:

- OP 4.01 – on the Environmental Impact Assessment,
- OP 4.04 – on natural habitats,
- OP 4.11 – on the physical cultural resources.

¹ <http://documents.worldbank.org/curated/en/2015/04/24502899/poland-odra-vistula-flood-management-project-environmental-social-management-framework>

² http://www.odrapcu.pl/popdow_dokumenty.html

Description of the aforementioned the World Bank policies are included in the already prepared Environment and Social Management Framework published on the i.e. websites of the World Bank and the Odra-Vistula Flood Management Project Coordination Unit.

3.5. THE CURRENT CONDITION OF EIA PROCEDURES FOR THE WORKS CONTRACT

According to the Regulation of the Council of Ministers of 9 November 2010 on projects likely to have significant impact effect on the environment, the Project is classified as Group II (Paragraph 3 Clause 1 Point 65 of the Regulation), covering projects that could potentially have a significant impact on the environment. According to Article 59 Clause 1 Point 2 and Article 63 Clause 1 of the Act of 3 October 2008 on access to information on the environment and its protection, public participation in environmental protection and environmental impact assessments (*EIA Act*) these projects require Environmental Impact Assessment if the obligation is a decision of an authority relevant to the issue of the Environmental Decision. In this case, according to Article 75 Cause 1 Point 1 letter i, the Regional Director for the Environment Protection in Rzeszów is a relevant authority.

The EIA procedure for this Contract is as follows:

1. The Regional Director for the Environment Protection in Rzeszów received an application of Ms. Małgorzata Wajda – Director of the Podkarpackie Board of Amelioration and Hydraulic Structures, acting under the authority of the Marshal of the Podkarpackie Province, dated 28 July 2015 (Ref. no.: IM.403.61.7.2015), on the issuance of the decision on environmental conditions for implementation of the Contract titled: “San III – modernization of the left embankment of the San River at km 0+000 – 4+445, Gorzyce Commune, Podkarpackie Province”.
2. Pursuant to applicable legal provisions, the information regarding submission of the application was placed on publicly accessible list of documents, containing information on the environment and its protection, run by the Regional Director for the Environment Protection in Rzeszów, i.e. in the information card under number 858/2015.
3. On 3 August 2015, the Regional Director for the Environment Protection in Rzeszów, by way of an announcement, notified the parties about the commencement of the proceeding and the possibility of familiarizing themselves with the submitted documentation.
4. On 7 September 2015, after a review of gathered documents and taking into account provisions of Article 63 Clause 1 of the *EIA Act*, the Regional Director for the Environment Protection in Rzeszów issued a Decision (Ref. no.:

- WOOŚ.4233.2.2015.KR.12) ascertained the obligation to conduct the Environmental Impact Assessment, and defined the scope of the Environmental Assessment Report.
5. On 20 October 2015, the Regional Director for the Environment Protection in Rzeszów issued a Decision (Ref. no.: WOOŚ.4233.2.2015.KR.19) to suspend the proceedings regarding the issue of the Environmental Decision on conditions of the Contract implementation, notifying the parties in the Notice dated 20 October 2015 (Ref. no.: WOOŚ.4233.2.2015.KR.20).
 6. On 3 February 2016, the Director of Podkarpackie Board of Amelioration and Hydraulic Structures in Rzeszów submitted to the Regional Directorate for the Environment Protection in Rzeszów, the Environmental Assessment Report attached to the letter (Ref. no.: IM.403.36.2.2016).
 7. With the Decision dated 9 February 2016 (Ref. no.: WOOŚ.4233.2.2015.KR.25), the Regional Director for the Environment Protection in Rzeszów resumed the proceedings regarding issuance of the Environmental Decision on conditions of the Contract implementation, notifying the parties in the Notice dated 9 February 2016 (Ref. no.: WOOŚ.4233.2.2016.KR.26).
 8. Information on the submission of the Environmental Assessment Report was placed on publicly accessible list of documents containing information on the environment and its protection, run by the Regional Director for the Environment Protection in Rzeszów, i.e. in the information card under number 292/2016.
 9. In the course of the proceedings it was found that the submitted materials do not adequately cover all issues relevant to the environment protection as described in the *EIA Act*, therefore, in a letter dated 2 May 2016 (Ref. no.: WOOŚ.4233.2.2015.KR.37), the Director of Podkarpackie Board of Amelioration and Hydraulic Structures in Rzeszów was requested to complete the Report.
 10. In a letter dated 8 July 2016 (Ref. no.: JRP.403.32.3a.2016), the Applicant provided explanations and clarifications in this case.
 11. After review of the documents and clarifications submitted by the Applicant, the Regional Director for the Environment Protection in Rzeszów decided that submitted Report complies with the requirements of Article 66 of the *EIA Act*, and in a letter to the State District Sanitary Inspector in Tarnobrzeg dated 1 August 2016 (Ref. no.: WOOŚ.4233.2.2015.KR.47) and in a letter to the State District Sanitary Inspector in Stalowa Wola dated 16 September 2016, requested issuance of the opinion in accordance with Article 77 Clause 1 Point 2 of the *EIA Act*.
 12. After review of the documents the State District Sanitary Inspector in Tarnobrzeg in a letter dated 1 September 2016 (Ref. no.: PSNZ.466.5.2016), issued a positive opinion on the implementation of the Contract. The State District Sanitary Inspector

in Stalowa Wola did not provide the opinion within the statutory period of 30 days from the receipt of a letter from the Regional Director for the Environment Protection in Rzeszów, which, in accordance with Article 78 Clause 4 of the *EIA Act*, was treated as no objection to the proposed Contract and processed documentation.

13. The public participation was ensured as part of the administrative proceedings carried out at the stage of Environmental Impact Assessment, in accordance with Article 79 of the *EIA Act*. The Regional Director for the Environment Protection in Rzeszów, by way of announcements dated 1 September 2016 (Ref. no.: WOOŚ.4233.2.2015.KR.49) and 16 September 2016 (Ref. no: WOOŚ.4233.2.2015.KR.57), made public number of information, including e.g. commencement of the proceedings regarding the issuance of the Environmental Decision. In accordance with the Regional Director's for the Environment Protection in Rzeszów notification, during the public consultation stage, lasted from 9 to 30 August and from 22 September to 13 October 2016, there were no comments sent to the Regional Directorate for the Environment Protection in Rzeszów related to the Contract.
14. In accordance with Article 10 of the Administrative Procedure Code, prior to issuance of the Environmental Decision the parties were informed in form of the Announcement by the Regional Director for the Environment Protection in Rzeszów dated 28 October 2016 (Ref. no: WOOŚ.4233.2.2015.KR.65), of the option to comment on the evidence gathered.
15. None of the parties to the proceedings took advantage of the opportunity to comment on the gathered evidence and material which was the base for the issuance of the Environmental Decision.
16. After review of the scope of the proposed Contract and after identifying its potential impact on the environment, it was found that the Contract will not cause cross-border impact, therefore it is not necessary to conduct the procedure referred to Article 104 Clause 1 of the *EIA Act*.
17. Based on the review of gathered documents it was also stated that the implementation and operation of the Contract while maintaining conditions that were subsequently included in the Environmental Decision, will comply with the applicable standards for the quality of the environment and protection of human health.
18. The Environmental Decision regarding the Contract was issued on 2 January 2017 (Ref. no: WOOS.4233.2.2015.KR.76) by Regional Director for the Environment Protection in Rzeszów. The parties to the proceedings were notified of the issue of the Environmental Decision in the Regional Director's for the Environment Protection in Rzeszów Announcement dated 2 January 2017 (Ref. no: WOOŚ.4233.2.2015.KR.77). The Decision was made public on 2 January 2017 (Ref. no: WOOŚ.4233.2.2015.KR.78).

19. During the statutory period of 14 days, parties to the proceedings did not exercise their right to appeal the Decision to the General Director for Environment Protection, therefore the Decision became final on 16 January 2017.

The Environmental Decision is attached to the EMP (Appendix 4).

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

4.1. LAND SURFACE, LANDSCAPE, AND GEOLOGY

The existing embankment is located on the left riverbank of estuary section of San River at km 0+000 – 4+445 in two Communes: Gorzyce (Tarnobrzeg District) and Zaleszany (Stalowa Wola District). In geographical terms, the estuary section of San River is located in the northern part of Sandomierska Dale (Sandomierska Dale covers mainly the areas between upper Vistula River Valley and the Valley of the Middle and Lower San River), within the so-called Nadwiślańska Plain. The end section of the embankment enters the area of Lower San Valley. Morphologically it is the right-bank part of Vistula River Valley reaching a general width of 8 to 12 km. Ground levels in this part of the valley are between 140 and 145 m a.s.l. (mostly between 141-143 m a.s.l., on the side beyond the embankment, as well as in the riverside's area).

In terms of geology, it is the northern part of Carpathian Foredeep – a vast tectonic form with a complex structure and range very closely corresponding to the Sandomierska Dale area. It is a relatively flat area, and its natural feature is a slight fall towards Vistula River, in a western and north-western direction.

Vistula River and San River valleys are filled with quaternary river sediments, in the form of peat with a thickness of 5 to 10 m within the flood terrace, as well as mud of more than 10 m thick in the overflow terrace area. Below, there is only a few meters thick layer of boulder clay, and then a several dozen meters thick layer of Miocene loam (so-called Cracow clays).

4.2. CLIMATE

According to climatic regionalization of Poland (A. Woś, 1993), the Contract' area is located in the northern part of Sandomierz Region – XXII (one of the smallest) covering the area between Carpathian foothills (Outer Carpathians) and the confluence of Vistula and San River valleys. It is a lowland climate region, with a large number of very warm and sunny days, and an average amount of rainfall. In the vicinity of the Contract's area, i.e. at the confluence of the Vistula and San River valleys, due to the close proximity of large river valleys, local climate conditions undergo modification, which results in greater fog formation, cold air stagnation or inversion of temperature.

4.3. AIR QUALITY

Monitoring of air pollution in Podkarpackie Province is carried out by the Provincial Inspectorate for Environmental Protection in Rzeszów. The concentration of gaseous pollutants covered by the research program in the Podkarpackie Province in 2010-2014 (sulfur dioxide, nitrogen dioxide, carbon monoxide, benzene and ozone as health protection criterion, and sulfur dioxide, nitrogen dioxide and ozone as plant protection criterion) reached low values throughout the Podkarpackie Province. There was no exceeding of any values, both from health protection and plant protection criterion point of view. In the Podkarpackie region (Podkarpackie Province excluding the city of Rzeszów) in 2010-2014, the increased levels were noted for benzo(a) pyrene, PM_{2.5} dust, and PM₁₀ dust.

Due to the lack of measuring stations of the monitoring network near the Contract's area, it is difficult to precisely determine the quality of air for this area. The main sources of pollution might be transported emissions (diesel engine transport on local roads), as well as emission from household heating in residential areas. There are no sources of concentrated significant emission of pollutants to the air within the boundaries, as well as in the vicinity of the Contract's area. Large open spaces and lack of forests in the part of river valley significantly affect the air circulation. At the same time, the topoclimates of valley bottom and land depressions hinder the spread of pollution.

4.4. SOIL AND GROUND

The soil structure within the Contract's area in terms of typology is formed by mineral soils in the form of river sediments or alluvial sediments of modern storage terraces, mainly silty clays and dust, as well as silty sands (the silt fraction predominates grain structure). This type of soil occurs practically within the entire San and Vistula River valley, as well as smaller river valleys.

They are mainly a substructure for meadows and pastures, in other areas they are wastelands. These are mostly soils with a slightly acid reaction, moving towards neutral (in a layer to the depth of 0.5 m b.g.l.), periodically overly moistened (but not waterlogged).

Rusty soils, podzolic soils, and podzols dominate in the Contract's area and are largely used as arable land. The largest share in the arable land has Class IIIa and Class IIIb soils, while Class IV predominates in grasslands.

In the base of the embankment, there are mainly fine-grained soils (dust and clays) with a consistency from compact to plastic (geotechnical layers IIa, IIb, IIc, and II d). Below there are moderately compacted coarse soils – fine, medium and coarse sands (geotechnical layers IIIb and IV). An occasional occurrence of larger elements in the ground, such as individual boulders or tree trunks, cannot be ruled out. The thickness of fine-grained soils varies, from

approx. 0.3 m to above 5.0 m, depending on the section and location relative to the embankment.

The embankment's body is mainly built from fine-grained soils (dust, sandy dust, less often dusty clay) with compact and hard plastic consistency.

4.5. SURFACE WATERS

The area covered by the Works Contract is located in the central Vistula River Basin, near Estuary of San River. The area of construction works is located from 200 m to 570 m from the riverbed of San River (depending on the embankment' section) and about 500 m from the riverbed of Vistula River in the initial cross-section (km 0 + 000).

The Vistula is Poland's longest (1022 km) and the largest river in terms of the catchment area (193 960 km²). Its sources are located in southern Poland at the level of 1,107 m a.s.l. on the west slope of Barania Mountain in Silesian Beskid Mountains.

San River is a right tributary of the Vistula River. It is 458 km long (457 km in Poland), and the catchment area is 16,877 km² (14,426 km² in Poland). Its sources are located in Ukraine on the Użocki Pass in West Bieszczady Mountains.

Apart from the San River, the closest to the Contract's area tributaries of Vistula River are Łęg River flowing through Gorzyce Commune area (approx. 4.0 km southwest of the modernized embankment) and Trześniówka River on the border of Gorzyce Commune and the city of Sandomierz in Świętokrzyskie Province (approx. 6.0 km southwest of the modernized embankment).

According to the hydrographic division of the country, the Contract's area is located in the San Basin administered by Regional Water Management Authority in Rzeszów.

The Upper Vistula Water Region includes the Vistula River catchment area, from the section below the Estuary of Przemsza River (Chelmek Commune in Małopolskie Province) to the Estuary of Sanna River (Annopol Commune in Lubelskie Province), with a total area of 47,515 km² (of which 43,109 km² in Poland), which is about 25% of the Vistula River Basin. The Water Region covers partially area of five provinces, including the majority of Małopolskie Province and of Podkarpackie Province. In terms of hydrography the region is characterized by the asymmetry of Vistula River Basin, with significantly smaller left-bank part and bigger right-bank part

In line with “Water Management Plan for Vistula River Basin” (*WMP*), adopted by the Regulation of the Council of Ministers of 18 October 2016 the Contact will be implemented within the basin of two water bodies:

- BSW *San od Rudni do Ujścia* (code: PLRW20002122999), is part of a merged section of water GW0833,
- BSW *Wisła od Wisłoki do Sanu* (code: PLRW20002121999), is part of a merged section of water GW0501.

BSW – San from Rudnia to Estuary (code: PLRW20002122999) is a natural part of the waters. According to *WMP* typology, it is described as a large lowland river (type 21). Based on the results of monitoring tests its condition is described as bad. There was a threat of a failure to achieve environmental goals (good ecological status, water creature migration ability in the important watercourse section – San from the Estuary to Rudnia, good chemical status) for BSW.

BSW – Vistula from Wisłoka to San PLRW20002121999 is a heavily changed water body. According to *WMP* typology, it is described as a large lowland river (type 21). Based on the results of monitoring tests its condition is described as bad. There was a threat of a failure to achieve environmental goals (good ecological potential, water creature migration ability in the important watercourse section – the Vistula from San to Wisłoka and good chemical status) for BSW.

For both water bodies derogation was granted for extension of time for achieving the goals by 2021 due to lack of technical capabilities to achieve the goals before that date. The justification stated that under the Water Management Plan for Vistula River Basin, no pressure was identified that could be the cause of exceeded quality indices in Surface Water Body catchment area. It is necessary to make a detailed review of the causes in order to properly plan corrective measures. Recognition of the reasons for failure to achieve good status will be ensured by implementation of the measures at the national level: creation of a national database on hydro-morphological changes, conducting a thorough analysis of pressures for hydro-morphological changes, developing good practice for hydrotechnical works and maintenance works, including their implementation rules, as well as developing national program for surface water re-naturalization.

4.6. GROUNDWATER

According to the systematics of hydro-geological units (Regional Hydrogeology of Poland, National Geological Institute, 2007), the entire Contract's area is located in the Vistula River Province, Upper Vistula River Region, Carpathian Foredeep sub-region.

At the confluence of the Vistula and San valleys (Gorzyce Commune, Zaleszany Commune), one usable water-bearing level was set – groundwater level within the Quaternary layer. On the Hydrogeological Map of Poland in 1:50 000 this area corresponds with 12aQII hydrogeological unit. The level of the utility layer table is below 5 m b.g.l. and it decreases in the proximity of the riverbeds of Vistula and San. The water-bearing level comprises of river sands with an admixture of silt and gravel and interbedded with fluvial sands. The thickness of this level is 15 m average.

The Contract's area is situated within the Main Groundwater Reservoir (MGR) no. 425 - Dębica - Stalowa Wola - Rzeszów. It is a Quaternary reservoir with the porous character of water-bearing levels. It is one of the dozens of reservoirs in the pre-Carpathian area in terms of area and disposable resources. It covers the area of approx. 2,158 km² (according to detailed survey) from Dębica – Rzeszów – Przeworsk line to the south to the Zawichost area to the north. Water-bearing layers of the reservoir are built of quaternary sands and gravel. Free flowing table of Quaternary level's water is quite shallow, usually at the depth of 1-5 m b.g.l. The estimated total available resources of the reservoir are 26,612 m³/h (638,688 m³/d). So far, no protection zone was established for MGR no. 425.

According to the updated "Water Management Plan for Vistula River Basin" (WMP), the Contract's area is located within two homogeneous bodies of groundwater – BGW 135 (PLGW2000135) and BGW 119 (PLGW2000119). The side beyond the embankment and northern part of the riverside's area up to approx. km 1+300 is covered by BGW 135, while BGW 119 includes the San River and the remaining area of the riverside.

BGW 135 with an area of 1,594.0 km² covers a part of the right bank of the Vistula River Basin above the Estuary of San River formed by catchment areas of Łęg and Trześniówka Rivers. The unit consists of Quaternary water-bearing floor built mainly of sand and gravel of fossil valleys. Quaternary floor supply of water consists of infiltration of rainwater. BGW 135 shows good quantitative status and good chemical condition, but in terms of failure to achieve environmental objectives, it is considered to be at risk.

BGW 119 with an area of 1,377.8 km² covers part of Lower San River catchment area below the Estuary of Tanwia River. The unit consists of Quaternary water-bearing floor built mainly of river sand and gravel, the Paleogene-Neogene-Cretaceous floor is built of limestone and sandstone, and Cretaceous floor built of marl, rocks, and limestone. Water is supplied by infiltration of rainwater. BGW 119 shows good quantitative status and good chemical condition and it is not at risk in terms of failure to achieve environmental objectives.

4.7. ACOUSTIC CLIMATE

In the area of the Works Contract implementation, there are no significant noise-generating sources. The Site is located away from the heavy traffic roads (public roads, railway lines) and therefore the acoustic climate in this area is quite favorable. The climate is mainly subject to the operation of nearby building structures (residential and utility), local road's traffic, as well as agricultural land operations using heavy duty equipment (farming equipment).

According to the classification specified in the legislation concerning acoustic protection (Regulation of the Minister of Environment of 14 June 2007 on permissible noise levels in the environment), there are protected areas in the vicinity of the Site:

- residential areas; and
- farm build-up areas.

The closest housing development is located approx. 5 m away from the foot of the embankment. It should be noted that these are individual buildings only, and the majority of the Contract's area goes through open fields, meadows, wastelands, that are not subject to legal protection against noise in accordance with the above-mentioned Regulation.

4.8. BIOTIC NATURE

4.8.1. Protected natural habitats and species

Natural habitats from Annex I to the *Habitats Directive*

Within the Contract implementation range and in its direct surroundings presence of 3 types of natural habitats from Annex I to the *Habitats Directive* was identified. They are:

- 6440 Alluvial meadows (*Cnidion dubii*)
Two parts of habitat patch are located within the Contract implementation range, on the riverside of the embankment (at chainage about km 0+130 and about km 3+230 – 3+500).
- 6510 Lowland hay meadows (*Arrhenatherion elatioris*)
One part of habitat patch is located within the Contract implementation range, on the riverside of the embankment (at chainage about km 2+650 – 2+800).
- 91E0 Riparian mixed forests of willow, poplar, alder and ash tree (*Salicetum albo-fragilis*, *Populetum albae*, *Alnenion glutinoso-incanae*)
Six parts of habitat patch are located within the Contract implementation range or at its boundaries, on the riverside of the embankment (at chainage about km 0+130 – 0+300, about km 0+320 – 1+000, about km 1+190 – 1+350, about km 2+070 – 2+100, about km 2+300 – 2+330, and about km 2+500 – 2+580).

Location of the aforementioned environmental habitats is presented (based upon data given in the EIA Report) on the map in Appendix 9 to the EMP.

Protected species of plants and fungi

Within the Contract implementation range and in a buffer of up to 100 m from the modernized embankment presence of one plant species under protection, in accordance with the Regulation of the Minister of Environment of 9 October 2014 on protected species of plants, was identified. It is Mouse garlic (*Allium angulosum*) – species under partial protection.

That species was identified within vast areas of meadows within the embanked area at the modernized embankment. It is present practically within the entire natural habitat 6440 (alluvial meadows – see the map in Appendix 9 to the EMP), locally in large quantities. Its quantity within a single habitat was estimated at few hundreds of pieces.

Within the Contract implementation range and in a buffer of up to 100 m from the modernized embankment presence of any fungus species under protection, in accordance with the Regulation of the Minister of Environment of 9 October 2014 on protected species of fungi, was not identified.

Protected species of animals

Within the Contract implementation range and in a buffer of up to 100 m from the modernized embankment presence of ca. 40 animal species under protection, in accordance with the Regulation of the Minister of Environment of 16 December 2016 on protected species of animals, was identified, including the following:

- 3 species of invertebrates (3 species of Bumblebees: *Bombus lapidarius*, *B. terrestris* and *B. lucorum*);
- 4 species of amphibians and reptiles (Common frog, Edible frog, Pool frog and Slowworm);
- ca. 30 species of birds (Lapwing, Song thrush, Green woodpecker, Greenfinch, Red-backed shrike, Barn swallow, Blackbird, Raven, Serin, Fieldfare, Willow warbler, Chiffchaff, White wagtail, Corn bunting, Kestrel, Long-tailed tit, Collared dove, Great tit, Blue tit, Skylark, Jay, Godfinch, Starling, Yellowhammer, Hooded crow, House sparrow, Tree sparrow, Chaffinch);
- 2 species of mammals (Mole and Otter).

Location of stands of the aforementioned animal species is presented (based upon data given in the EIA Report) on the map in Appendix 9 to the EMP.

4.8.2. Protected areas

Natura 2000 sites

The eastern part of Contract implementation range (reaching the left side embanked area of the River San) is located within the boundary part of Natura 2000 site Dolina Dolnego Sanu PLH180020, covering the valley of San from Jarosław to the estuary and a small part of the left bank Vistula Valley upstream of the estuary of San (total area– 101.77 km²).

The Natura 2000 site Dolina Dolnego Sanu is entirely located within the Sandomierska Dale. 14 types of natural habitats from Annex I to the *Habitats Directive* were identified in total. The most important are complexes of groupings at channels (willow riparian forests, riparian herb growths and pioneer vegetation on sand blasts and silts). A significant role in the valley is also played by various types of extensively used meadows (6510, 6410, 6440) and – especially in the northern part of the area – by numerous oxbow lakes with rich water flora. Flora and fauna area rich - 19 species from Annex II to the *Habitats Directive* were identified there. The area is also an important ecological corridor – also for ichthyofauna. The San River Basin is covered by a state restitution programme for migrating fish (Vimba bream, Sea trout, Salmon and Atlantic sturgeon).

Placement of the boundaries of the aforementioned Natura 2000 site in reference to the boundaries of the Contract implementation is presented on the map in Appendix 6 to the EMP.

Nature reserves

In the close neighborhood of the modernized embankment there are 2 nature reserves:

- “Wisła pod Zawichostem” nature reserve – covering the Vistula valley over a length of about 17 km (256.65 ha), from the vicinity of the estuary of San to the estuary of Sanna in the area of Annopol (Lubelskie Province) – is located in a distance of about 500 m west from the northern edge of the modernized embankment (km 0+000). The purpose of reserve protection is to maintain hatching stand, feeding sites and resting sites of rare species of water birds specific for the Vistula Valley, especially of the order *Charadriiformes*.
- “Pniów” nature reserve, with the area of 4.15 ha, is located in a distance of about 1.3 km east from the middle part of the embankment. The purpose of reserve protection is to maintain rare species of flora.

Placement of the boundaries of the aforementioned reserves in reference to the boundaries of the Contract implementation is presented on the map in Appendix 6 to the EMP.

4.9. CULTURAL HERITAGE AND MONUMENTS

According to the register of the Provincial Conservator of Monuments for Podkarpackie Province, there are over 20 objects and historical structures subject to legal protection in Gorzyce and Zaleszany Communes.

The nearest objects entered into the register of the Provincial Conservator of Monuments are in the town of Wrzawy, more than 500 m away from the San River embankments. These are:

- parish cemetery (old part) from the turn of the 19th and 20th centuries (Stand no. 2050),
- church and former churchyard cemetery from the 16th century – second half of 19th century (Stand no. 2049/2),
- presbytery from the beginning of the 19th century (Stand no. 2049/1).

In addition, the local municipal monument's register shows parish church and belfry (located on Stand no. 2049/2).

None of the above is located within or in the close proximity to the Contract's area.

4.10. POPULATION AND MATERIAL GOODS

The Works Contract 3D.1 is a linear project, which – within the course - is located in the vicinity of human settlements. The construction site area is located within the limits of the town of Wrzawy in Gorzyce Commune, in the area of Rynek, Czekał Wrzawski, and Nadole suburbs.

There are usually individual, scattered residential and farm buildings.

There are, among others, private lands – farmland and urbanized areas, in the surroundings of Contract's area. There is a social awareness of the location of flood protection structures in the area, as well as the common belief that this Contract is in the general public interest.

The issue of the social aspect of the implemented Contract is described in more details in Land Acquisition and Resettlement Action Plan for Works Contract 3D.1.

4.11. OTHER ESHS ISSUES

Issues associated with ESHS (i.e. related to environmental, social, and health and safety aspects) in Poland are regulated by numerous regulations included in valid legal acts, including e.g.: the Act of 27 April 2001 Environmental Protection Law, the Act of 3 October 2008 on access to information on the environment and its protection, public participation in environmental protection and environmental impact assessments, the Act of 16 April 2004 on the nature protection, the Act of 13 April 2007 on the prevention of environmental damage and its remediation, the Act of 14 December 2012 on waste, the Act of 20 July 1991 on Environmental Protection Inspectorate, the Act of 14 March 1985 on State Sanitary

Inspection, the Act of 7 July 1994 Building Law, the Act of 20 July 2017 Water Law, the Act of 26 June 1974 Employment Code, the Act of 13 April 2007 on State Labour Inspection, the Act of 3 December 2010 on implementation of some regulations of the European Union on equal treatment, the Act of 23 April 1964 Civil Code, and the Act of 6 June 1997 Penal Code.

Legal provisions given in those acts are to e.g.:

- assure the proper condition for abiotic and biotic environment in the area and in vicinity of the engineering investments;
- assure safety and protection of people's health due to implementation of the engineering investments;
- prevent cases of sexual harassment and mobbing at the work site;
- assure proper social setting and conditions of work and payment for the personnel.

Supervision over abiding of the regulations given in the aforementioned legal acts is done by e.g. such numerous institutions and state authorities as the General Directorate for Environmental Protection, Regional Directorates for Environmental Protection, the Environmental Protection Inspectorate, the State Sanitary Inspectorate, the Civil Engineering Supervision Authority (including Provincial and District Civil Engineering Inspectorates), the State Labour Inspectorate, the Ombudsman, the Governmental Proxy for Equal Treatment, the Governmental Proxy for Disabled People, Police, and others.

Nonetheless, considering the high level of ESHS issues and requirements of international institutions funding the OVFM Project (including the World Bank), this Environmental Management Plan and other documents of the Contract contain numerous detailed conditions to assure proper implementation of all valid regulations and to keep high proceeding standards in the aforementioned scope.

5. SUMMARY OF THE ENVIRONMENTAL IMPACT ASSESSMENT

5.1. IMPACT ON LAND SURFACE AND LANDSCAPE

The Contract will involve the modernization (including elevating and expanding) of the existing section of the left flood embankment of the San River in the estuary area. There will be no significant permanent negative changes in the local landscape as a result of the Contract implementation. Only the changes related to the necessary felling of selected trees and removing of selected shrubs from the riverside's area, as well as the from the side beyond embankment, will have a permanent character, however, due to the small scale of that measure, the related impact will not be significant.

The permanent change in the landscape will be caused also by the introduction of one of the main elements of the modernization, i.e. elevated embankment's crest, but it will be virtually unnoticeable for the overall perception of the landscape.

There are no plans to introduce new landscape dominants or other elements that would impact on the landscape. Any changes in the landscape will be of a local nature, limited to the Site area or its immediate surroundings. The Contract implementation will not change the function of the land, and will not affect the way the land is used within the Contract's area or in its surroundings.

The Contract will not significantly impact on land surface and landscape during neither of phases (implementation or operational).

5.2. IMPACT ON LOCAL CLIMATE

The Contract will not cause changing of local climate during the construction works or operational phase. Due to the maintenance of the present riverside's area, conditions for enhancing air humidity shall not be changed, which is strictly connected with the vicinity of surface water and floodplains.

Significant modification of micro-climate parameters is not expected during the operational phase; thus it is not necessary to implement additional minimizing measures. However, some measures shall be implemented during the works (e.g. removal of plant cover) and they may affect such elements of climate as e.g. insolation associated with the presence of vegetation, or air humidity. It shall, however, be an impact of a minor scale.

Reducing the risk of flood will allow avoiding its consequences, such as the formation of the topoclimate due to local changes in water conditions.

The Contract will not significantly impact on climate during neither of phases (implementation or operational).

5.3. IMPACT ON AIR QUALITY

The impact of the Contract on the air will take place only during the construction phase, when works will require use of construction equipment, vehicles and diesel machines, causing emission of gaseous and dusty pollutants, and consequently an increase in pollutant levels in the air. It will be unorganized emission, the range of which will correspond to the area of construction works and routing of the access roads and technological lanes. It will have localized and periodic character, and it will cease completely on completion of works.

The main component of the air pollution generated during emission of exhaust fumes is nitrogen oxide. The quantity and composition of the emitted depend on the type of vehicle and diesel machines (petrol, oil or gas), as well as their age and technical condition.

Size of the emission will be subject to a number of vehicles and diesel machines used for the construction and their working time. The work organization (optimization of equipment utilization, work efficiency, etc.) will be important for the reduction of emission, as well as the organization of site facilities and access roads (optimization of routes, the location of site facilities). Additional possible ways to reduce emission are related to keeping the equipment and vehicles in good technical conditions, compliance with environmental and work safety standards, which allows for avoidance of accidents or breakdowns. To minimize the adverse impact on air it is recommended to sprinkle yards and dirt roads with water on regular bases (reduction of dusting).

As shown in calculations carried out at the stage of compiling the Environmental Assessment Report, the predicted concentration values calculated in the context of potential impact on residential areas (all buildings located near the source of pollution) do not exceed the reference value or allowable level of a substance in the air, averaged for one hour. The allowable average annual concentration was also not exceeded.

During the operational phase, the Contract will not be a source of significant emission of pollutants into the air. The only source of regular emission during the operational phase will be traffic of vehicles with combustion engines on the sections of public roads running on a short section (km 3+130 – 3+445) on the embankment's crest i.e. the provincial road no. 854 (Anopol - Gorzyce), and the district road no. 1089R (provincial road no. 854 - Goczałkowice).

The source of periodic emission will be only the fuel combustion from vehicles on technological lane as part of maintenance and control of the embankment's condition, or work of lawnmowers on embankment's slopes. However, this emission due to the scale will have no significant impact on the quality of air.

The Contract will not significantly impact on air quality during neither of phases (implementation or operational).

5.4. IMPACT ON SOIL AND GROUND

The Contract will have an impact on soil environment only during the construction works, just like in the case of the majority of other environmental components. Execution of proposed construction works will involve the necessity to remove or at least disturb topsoil, or excavate trenches for the embankment's modernization elements. An additional area will also be acquired for the embankment's extension (elevating and expanding), flood route along the foot of embankment on landside at km 0+000-2+925, as well as for technological lanes (lanes will be demolished on completion of works and the area will be reinstated to its original condition). Apart from the above, there will be no interference in the soil layer. No new structures or foundations will be provided.

Soil created as a result of the construction works will be utilized on the Site – stored in piles on the side beyond the embankment and then used for site leveling.

While maintaining the standards of the environmental protection and H&S there should not be a significant impact and deterioration of the quality of soil due to the Contract implementation.

The proposed anti-filtration membrane will have a direct impact on the soil structure (the Contract envisages a division into three main sections into the context of anti-filtration solution). The membrane will prevent seepage of flood water through the embankment during raised water periods, but it can also to a certain extent slow down development of soil forming process by limiting the flow of water and air.

No mass movements (landslides, settlements) or other negative geodynamic processes related e.g. to tectonic of the analyzed area were found nor are not foreseen in the ground substrate at the site.

The Contract implementation will not cause any changes in shape or use of the land. Majority of open space farmland, meadows surrounding river will retain their current usage on completion of the Contract. Inconsiderable acquisition of the land and interference in a soil environment will only take place in the strip directly adjacent to the existing embankment (as described in the *Land Acquisition and Resettlement Action Plan* [LA&RAP] for the Contract in question).

The Contract will not significantly impact on soil and ground during neither of phases (implementation or operational).

5.5. IMPACT ON SURFACE WATERS

The Contract implementation will not involve works on the riverbed of San River or other watercourses, or water reservoirs, therefore, no direct significant impact on surface water is expected. The impact may only result from the emergency situation involving accidental spills of fuel or other harmful substance (oil or grease), or from badly organized water and sewage

management or improper collection and storage of waste, which could cause the release of pollutants into surface water.

The quantities and the extent of the adverse impact of such events will be determined by the quantity and type of the substance involved. Works will be carried out at a safe distance from the main watercourses, therefore the risk of a threat to the running water during the construction phase is considered to be negligible.

Lack of smaller watercourses (local tributaries of San River and of Wisłoka River) which would cross the Site increasing the risk of adverse impact on surface water during the construction phase is a favorable condition.

The Contract will not involve the direct discharge of sewage into surface water, it will not cause a disturbance in the normal flow of water in nearby rivers, or change in the morphology of watercourses or still water reservoirs.

The Contract will not jeopardize the achievement of environmental goals set for surface water bodies as part of the update "Water Management Plan for Vistula River Basin".

At the phase of operation, the Contract will not change the hydrological regime of the San River or other rivers will not disturb the free flow of water in normal weather conditions. Normal operation of the embankments outside of the extreme weather conditions or raised water levels, will not impact on surface water in terms of quantity or quality.

The Contract will not significantly impact on surface water during neither of phases (implementation or operational).

5.6. IMPACT ON GROUNDWATER

The Contract implementation will not impact on quantities and quality of groundwater bodies (BGW). The Contract will not jeopardize the achievement of environmental objectives specified for groundwater bodies as part of the updated "Water Management Plan for Vistula River Basin". The modernization of the existing flood embankment will not involve any use of groundwater or discharge of sewage to the environment in the work area.

No significant adverse effect on the circulation or quality of groundwater is expected at the stage of the construction works. Water will be used for the works and for the site facilities and will be delivered to the Site in watercarts.

The risk of emission of pollutants to water and soil environment during the construction phase, can occur only, when the Contractor fails to meet standard environmental protection requirements applied to the construction works, e.g. due to inappropriate storage of waste, inappropriate sewage management at site facilities, use of vehicles and construction machines and equipment against their purpose or outside of designated areas (e.g. traffic of vehicles outside of designated roads, parking lots or maneuvering site), or as a result of exceptional events, such as equipment failure, road accidents, adverse weather conditions or

natural disasters. Lack of sufficient control of the equipment's condition may be the indirect cause of threat to water and soil environment. It could increase the risk of emission of pollutants to water and soil environment, in form of leakage of harmful liquid or semi-liquid substance (fuel, oil, grease) from vehicles and construction equipment and their infiltration into the soil or surface drainage. The weather conditions in which the construction works will be carried out will be of significant importance in case of water usage.

It is not planned to mechanically lower the groundwater level or carry out works that could significantly affect water conditions, e.g. through a significant change of infiltration conditions. The treatment that could affect conditions of water circulation can be, for example, sectional removal of humus layer, which is one of the factors affecting infiltration of rainwater, but the impact on the total hydrogeological conditions will be minimal.

Compliance with environmental protection and H&S standards will be very important, for example due to the shallow table of the main water-bearing level, lack of isolating layer, and the important role of the Quaternary level in supply of water to northern part of Podkarpackie region (Quaternary level in San River Valley and section of Vistula River Valley above the Estuary of San River, as well as several smaller rivers, were designated as Main Groundwater Reservoir no. 425 Dębica – Stalowa Wola – Rzeszów).

At the operational phase, the Contract will have no adverse impact on groundwater. The influence of the groundwater circulation in the immediate vicinity of the embankment will have the presence of a sealed anti-filtration membrane. The main task of the anti-filtration membrane will be to prevent the processes of suffosion during river floods. The membrane will not intersect the thill of aquifer of the first level, so it will not break its continuity, the natural direction of groundwater flow and the drainage character of the San River will be retained. Circulation of water will not change in relation to current condition. The main base for drainage of Quaternary level water will be San and Vistula Rivers. The function of the flood embankment, including the necessary maintenance works, will not emission of pollutants to soil or groundwater, nor will pose any other threat to the soil and water environment.

The Contract will not significantly impact on groundwater during neither of phases (implementation or operational).

5.7. IMPACT ON ACOUSTIC CLIMATE

The majority of the existing embankments of the San River which are proposed for the upgrade run in the vicinity of open fields of farmland, used mainly as meadows or pastures. The areas which are subject to acoustic protection (mainly individual, scattered residential and farm buildings) are located only in few areas along short sections of the embankment (Rynek, Czekaj Wrzawski, Zadole suburbs in the town of Wrzawy).

The nearest residential development (Zadole) is located approx. 5 m away from the foot of the embankment (property driveways have direct access to the top of the embankment's crest).

Acoustic impact of the Contract may occur only during the construction phase, and it will be caused by construction vehicles and equipment. It will have periodic, direct character (in the vicinity of residential buildings, as well as other buildings subject to legal acoustic protection, construction works, and transport, will only be carried out during the daytime), limited to the construction site, its immediate vicinity, and roads used for transport. It will have no effect on the health of the residents and of land users; however, it may contribute to disturbance of animals in nearby habitats. There will be no permanent adverse impact that could be shaping the acoustic climate. The acoustic inconvenience will cease with the completion of works.

The factors which determine the size and extent of impact on the acoustic climate include types of used equipment and vehicles, which are the source of the noise, as well as the work's organization and the layout and preparation of the construction site (routing of access roads, the location of site facilities, etc.). Emission of the noise during the construction phase will be closely related to the area of currently on-going works (current work front). The main concentration of the source of noise will relocate as the works are progressing. Thus, the noise emission at the construction phase will be limited both in time (in the context of the duration of construction works and daily time of works) and in space.

The Contract will not significantly impact on acoustic climate during neither of phases (implementation or operational).

5.8. IMPACT ON BIOTIC NATURE

5.8.1. Protected natural habitats and species

Natural habitats from Annex I to the *Habitats Directive*

Implementation of the Contract shall result in insignificant impact on 3 types of natural habitats occurring within its area, as described in chapter 4.8.1. Those are as follows:

- 6440 Alluvial meadows (*Cnidion dubii*)

Implementation of the Contract requires acquisition of about 0.14 ha of habitat no. 6440, which is about 0.18% of the habitat area within Natura 2000 site Dolina Dolnego Sanu.

- 6510 Lowland hay meadows (*Arrhenatherion elatioris*)

Implementation of the Contract requires acquisition of about 0.15 ha of habitat no. 6510, which is about 0.01% of the habitat area within Natura 2000 site Dolina Dolnego Sanu.

- 91E0 Riparian mixed forests of willow, poplar, alder and ash tree (*Salicetum albo-fragilis*, *Populetum albae*, *Alnenion glutinoso-incanae*)

Implementation of the Contract requires acquisition of about 0.05 ha of habitat no. 91E0, which is about 0.005% of the habitat area within Natura 2000 site Dolina Dolnego Sanu.

Location of collisions between the planned Contract and patches of aforementioned natural habitats is given on the map in Appendix 9 to the EMP and described in chapter 4.8.1. Due to the small area of habitat parts requiring acquisition and considering significant resources within habitats placed beyond the range of contract impact (e.g. due to implementation of mitigation measures given in Appendix 1 to the EMP), the summarized impact of planned works on the status of resources within the aforementioned habitat types shall be determined as insignificant – both: in regional scale, as well as in local scale.

Protected species of plants and fungi

Implementation of the Contract shall result in insignificant adverse impact on 1 protected plant species occurring within its area, as described in chapter 4.8.1. It is:

- Mouse garlic (*Allium angulosum*)

Implementation of the Contract requires acquisition of about 0.14 ha of habitat area for that plant species (present in that area within patches of alluvial meadows, as described in the previous item), which is about 0.18% of the habitat area within Natura 2000 site Dolina Dolnego Sanu.

Location of collisions between the planned Contract and patches of habitats for the aforementioned plant species is given on the map in Appendix 9 to the EMP and described in chapter 4.8.1 (in the description of the natural habitat 6440 alluvial meadows). In conformity with a justification provided in the environmental decision, despite acquiring a small part of habitat for that species, its local gene pool shall not be significantly reduced due to significant resources of mouse Garlic within other patches of habitat 6440 (in some of them that species occurs in large quantities). As a consequence, the RDOŚ did not oblige in the environmental decision to relocate specimens of that species due to implementation of the Contract, as it considered the forecasted actions as insignificant.

Protected species of animals

Information on the occurrence of protected animal species within the Contract implementation range and within the buffer zone (in a distance of up to 100 m) is presented in chapter 4.8.1. Impact of the Contract on particular groups of identified animals is described below.

Invertebrates

Implementation of the planned Contract shall result in a temporary removal of stands for 2 species of Bumblebees (*Bombus lapidarius* and *B. terrestris*) identified within the Contract implementation boundaries – see: the map in Appendix 9 to the EMP. Due to the fact that those are common and widely spread species in Poland, and there are many stands available in a close and in a far distance from the Contract, the temporary loss of feeding habitat on the embankment to be modernized does not form any significant threat to the population – even on a local scale. After completing the construction works, due to the development of plants within the top-soiled embankment, conditions favorable for the occurrence of insects shall be restored in time, and those stands will be available for re-habitation.

Amphibians and reptiles

Amphibians and reptiles were not identified within the Contract implementation range, 4 species of that group of animals were however identified in its close vicinity (see: the map in Appendix 9 to the EMP and description in chapter 4.8.1). The planned construction works may pose risk of restraining and death of amphibians or reptiles in excavations within the construction site. A potential threat is also the traffic of vehicles and machines, which may deteriorate occurrence and breeding conditions in vicinity of the Contract or – in a direct way – it may pose threat to lives of specimens. Incidental cases of polluting the water and ground environment may also be a risk for that group of animals. All the above impact is of potential nature and performing the works in accordance with the conditions determined in Appendix 1 to the EMP (also referred to in chapter 6.8) shall significantly reduce the risk of its occurrence.

Birds

The occurrence of about 30 species of protected birds was identified in vicinity of the Contract implementation range, beyond its boundaries (see: the map in Appendix 9 to the EMP and description in chapter 4.8.1). Those species may be exposed to potential forms of adverse impact during the construction works, and those are as follows:

- destruction of potential breeding grounds (groups of trees and shrubs as well as patches of herb growths) and feeding grounds – this impact shall not cause a significant impact

on the populations of individual species due to the availability of other areas of similar nature in the surroundings of the construction site;

- increased penetration of the area by humans as well as intense vehicle and construction machine traffic (scaring and disturbing of specimens) – this impact is local, short-term and limited to the period and time of works performance.

Considering the fact that the birds identified there are mostly common species widely spread in Poland, and taking into account the temporary and transient character of potential impact only, the impact of the Contract on populations of protected species of birds shall be determined as insignificant.

Mammals

In case of two protected species of mammals identified in vicinity of the Contract implementation range (see: the map in Appendix 9 to the EMP and description in chapter 4.8.1), the planned construction works pose hazards analogous to those mentioned in the case of amphibians and reptiles (see above); mitigation measures leading to a significant reduction of the unfavorable effects of this impact are analogical.

To sum up, due to the relatively small number of species of protected animals identified within the Contract implementation reach and in its vicinity, and also due to the absence of rare and endangered species among them, the impacts on protected species of fauna, as described above, shall be assessed as not affecting their populations adversely and significantly, even in local scale. Performance of the works under environmental supervision and in accordance with the conditions determined in Appendix 1 to the EMP (see: e.g. summary of conditions provided in chapter 6.8) shall additionally limit the risk of adverse impact occurrence, also in case of other, priorly not identified, species of animals.

5.8.2. Protected areas

3 protected areas (1 Natura 2000 site and 2 nature reserves) are present within the Contract implementation area and in its vicinity, as described in chapter 4.8.2 and presented on the map in Appendix 6 to the EMP.

Natura 2000 sites

The implementation of the planned Contract (both at the construction and operation stages) does not cause a significant adverse impact on Natura 2000 sites (lack of a significant adverse impact on Natura 2000 site integrity or network coherence).

In the scope relating to the impact on the integrity of Natura 2000 sites, the implementation of the Contract performed in the manner described in this EMP (i.e. taking into account mitigation measures described in Appendix 1 to the EMP):

- does not threaten the occurrence of significant adverse impact in relation to any type of natural habitats or any species of protected animals within the boundaries of Natura 2000 sites;
- does not affect the preservation of ecological structures and processes necessary for the durability and proper functioning of natural habitats and species populations constituting objects of protection of Natura 2000 sites.

In the scope relating to the impact on the coherence of the Natura 2000 network, the implementation of the Contract performed in the manner described in this EMP:

- does not threaten the occurrence of the decline in the completeness of natural habitat and species resources within the Natura 2000 network, neither in the country nor in the biogeographical region;
- does not cause any changes that may result in deterioration of functional connectivity between Natura 2000 sites.

Other protected areas

The implementation of the planned Contract (both at the construction and operation stages) does not cause a significant adverse impact on other protected areas (no significant adverse impacts in relation to the objectives and principles of protection of the areas in question established in the regulations applicable to them).

5.9. IMPACT ON CULTURAL HERITAGE AND MONUMENTS

As demonstrated by the study undertaken at the environmental assessment stage, during the Contract implementation phase and even more so at the operational phase, there will be no threat to sites and objects of historic value. The Site or the objects located on the Site or in its vicinity are not considered to be monuments within the meaning of the Act of 23 July 2003 on protection of heritage and care for heritage and are not subject to conservation protection. It is not anticipated for the Contract to have any adverse impact on historic objects located in the vicinity of the Site. The nearest monuments, entered into the register of the Provincial Conservator of Monuments (two cemeteries, church, and presbytery), are over 500 m away from the embankment and will not require the use of any protection, or undertaking of any preventive measures to protect against effects of the Contract implementation.

The Contract will not significantly impact on cultural heritage and monuments, during neither of phases (implementation or operational).

5.10. IMPACT ON POPULATION AND MATERIAL GOODS

Social impact

The basic aim of the Contract implementation is to ensure the protection of human health and life in the event of a flood, as well as improving the mental well-being of residents of the nearby areas. The Odra-Vistula Flood Management Project is a nationwide Project implemented with the support of international financing institutions. It is one of a number of flood protection projects prepared and implemented in response to floods with catastrophic consequences that have occurred in Poland in the last twenty years (one of them was a flood in May 2010, which caused severe physical damage in the valley of Central Vistula River and some of its tributaries, e.g. within the boundaries of Podkarpackie Province). In the light of such events the Contract implementation is economically justified and has widespread social acceptance of local residents and authorities, owners and users of land where and in the vicinity of which the construction works are or will be carried out.

Nevertheless, one should take into account the risk of social conflict, the source of which will not be Project itself and the intended goal of increasing flood safety but the inconvenience mainly for the local residents, occurring during the implementation phase and related to the adverse impact of the construction works and transport (noise, vibration, air pollution). Reduction of the inconvenience to people is one of the aims of implementation of the EMP, the achievement of which it will be one of the priorities during the construction phase. In general, the overriding aim of the Project, which is to reduce the risk of flooding in the Vistula River catchment area, should compensate for any difficult to eliminate inconvenience which may occur during the construction phase.

Assuming that the requirements of the Environmental Decision and the Environmental Management Plan will be met, the Contract will not cause significant social impact during the implementation phase, while during the operational phase the effect will be positive.

Impact on material goods

In addition to the protection of human health and life, the Contract is intended to protect material goods by reducing the risk of flooding.

Most of the residential and farm buildings in the town, in the region of which the embankment runs, are located at a considerable distance from the Site. There are only a few residential buildings in the town of Wrzawy, which are close to the embankment.

Majority of the construction works will be carried out at a considerable distance from the residential areas. At no stage and in none of the sections of the construction works, there will be a danger to any material goods. The Contractor will be responsible for planning, organizing and conducting the construction works in a way that such a risk does not occur. The Contractor will be also responsible for any damage to the cubature object, buildings,

roads, elements of technical facilities (ditches, culverts, transmission networks), as well as information boards, historic objects, etc., caused by the Contractor or its subcontractors during the execution of works. That liability shall relate to an obligation of repairing any damage at own expense. On completion of the construction works, as a result of putting the embankment into operation, the threat to the tangible assets of nearby settlements will be significantly reduced.

The implementation of the Contract will have a positive impact on the residents' sense of security – in the context of flood protection and protection of the surrounding farms, residential areas or farmland against the flood water, which could cause serious, sometimes irreversible loss and damage to tangible assets, if there was no Contract implementation.

Assuming that the requirements of Environmental Decision and the Environmental Management Plan will be met, the Contract will not significantly impact on tangible assets during the implementation phase, while during the operational phase, the effect will be positive thanks to the increased flood safety.

The issues related to land purchase or changing land use, as well as possible problems connected with the influence of implementation of the Contract on temporary acquisition of areas and their surroundings, are discussed in detail in the *Land Acquisition and Resettlement Action Plan (LA&RAP)* for the Contract in question.

5.11. HUMAN HEALTH AND SAFETY

The implementation of the planned Contract may be related to the following impact on human health and safety:

- Increase of air pollution emission

At the construction stage, the pollution level of atmospheric air may locally and periodically increase in connection with using vehicles and construction machinery (emission of exhaust fumes). Since this impact is dispersed, local and not very intense, and owing to the distance between the greater part of the construction site and the nearest buildings, the impact should not cause significant effects in relation to the health of the Contractor's staff or residents from the vicinity (see also chapter 5.3).

- Increased noise emission

At the construction stage, the noise level related to performing the works and using vehicles and construction machinery may locally and periodically increase. Taking into account the circumstances discussed in chapter 5.7, this phenomenon should not cause significant effects in relation to the health of the Contractor's staff or residents living in vicinity.

- Petroleum derivative pollution hazard

Bad organization of works or failure to observe appropriate standards could lead to water and soil pollution with fuels at the construction stage, which could constitute a direct or indirect hazard to the health of the Contractor's staff or residents from the vicinity. To prevent such hazards, Appendix 1 to the EMP introduces a number of conditions aimed at limiting the risk of petroleum derivative pollution at the construction stage (see also chapter 6.11).

- The possibility of a flood embankment failure or catastrophe at the operational stage

The issues related to the potential influence of a flood embankment breakdown or catastrophe on the health and safety of the residents of localities located beyond the embanked area are discussed in chapter 5.12.

5.12. EXTRAORDINARY HAZARDS (CRITICAL AND EMERGENCY SITUATIONS)

The implementation of the planned Contract is related to the possibility of occurrence of the following critical or emergency situations which could cause extraordinary environmental hazards:

- Uncontrolled emission (leak) of petroleum derivatives

An emergency situation may take place at the construction stage, resulting in a leak of petroleum derivatives from vehicles, construction machinery, tanks, etc. polluting surface waters or the earth surface (including soil). The risk and effects of this type of events are limited by appropriate organization of the construction site backyard, care for the appropriate technical condition of vehicles, machines and equipment used on the construction site, as well as, if those events do occur, strict observance of procedures concerning emergency and critical situations, described in the EMP.

- Fire or explosion of flammable substances

An emergency situation may take place at the construction stage in relation to a fire (e.g. as a result of an equipment breakdown, staff negligence, an explosion of flammable substances, a lightning strike, etc.). The risk and effects of this type of events are limited by strict observance of H&S provisions, appropriate organization of the construction site backyard, care for the appropriate technical condition of vehicles, machines and equipment used on the construction site as well as, if those events do occur, strict observance of procedures concerning emergency and critical situations, described in the EMP.

- Finding unexploded bombs or unfired rounds

Hazardous materials of military origin, such as unexploded bombs or unfired rounds, may be found at the construction stage. Potential hazards related to this type of situations are limited by ensuring sapper supervision over the works on a running basis as well as, if such materials are found, strict observance of procedures concerning situations related to the presence of unexploded bombs or unfired rounds, described in the EMP.

- Sudden freshets, flood

A sudden water level increase in the river on the construction site or a flood may take place at the construction stage, threatening the staff's health and life and causing material losses on the construction site. In order to minimize the possible effects of this type of events, the Contractor shall take into account the flooding risk when organizing the construction site backyard and the remaining part of the works area as well as develop a *Construction Site Flood Management Plan* and strictly observe the conditions contained in it.

- The possibility of a flood embankment failure at the operational stage

The operation of a flood embankment is related to a potential risk of water spilling above the embankment crest or an embankment break, as a result of occurrence of a strong and long-term freshet of the river water causing long-term flooding of terrains within the embanked area or an exceptional increase of water level on terrains within the embanked area. The occurrence risk of this type of catastrophes is limited by specific design and technical solutions applied in the modernized embankment, in accordance with applicable guidelines for the designed hydraulic structures (i.a. specified dimensions of a flood embankment, proper selection of material for the embankment construction, application of required membranes, works technology considering the requirement of satisfactory compaction of the embankment, etc.). Given the abovementioned protections and the fact that the embankment design takes into account the hydrological data characterizing the scale of flows in the rivers in this area during calculation periods, one can state that the discussed hazard is very much of a potential nature and its probability of occurrence is slight.

5.13. OTHER HAZARS RELATED TO ESHS

Implementation of the Contract may be associated with numerous effects related to ESHS issues (i.e. environmental, social, and health and safety aspects). Except for the issues discussed previously in chapters 5.1-5.12, the following additional issues or hazards associated with that subject may occur during implementation of the Contract, e.g.:

- accidents and near misses including participation of people associated with implementation of the Contract and/or outsiders;
- cases of such unacceptable behavior at work sites as sexual harassment or mobbing;
- cases of intended or unintended violation of labour law, including ones associated with social setting and conditions of labour and payment for the personnel;
- cases of sexually transmitted infections, including HIV/AIDS, resulting from the lack of knowledge on prevention and disease control in case of such infections.

Due to significant social effects of the aforementioned hazards, this Environmental Management Plan and other documents of the Contract contain numerous detailed conditions to prevent and effectively react in case of such events' occurrence, and to assure proper implementation of all regulations under the state law valid in that scope (see: e.g. chapter 6.13).

5.14. CUMULATIVE IMPACTS

Modernization of the left embankment of the River San shall locally neighbor another Contract planned for implementation within the Vistula River Basin under the OVFM Project, and namely the Contract titled: *“Vistula River Stage 2 - Expansion of the right embankment of the Vistula River over a length of 13.959 km, the right embankment of the San River over a length of 2.193 km and the left embankment of the Łęg River over a length of 0.112 km, within the communes of Gorzyce and Radomyśl nad Sanem, the Podkarpackie Province”* (Contract 3B.2 *“Flood protection Tarnobrzeg”*). That Contract is planned for implementation in the years 2018-2021. Both of the aforementioned contracts partially neighbor with each other (on opposite banks of the River San, in a distance of about 0.5 km from each other), and they even partially join each other (the northern end of the modernized right Vistula embankment [under Contract 3B.2] joins the northern end of the modernized left embankment of the River San [under Contract 3D.1]). As informed in e.g. Environmental Management Plans and in environmental decisions issued for both of the aforementioned Contracts, none of them is associated with the occurrence of significant emission or other significant impact on the environment, scale of which would cause the possibility of occurrence of significant threat to the abiotic or biotic environment, even in case of simultaneous performance of the construction works on opposite banks of the River San or in case of simultaneous performance of the construction works at the joint of the right Vistula embankment and the left San embankment. The analysis of mitigation measures described in the EMPs for both Contracts proves that in case of performing the construction works in accordance with conditions given therein, there is no risk of accumulated significant adverse impact, even at simultaneous implementation of both investments in adjoining locations.

6. DESCRIPTION OF MITIGATION MEASURES

In order to limit the adverse environmental impact of the planned Contract, Appendix 1 to the EMP defines a set of mitigation measures binding on the Contractor. Those measures were developed on the basis of the conditions contained in the Environmental Decision, which were supplemented with additional conditions determined at the EMP preparation stage. A list of main categories of the mitigation measures is presented below, dividing them into the environment components discussed in chapters 4 and 5 of the EMP.

6.1. LAND SURFACE AND LANDSCAPE

The primary forms of the adverse impact of the planned Contract on land surface and landscape are presented in chapter 5.1.

To limit that impact, Appendix 1 to the EMP introduces mitigation measures aimed i.a. at:

- limiting the impact related to land acquisition on the status of land surface and landscape (i.a. items 5, 6, 22, 28, 30, 54, 55, 56, 71, 97, 98, 99);
- limiting the landscape value losses related to tree and shrub felling (i.a. items 52, 93).

6.2. CLIMATE

Due to the lack of adverse impact on the climate (see: the description in chapter 5.2), it was considered as unnecessary to introduce mitigation measures for that component of the environment. Climate protection is indirectly related to a part of the mitigation measures listed in chapter 6.3 concerning protection of air against pollution.

6.3. AIR QUALITY

The primary forms of the adverse impact of the planned Contract on air quality are presented in chapter 5.3.

To limit that impact, Appendix 1 to the EMP introduces mitigation measures aimed i.a. at:

- limiting air pollution with exhaust fumes (i.a. items 76, 78, 80);
- limiting air pollution due to emission of dust (i.a. items 40, 74, 75).

6.4. SOIL AND GROUND

The primary forms of the adverse impact of the planned Contract on soils and grounds are presented in chapter 5.4.

To limit that impact, Appendix 1 to the EMP introduces mitigation measures aimed i.a. at:

- limiting the soil resource losses related to land acquisition (i.a. items 5, 6, 22, 28, 30, 45, 46, 54, 55, 71, 97, 98, 99);
- limiting the topsoil layer loss (i.a. items 16, 32, 33);

- limiting the ground pollution risk at the works stage (i.a. items 9, 34, 35, 36, 37, 38, 40, 41, 43, 44, 76, 79, 81, 82, 83).

6.5. SURFACE WATERS

The primary forms of the adverse impact of the planned Contract on surface waters are presented in chapter 5.5.

To limit that impact, Appendix 1 to the EMP introduces mitigation measures aimed i.a. at:

- limiting the water pollution risk at the works stage (i.a. items 34, 35, 36, 37, 38, 40, 41, 42, 43, 44, 76, 79, 81, 82, 83, 97);
- limiting the adverse impact on the biological elements of water quality (i.a. items 6, 10, 12, 29, 56, 73, 89).

6.6. GROUNDWATER

Due to the fact that potential impact of the Contract on groundwater (as described in chapter 5.6) essentially overlaps the impact on the ground environment and on the surface water (as described in chapters 5.4 and 5.5), it was stated that it is not necessary to implement additional mitigation measures in that scope, other than the mitigation measures for the ground environment (see the description in chapter 6.4) and the mitigation measures for the surface water (see the description in chapter 6.6).

6.7. ACOUSTIC CLIMATE

The primary forms of the adverse impact of the planned Contract on acoustic climate are presented in chapter 5.7.

To limit that impact, Appendix 1 to the EMP introduces mitigation measures aimed at:

- limiting the noise generated at the works stage and limiting the impact of that noise on acoustically protected areas (i.a. items 15, 29, 67, 68, 72, 80).

6.8. BIOTIC NATURE

The primary forms of the adverse impact of the planned Contract on biotic nature resources are presented in chapter 5.8.

To limit that impact, Appendix 1 to the EMP introduces mitigation measures aimed at:

- limiting the natural resource losses related to land acquisition, including acquisition of natural habitats and habitats of plants and animals (i.a. items 5, 6, 7, 10, 12, 22, 28, 29, 30, 45, 57, 66, 71, 89, 92, 93, 94, 97, 98, 99);
- limiting the natural resource losses related to the felling of trees and shrubs (i.a. items 52, 53, 66, 93);

- eliminating or limiting the natural resource losses related to accidental deaths of specimens of protected species in the area of works (i.a. items 7, 10, 12, 13, 16, 53, 61, 62, 63, 64, 89, 91, 92);
- eliminating or limiting the impact of works on the breeding results and migration conditions of protected animal species (i.a. items 7, 10, 12, 13, 16, 45, 55, 56, 57, 89, 91);
- limiting the impact of works on the status of trees and shrubs not anticipated for felling (i.a. items 14, 31, 47, 59, 60, 93);
- eliminating or limiting the impact of works on the spreading of invasive plant species of foreign origin (i.a. items 11, 58, 94, 97, 98, 100).

6.9. CULTURAL HERITAGE AND MONUMENTS

In accordance with the description given in chapter 5.9, implementation of the Contract does not cause any adverse impact on known cultural resources. In order to eliminate the potential possibility of adverse impact on cultural resources not discovered yet, an obligation to assure archaeological supervision (related to chance finds) during the earthworks was implemented in Appendix 1 to the EMP (item 87).

6.10. POPULATION AND MATERIAL GOODS

In accordance with the information provided in chapter 5.10, the issues related to land purchase or changing the land use, as well as possible problems connected with the impact of the Contract implementation on temporary acquisition of areas and their surroundings, are discussed in details in the *Land Acquisition and Resettlement Action Plan (LA&RAP)* for the Contract in question.

The potential adverse impact of the performance on the status of material goods (buildings, roads, infrastructure elements, etc.) present within the construction site and in its vicinity was limited due to the implementation of obligatory immediate repair of any damage to the aforementioned objects caused due to the performance, on the Contractor's cost (items 46 and 84 in Appendix 1 to the EMP).

6.11. HUMAN HEALTH AND SAFETY

The primary forms of the adverse impact of the planned Contract on human health and safety are presented in chapters 5.11 and 5.12.

To limit that impact, Appendix 1 to the EMP introduces mitigation measures aimed at:

- limiting the impact of the planned Contract on the sanitary status of atmospheric air (listed in chapter 6.3);

- limiting the impact of the planned Contract on the acoustic climate (listed in chapter 6.7);
- eliminating or limiting the risk of chemical pollution of water and ground at the works stage (listed in chapter 6.4 and 6.5);
- ensuring safety on the construction site and in its surroundings (i.a. items 23, 24, 25, 26, 27, 36, 39, 41, 43, 49, 50, 51, 69, 70, 72, 76, 77, 78, 79, 81, 82, 83, 84 and other listed in chapter 6.12 and 6.13);
- preventing HIV/AIDS spread (i.a. item 3).

6.12. EXTRAORDINARY HAZARDS (CRITICAL AND EMERGENCY SITUATIONS)

The primary types of extraordinary hazards (with characteristics of a critical situation) that may potentially occur in connection with the Contract implementation are presented in chapter 5.12.

In case of a crisis situation (other than flooding), e.g.: fire, accident, major failure, etc., the Contractor is obliged to take the following actions:

- a) immediately notify appropriate emergency services:
 - Alarm phone number (all services) – 112;
 - Ambulance service – 999;
 - Fire brigade – 998;
 - Police – 997.
- b) by the time appropriate emergency services arrive, carry out necessary activities to lower the risk of loss to personnel, property, and the environment (agreed with appropriate services as far as possible);
- c) notify the Engineer and the Investor;
- d) after arrival of appropriate emergency services, strictly follow their recommendations and instructions.

In case of a flood risk the Contractor is obliged to act i.a. in accordance with the conditions given in item. 19 in Appendix 1 to the EMP.

To limit the possible effects of this type of events, Appendix 1 to the EMP introduces mitigation measures aimed i.a. at:

- eliminating or limiting the risk of chemical pollution of water and ground at the works stage (listed in chapter 6.4 and 6.5);
- assuring safety in case of fire (i.a. item 17);
- assuring safety in case of identifying unexploded shells and ordnance (i.a. items 17, 85, 86);

- assuring safety in case of flood threat (i.a. item 19);
- ensuring appropriate response in situations of extraordinary hazards (i.a. items 17, 19, 21, 26).

6.13. OTHER HAZARDS RELATED TO ESHS

Examples of forms of additional hazards associated with ESHS issues (other than the ones discussed previously in chapters 5.1-5.12) are presented in chapter 5.13.

In order to prevent hazards of that type Appendix 1 to the EMP contains – except for the measures listed in chapters 6.1-6.12 – additional mitigation measures to e.g.:

- prevent accidents and near misses on the construction site and in other locations associated with implementation of the Contract (i.a. items 102, 103, 104, 109 and other listed in chapter 6.11 and 6.12);
- combating such unacceptable behavior at work site as cases of sexual harassment or mobbing (i.a. items 105, 106, 109);
- assurance of proper social setting and labour and payment conditions, in accordance with the law, for the personnel engaged in implementation of the Contract (i.a. items 107, 108, 109);
- assurance of proper procedures for ongoing provision of information on issues and hazards associated with the aforementioned subject (i.a. item 109).

6.14. REQUIREMENTS FOR IMPLEMENTATION OF ACTION PLANS IN THE CONSTRUCTION PHASE

In order to ensure appropriate organization of works performance and implement correctly the conditions determined in Appendix 1 and 2 to the Environmental Management Plan, the Contractor is obliged to develop the following documents, obtain the Engineer's approval for them and then implement them:

- 1) A construction site organization design, which should contain i.a. elements listed in item 21 in Appendix 1 to the EMP;
- 2) A waste management plan, which should contain i.a. elements listed in item 20 in Appendix 1 to the EMP;
- 3) Quality assurance plans for individual categories of works and other types of the Contractor's measures (as needed, including as required by the Engineer), which should contain i.a. elements listed in item 18 in Appendix 1 to the EMP;
- 4) A construction site flood management plan, which should contain i.a. elements listed in item 19 in Appendix 1 to the EMP;

- 5) A Health and Safety Protection Plan, which should contain i.a. elements listed in item 17 in Appendix 1 to the EMP.

When developing the abovementioned documents, the Contractor shall take into account relevant Operational Policies and Bank Procedures of the World Bank¹ concerning health protection, environmental protection, and safety rules.

¹<http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/0,,contentMDK:20120722~menuPK:41392~pagePK:41367~piPK:51533~theSitePK:40941,00.html>

7. DESCRIPTION OF MONITORING MEASURES

Appendix 2 to the EMP defines a set of monitoring measures binding on the Contractor. Those measures were developed on the basis of the conditions contained in the Environmental Decision, and they were supplemented with additional conditions determined at the EMP preparation stage.

The monitoring measures listed in Appendix 2 to the EMP belong to one category:

- monitoring of implementation of the mitigation measures listed in Appendix 1 to the EMP (item 1-109 in Appendix 2 to the EMP).

8. PUBLIC CONSULTATIONS

8.1. PUBLIC CONSULTATIONS ON EIA (2015-2016)

As part of the administrative proceedings carried out, at the stage of Environmental Impact Assessment, the public consultation took place from 9 to 30 August and from 22 September to 13 October 2016, in reference to the Article 79 of the Act of 3 October 2008 on access to information on the environment and its protection, public participation in environmental protection and environmental impact assessments.

The Regional Director for Environment Protection in Rzeszów issued notices on 1 August 2016 (Ref. no.: WOOŚ.4233.2.2015.KR.49) and on 16 September 2016 (Ref. no.: WOOŚ.4233.2.2015.KR.57) giving information to the public on submitting, together with Environmental Impact, an application for issue of the Environmental Decision, on RDOŚ imposed an obligation to perform the Environmental Impact Assessment, on initiating of the procedure, on subject of the decision, on the unit relevant for the issuance of the decision and on the unit relevant for the issuance of opinion on implementation of the Contract, on the possibility of acknowledging case documentation and the place where it will be made available, on possibility and the date for submitting comments, and on the unit competent to consider comments. The notices were placed on the notice board and on the website of the Regional Directorate for Environment Protection in Rzeszów, on the notice board and on the website of the former Podkarpackie Board of Amelioration and Hydraulic Structures in Rzeszów (currently – the Regional Water Management Authority in Rzeszów), on site near the Contract implementation area, and also on the notice boards and websites of the Community office of Gorzyce and of the Community Office of Zaleszany.

During two-times announcement of public participation in environmental impact assessment, no comments or motions related to the Contract were submitted to the Regional Directorate for the Environment Protection in Rzeszów.

The parties were informed of the possibility of comment on the evidence collected, in accordance with Article 10 of the Administrative Procedure Code, in the way of the announcement of the Regional Director for the Environment Protection in Rzeszów dated 28 October 2016 (Ref. no.: WOOŚ.4233.2.2015.KR.65) before issuance of the Environmental Decision. None of the parties took advantage of the opportunity to comment on the collected evidence, on the base of which the Environmental Decision was to be issued.

8.2. PUBLIC CONSULTATIONS ON ENVIRONMENTAL AND SOCIAL MANAGEMENT FRAMEWORK (2015)

After the development of a draft of “Environmental and Social Management Framework” (ESMF) on 19 February 2015, its digital version was publically available on the website of former the Podkarpackie Board of Amelioration and Hydraulic Structures in Rzeszów (www.pzmiuw.pl) (present – the Regional Water Management Authority in Rzeszów). A hard copy of the ESMF was also provided for review in the seat of this institution. Moreover, the ESMF draft was published on the website of the PCU (http://www.odrapcu.pl/en_popdow_dokumenty_RPZSiSS.html) and of the World Bank.

Detailed information about all aspects of these consultations are available on the website: http://www.odrapcu.pl/doc/OVFMP/RPZSiS_Zalacznik_08_Raporty_z_procedury_upublicznienia_projektu_EMAF.pdf.

8.3. PUBLIC CONSULTATIONS ON EMP (2019)

8.3. PUBLIC CONSULTATIONS FOR THE EMP (2019)

The draft of the present document is subject to the public consultation procedure conducted in accordance with the Operational Policies of the World Bank (*OP 4.01*).

After preparing the draft EMP and obtaining – upon its basis – the World Bank’s acceptance (so-called “OK”) for commencing the publication procedure, on the 18th of February 2019 a digital version of the draft EMP was published at publicly accessible websites: website of the State Water Holding Polish Waters, Regional Water Management Authority in Rzeszów (PGWWP RZGW in Rzeszów) – wodypolskie.bip.gov.pl (Fig. 2), website of the OVFM Project Coordination Unit – www.odrapcu.pl (Fig. 3), website of the Commune Office of Gorzyce – www.gminagorzyce.pl (Fig. 4) and website of the Commune Office of Zaleszany – www.zaleszany.pl (Fig. 5), and a hard copy was made available in the office of the PGWWP RZGW in Rzeszów (Rzeszów, 17B. Hanasiewicza Street) and in the office of the PGWWP RZGW in Rzeszów – Water Supervising Unit in Tarnobrzeg (Tarnobrzeg, 86. Sienkiewicza Street).

Detailed information on the access to this document and on the possibility of informing conclusions and comments (along with indication of detailed contact data: e-mail address, snail mail addresses, where the project document was made accessible, office opening hours) were publicly informed in the announcement (Fig. 6) placed in the following locations:

- website of the PGWWP RZGW in Rzeszów – wodypolskie.bip.gov.pl (Fig. 2), website of the OVFM PCU – www.odrapcu.pl (Fig. 3), website of the Commune Office of Gorzyce –

www.gminagorzyce.pl (Fig. 4) and website of the Commune Office of Zaleszany – www.zaleszany.pl (Fig. 5);

- in local press – local newspaper *Gazeta Codzienna NOWINY* (Fig. 7);
- on information boards in PGWWP RZGW in Rzeszów, PGWWP RZGW in Rzeszów – Water Supervising Unit in Tarnobrzeg, Commune Office of Gorzyce, Commune Office of Zaleszany and on rural information boards in Wrzawy (Commune of Gorzyce) and in Skowierzyn (Commune of Zaleszany).

The aforementioned announcement also included information on the possibility of taking part in a meeting and in a discussion opened for interested people, organizations and institutions, which was planned for the 4th of March 2019 (including information on a place, date and time of the meeting).

The publication of the draft EMP, officially launched on **the 18th of February 2019**, was completed after 10 working days, i.e. on **the 1st of March 2019**. During the publication period the visits of persons familiarizing themselves with the available draft EMP were not observed. Until the completion of works on this report neither additional remarks nor questions were provided in relation to contents of the draft EMP.

After completion of the publication, an opened meeting for interested people, organizations and institutions was held on **the 4th of March 2019** at 4:00 p.m. in the Community Centre of Wrzawy (Commune of Gorzyce), where a public presentation of and discussion on the draft EMP were organized (Fig. 8 and 9). Twenty seven people participated in the meeting, including: the representatives of PCU, PGWWP RZGW in Rzeszów, Consultant, local authorities, and inhabitants of localities founded in vicinity of the planned *Contract 3D.1* implementation area. The meeting lasted for about 1.5 hour and the following questions were asked:

- 1) *How will the access to land used within the embanked area of San be provided for farmers after completion of the embankment modernization?*

It was clarified that – in accordance with design documentation for *Contract 3D.1* – the section of the embankment in question shall have 6 embankment crossings allowing for the access to the existing system of dirt roads within the left-side embanked area of San.

- 2) *When will the Contractor be selected and when will the construction works for Contract 3D.1 start?*

An answer informed required stages of a procedure on the commencement of works, as results from the Public Procurement Law and from the requirements of the World Bank. Taking into account the fact that circumstances prolonging the duration of particular procedures may occur beyond the Investor's control on each of the aforementioned stages, one has not provided a precise date of selecting the Contractor

and commencing the works. It was however declared that the commencement of the construction works under *Contract 3D.1* shall surely take place within the current calendar year, most likely in the second or in the third quarter.

- 3) *Does the Investor plan to overhaul the embankment culvert located in the area where the left flood embankment of San joins the right flood embankment of Vistula?*

An answer informed that – in accordance with design documentation for *Contract 3D.1* (modernization of the left flood embankment of San) and for *Contract 3B.2* (modernization of the right flood embankment of Vistula) – embankment culverts located in embankment sections to be modernized shall be overhauled.

- 4) *Does the EMP expect limitation for possible commencement and/or performance of the works within selected periods of the year?*

An answer informed that the EMP for *Contract 3D.1* does not contain conditions disabling performance of any works within the selected periods of the year; however, it includes conditions limiting the acceptable time of top-soil removal (item 16 in Appendix 1 to the EMP) and the acceptable time of logging for trees and shrubs (item 52 in Appendix 1 to the EMP).

- 5) *Does the Contractor of works need to obtain an additional permit for logging?*

It was clarified that the legally valid development consent (decision of the Podkarpackie Governor dated 22th of November 2018) allows for e.g. logging of trees within the boundaries of performance area, and the Contractor does not need to obtain other permits for logging within the framework of *Contract 3D.1*.

- 6) *Does the EMP include an obligation of mowing for the flood embankment after completion of the modernization?*

It was clarified that – in accordance with condition under item 99 in Appendix 1 to the EMP for *Contract 3D.1* – the Contractor shall be obliged to mow the embankment surface until the end of defects notification period (which lasts for 3 years). After completion of that period the Investor shall be responsible for the proper use of the modernized embankment (including mowing of its surface), in accordance with regulations binding for PGWWP RZGW in Rzeszów.

- 7) *What is the planned range of logging under the contract?*

It was clarified that – in accordance with design documentation for *Contract 3D.1* – the logging is planned only within a strip of few meters from the basis of the embankment to be modernized, only within the splitting lines for the assignment.

8) *Will the farmers – previously using the land to be acquired for the purpose of the investment – be able to sow the land this year (prior to the commencement of the works)?*

It was clarified that – despite the fact that those properties have already been taken over by the State Treasury – it is possible to provide winter sowing this year; however, that would be done by the farmers on their own risk. The Investor cannot guarantee that the land sown would not be acquired by the Contractor of construction works prior to this year's harvest. In that case the farmers would not be entitled to compensation for lost crop.

9) *Is it planned to deliver soil for the purpose of investment implementation using the existing communal roads?*

It was clarified that it currently is not planned to deliver the materials using communal roads (the deliveries shall be provided using a provincial road, a district road, and a service road along the embankment foot). If the Contractor would notify it is necessary to also apply the communal roads, then it would need to make proper establishments with the Commune Office and to meet all contractual obligations in that scope (including e.g. meeting of conditions under items 8, 50, 51 and 84 in Appendix 1 to the EMP).

10) *How many vehicle bases do you plan to organize on the investment implementation stage?*

It was clarified that a decision on the number and the location of vehicle bases shall be made by the Contractor of works, in accordance with the binding rules under the Contract.

Considering the character of aforementioned questions, which were asked during the meeting, and the lack of remarks and conclusions of the public during the publication of the draft EMP, the authors of the EMP for the *Contract 3D.1* stated that its contents do not require modification resulting from the publication procedure. After supplementation of the document with a memo on the publication procedure and after implementation of some corrections to the document's text and appendices (correction of mistakes identified within the publication period) the final EMP was submitted to the World Bank in order to obtain the final acceptance clause, i.e. "no objection".

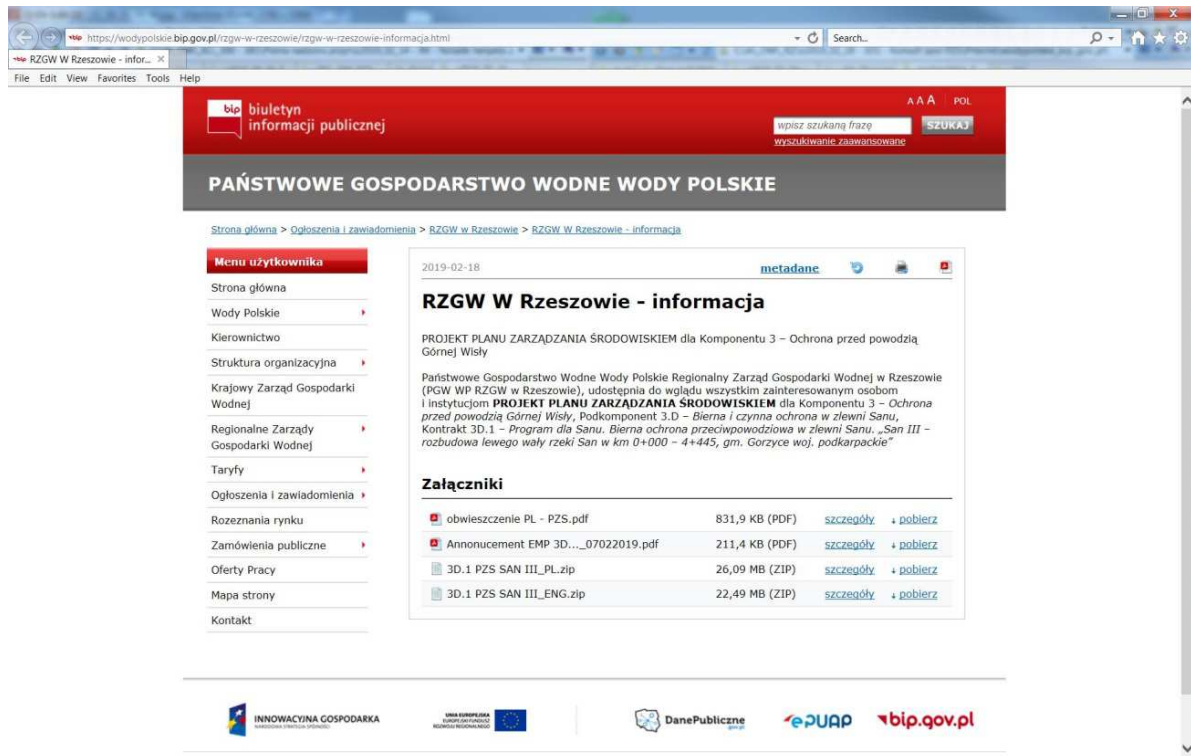


Figure 2. Digital version of the draft EMP and announcement on public hearings for the draft EMP published at the website of the PGWWP RZGW in Rzeszów.

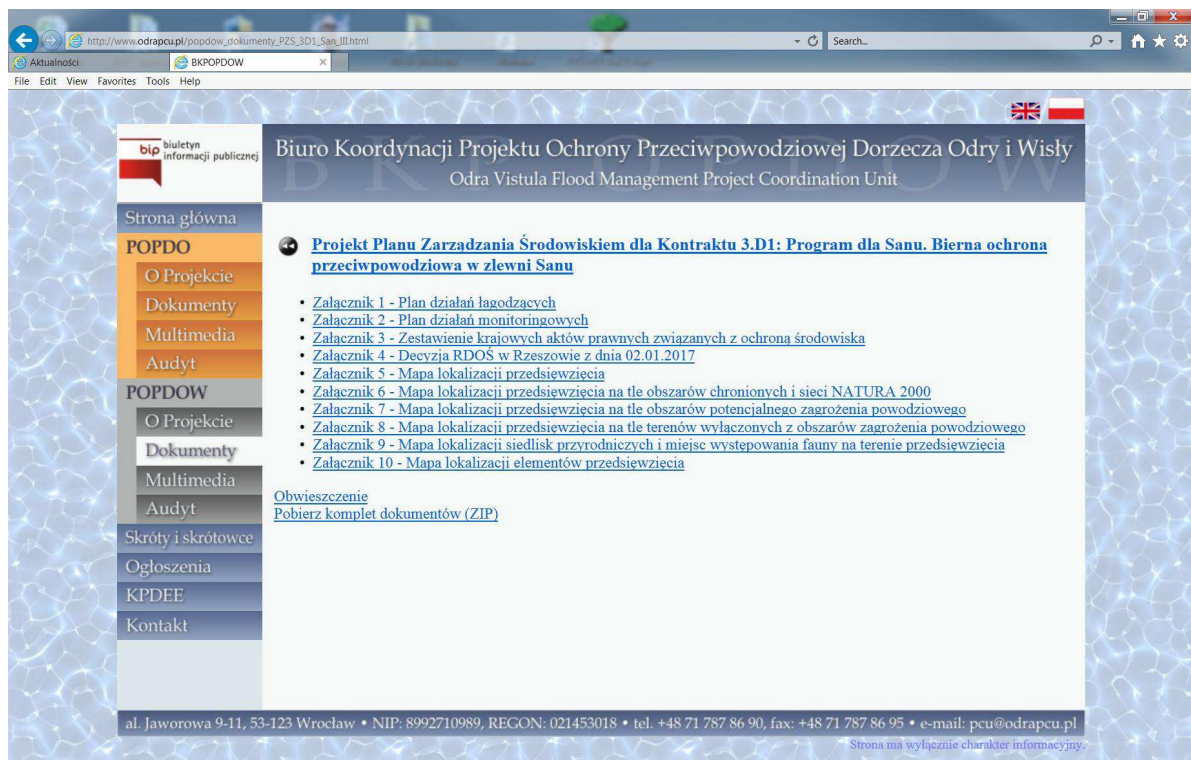


Figure 3. Digital version of the draft EMP and announcement on public hearings for the draft EMP published at the website of the OVFM Project Coordination Unit.

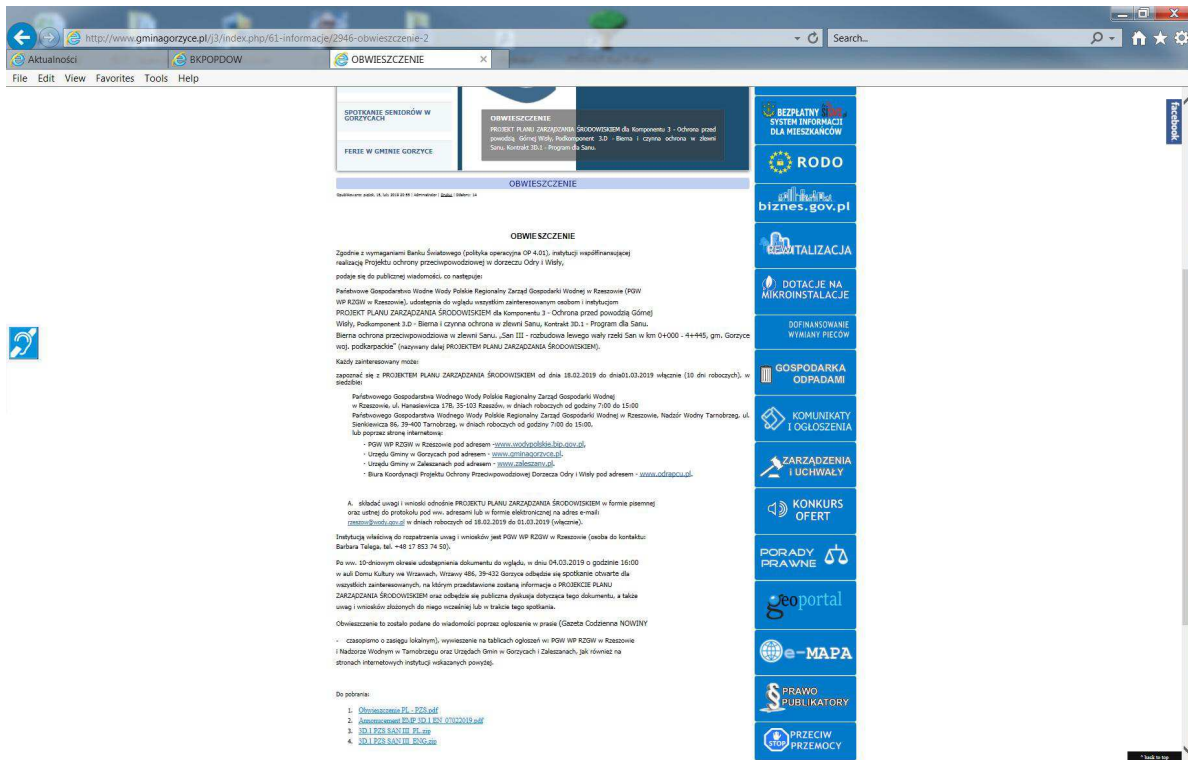


Figure 4. Digital version of the draft EMP and announcement on public hearings for the draft EMP published at the website of the Commune Office of Gorzyce.

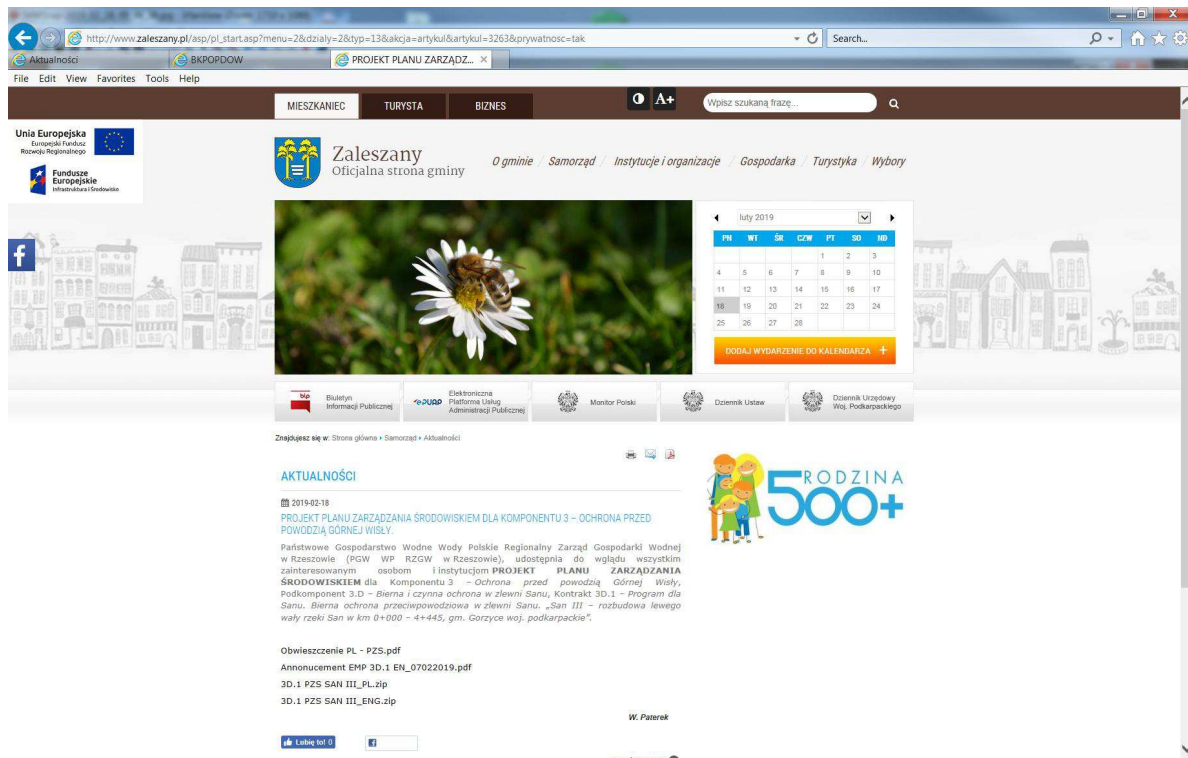


Figure 5. Digital version of the draft EMP and announcement on public hearings for the draft EMP published at the website of the Commune Office of Zaleszany.

OBWIESZCZENIE

Zgodnie z wymaganiami Banku Światowego (polityka operacyjna OP 4.01), instytucji współfinansującej realizację *Projektu ochrony przeciwpowodziowej w dorzeczu Odry i Wisły*,

podaje się do publicznej wiadomości, co następuje:

Państwowe Gospodarstwo Wodne Wody Polskie Regionalny Zarząd Gospodarki Wodnej w Rzeszowie (PGW WP RZGW w Rzeszowie), udostępnia do wglądu wszystkim zainteresowanym osobom i instytucjom **PROJEKT PLANU ZARZĄDZANIA ŚRODOWISKIEM** dla Komponentu 3 – *Ochrona przed powodzią Górnej Wisły*, Podkomponent 3.D – *Bierna i czynna ochrona w zlewni Sanu*, Kontrakt 3D.1 – *Program dla Sanu. Bierna ochrona przeciwpowodziowa w zlewni Sanu. „San III – rozbudowa lewego wały rzeki San w km 0+000 – 4+445, gm. Gorzyce woj. podkarpackie”* (nazywany dalej PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM).

Każdy zainteresowany może:

A) zapoznać się z PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM od dnia 18.02.2019 do dnia 01.03.2019 włącznie (10 dni roboczych), w siedzibie:

- Państwowego Gospodarstwa Wodnego Wody Polskie Regionalny Zarząd Gospodarki Wodnej w Rzeszowie, ul. Hanasiewicza 17B, 35-103 Rzeszów, w dniach roboczych od godziny 7:00 do 15:00,
- Państwowego Gospodarstwa Wodnego Wody Polskie Regionalny Zarząd Gospodarki Wodnej w Rzeszowie, Nadzór Wodny Tarnobrzeg, ul. Sienkiewicza 86, 39-400 Tarnobrzeg, w dniach roboczych od godziny 7:00 do 15:00,

lub poprzez stronę internetową:

- PGW WP RZGW w Rzeszowie pod adresem - www.wodypolskie.bip.gov.pl,
- Urzędu Gminy w Gorzycach pod adresem – www.gminagorzyce.pl,
- Urzędu Gminy w Zaleszanych pod adresem – www.zaleszany.pl,
- Biura Koordynacji Projektu Ochrony Przeciwpowodziowej Dorzecza Odry i Wisły pod adresem – www.odrapcu.pl.

B) składać uwagi i wnioski odnośnie PROJEKTU PLANU ZARZĄDZANIA ŚRODOWISKIEM w formie pisemnej oraz ustnej do protokołu pod ww. adresami lub w formie elektronicznej na adres e-mail: rzeszow@wody.gov.pl w dniach roboczych od 18.02.2019 do 01.03.2019 (włącznie).

Instytucją właściwą do rozpatrzenia uwag i wniosków jest PGW WP RZGW w Rzeszowie (osoba do kontaktu: Barbara Telega, tel. +48 17 853 74 50).

Po ww. 10-dniowym okresie udostępnienia dokumentu do wglądu, w dniu **04.03.2019 o godzinie 16:00** w auli Domu Kultury we Wrzawach, Wrzawy 486, 39-432 Gorzyce odbędzie się **spotkanie otwarte** dla wszystkich zainteresowanych, na którym przedstawione zostaną informacje o PROJEKCIE PLANU ZARZĄDZANIA ŚRODOWISKIEM oraz odbędzie się publiczna dyskusja dotycząca tego dokumentu, a także uwag i wniosków złożonych do niego wcześniej lub w trakcie tego spotkania.

Obwieszczenie to zostało podane do wiadomości poprzez ogłoszenie w prasie (**Gazeta Codzienna NOWINY** - czasopismo o zasięgu lokalnym), wywieszenie na tablicach ogłoszeń w: PGW WP RZGW w Rzeszowie i Nadzorze Wodnym w Tarnobrzegu oraz Urzędach Gmin w Gorzycach i Zaleszanych, jak również na stronach internetowych instytucji wskazanych powyżej.

Dyrektor

 Małgorzata Wajda

Figure 6. Announcement on public hearings for the draft EMP submitted to local press and published on the web sites and on the bulletin boards.

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OBWIESZCZENIE

Zgodnie z wymaganiami Banku Światowego (polityka operacyjna OP 4.01), Instytucji współfinansującej realizację Projektu ochrony przeciwpowodziowej w dorzeczu Odry i Wisły,

podaje się do publicznej wiadomości, co następuje:

Państwowe Gospodarstwo Wodne Wody Polskie Regionalny Zarząd Gospodarstwa Wodnego w Rzeszowie (PGW WP RZÓW w Rzeszowie), ukończył do wglądu wszystkim zainteresowanym osobom i instytucjom PROJEKT PLANU ZARZĄDZANIA ŚRODOWISKIEM dla Komponentu 3 – Ochrona przed powodzią Gminy Wisły- Podkomponent 3.D – Bierna ochrona w zlewni Sanu, Kontrakt 3D.1 – Program dla Sanu- Bierna ochrona przeciwpowodziowa w zlewni Sanu, „San III – rozbudowa lewego waly rzeki San w km 0 000 – 4 445, gm. Gorzyce, wój. podkarpacki” (nazwany dalej PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM).

Każdy zainteresowany może:

A) zapoznać się z PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM od dnia 18.02.2019 do dnia 1.03.2019 włącznie (10 dni roboczych), w siedzibie: Państwowego Gospodarstwa Wodnego Wody Polskie Regionalny Zarząd Gospodarstwa Wodnego w Rzeszowie, ul. Hanusiewicza 17B, 35-103 Rzeszów, w dniach roboczych od godziny 7.00 do 15.00,

Państwowego Gospodarstwa Wodnego Wody Polskie Regionalny Zarząd Gospodarstwa Wodnego w Rzeszowie, Nadzór Wodny Tarnobrzag, ul. Sienkiewicza 86, 38-400 Tarnobrzag, w dniach roboczych od godziny 7.00 do 15.00, lub poprzez stronę internetową:

- PGW WP RZÓW w Rzeszowie pod adresem - www.wodypolskie.bip.gov.pl.
- Urząd Gminy w Gorzycach pod adresem - www.gminagorzyce.pl.
- Urząd Gminy w Zaleszanych pod adresem - www.zaleszany.pl.
- Biura Koordynacji Projektu Ochrony Przeciwpowodziowej Dorzecza Odry i Wisły pod adresem - www.odnappu.pl.

B) składając uwagi i wnioski odnośnie PROJEKTU PLANU ZARZĄDZANIA ŚRODOWISKIEM w formie pisemnej oraz tablicy do protokołu pod ww. adresami lub w formie elektronicznej na adres e-mail: rzeszow@wody.gov.pl w dniach roboczych od 18.02.2019 do 1.03.2019 włącznie. Instytucją właściwą do rozpatrzenia uwag i wniosków jest PGW WP RZÓW w Rzeszowie (osoba do kontaktu: Barbara Telega, tel. 48 17 853 74 50). Po ww. 10-dniowym okresie udostępnienia dokumentu do wglądu, w dniu 4.03.2019 o godzinie 16.00 w auli Domu Kultury we Wzrzeszowie, Wzrzesz 486, 38-432 Gorzyce, odbędzie się spotkanie otwarte dla wszystkich zainteresowanych, na którym przedstawione zostaną informacje o PROJEKcie PLANU ZARZĄDZANIA ŚRODOWISKIEM oraz odbędzie się publiczna dyskusja dotycząca tego dokumentu; a także uwag i wniosków złożonych do niego wcześniej lub w trakcie tego spotkania.

Obwieszczenie to zostało podane do wiadomości poprzez ogłoszenie w prasie (Gazeta Codzienna NOWINY) - czasopiśmie o zasięgu lokalnym, wywieszenie na tablicach ogłoszeń w: PGW WP RZÓW w Rzeszowie i Nadzorz Wodnym w Tarnobrzegu oraz Urzędach Gmin w Gorzycach i Zaleszanych, jak również na stronach internetowych Instytucji wskazanych powyżej.

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GAZETA PODKARPACIA

Figure 7. Announcement on public consultation for the draft EMP published in a local newspaper (Gazeta Codzienna NOWINY).



Figure 8. Public hearings for the draft EMP held in the Community Centre of Wrzawy, on the 4th of March 2019.



Figure 9. Public hearings for the draft EMP held in the Community Centre of Wrzawy, on the 4th of March 2019.

9. ORGANIZATIONAL STRUCTURE OF EMP IMPLEMENTATION

The Works Contract 3D.1 is a part of Odra-Vistula Flood Management Project co-financed from the funds of the World Bank, the Council of Europe Development Bank (CEB), the European Union Funds, and the State budget. Therefore, the structure of supervision of the EMP must correspond to both; regulations of the Polish law, and the requirements of the World Bank.

9.1. ODRA-VISTULA FLOOD MANAGEMENT PROJECT COORDINATION UNIT

Project Coordination Unit (PCU), currently remaining a budgetary unit subordinated to the minister relevant for water management issues, is responsible for the total coordination of the implementation of individual EMPs under the OVFMP.

The PCU tasks are as follows:

- cooperation with the relevant ministries, the State Water Holding Polish Waters and other and other governmental or local administration units related to the OVFMP implementation;
- coordination of activities of particular Project Implementation Units and supporting those units in EMP implementation;
- monitoring and assessment of the EMP implementation progress;
- on-going cooperation with the World Bank, including the preparation of quarterly progress reports on the Contract implementation.

9.2. PROJECT IMPLEMENTATION UNIT

An entity which is directly responsible for implementation of the EMP for the Project and for the monitoring the progress of its implementation is Project Implementation Unit (PIU), i.e. State Water Holding Polish Waters Regional Water Management Authority in Rzeszów.

Due to the implementation of the OVFMP, the Project Implementation Office (PIO) was assigned within the PIU structure, which is a separate structure supervised by the President of State Water Holding Polish Waters. This structure is transparent and has a high decisive level, which increases the effectiveness of the Contract implementation.

As part of EMP implementation, the PIO fulfils the following tasks:

- monitoring of the EMP implementation progress;
- financial management and bookkeeping;
- preparing required reports for the needs of EMP implementation monitoring and coordination of its execution by all services engaged in EMP implementation.

The scope of PIO employees' duties connected with the fulfilment of supervision over EMP implementation is as follows:

- managing, coordinating, and supervising over the EMP implementing by the Designer, Consultant, and Contractor;
- direct supervising over the correct task implementation;
- cooperation with PCU;
- conducting an administration and legal supervision over the EMP implementation;
- verifying the Reports and accounts of EMP implementation prepared by the Consultant and Contractor;
- conducting a financial supervision over the EMP implementation;
- supervising the proper application of formal procedures during the implementation of EMP, as required by the Building Law, Works Contract, the Environmental Protection Law, and other.

9.3. THE ENGINEER - CONSULTANT

The role of the Engineer is to support PIU in an effective conduct of the whole Project process (from the preparation of the Works Contract to its settlement).

The Engineer was selected using the QCBS method (quality and cost-based selection) in accordance with the "Guidelines: Selection and Employment of Consultants by World Bank Borrowers".

In accordance with the scope specified in the Contract Engineer Agreement, the Engineer will be obliged to perform, among others the supervision over EMP implementation, comprising of the following:

- monitoring of EMP implementing by the Contractor;
- monitoring of the Contractor's activities;
- checking the quality of construction works performed by the Contractor and built-in construction products, and especially preventing the use of building materials which are defective and not accepted for use in the construction industry;
- representing RZGW in Rzeszów on Site by performing the control of the compliance of the construction process with the Works Contract and the construction permit, and with regulations related to the environment protection and technical know-how;
- supervision of all issues related to the environmental protection by specialists experienced in the field of environmental protection and other Engineer's personnel;
- constant monitoring of proper implementation of mitigation measures the adverse environmental impact;

- conducting additional tests if it would be necessary to verify the reports of the Contractor;
- identifying problems resulting from the harmful environmental impact caused by the construction works, and presentation of proposed solutions to those problems;
- verifying and acceptance of construction works being covered or of concealed works participation in tests and technical commissioning of technical installations and devices, as well as the preparation and participation in performing the commissioning activities for finished objects and approving them for use;
- confirmation of the works factually completed and the removal of defects, as well as, at the request of the Investor, verification of financial settlements of the Works Contract.

9.4. THE CONTRACTOR

The Contractor will be responsible for implementing the EMP. The Contractor's responsibilities within this scope are as follows:

- conducting construction works according to the rules specified in the EMP, Works Contract conditions and design documentation, pursuant to applicable legal provisions and requirements of administrative decisions issued for the Works Contract;
- provision of the ESHS Proceeding Code (prepared on the bid submission stage, as described in the Bidding Documents) to the Engineer's acceptance and verification of that document as a result of periodical guidelines of the Engineer;
- involvement of the following specialists to implement the site-specific EMP: (I) botanist, (II) entomologist, (III) chiropterologist, (IV) herpetologist, (V) mammalogist, and (VI) ornithologist. Those specialists will be involved in the implementation of mitigation and monitoring measures;
- ensuring the permanent sapper and archeological supervision;
- ensuring the permanent H&S supervision;
- implementation of the Engineer's recommendations (including the recommendations of Engineer's Environmental Team and of the Investor's supervision inspector) concerning the implementation of the EMP;
- ensuring – prior to the commencement of works – preparation of BIOZ Plan, Waste Management Plan, Quality Assurance Plan/Plans, Flood Management Plan for the time of the works, and Building site organization design;
- if necessary, the Contractor's Environmental Team would develop necessary materials and applications for the obtainment of permits/decisions for derogations from bans to protect species of plants, fungi or animals based upon the rules and in

the mode specified by the Act of 16 April 2004 on the nature protection. The above mentioned decisions issued by RDOŚ/GDOŚ are to be requested for by the Contractor. It will be the Contractor's obligation to implement the provisions of obtained decisions for derogations from the protection of species of plants, fungi or animals;

- keeping the construction site documentation;
- drafting monthly reports and technical inspection reports;
- preparing reports concerning environmental protection.

10. EMP IMPLEMENTATION SCHEDULE AND REPORTING PROCEDURES

The implementation of the EMP shall allow the parties involved in the preparation, performance, and supervision of Works Contract to:

- identify different environmental aspects which have a considerable impact on the state of the environment, and therefore allow for controlling, correction, and reducing them, but which consequently generate economic effects;
- rectify adverse consequences of the works conducted during the implementation to the benefit of the environment and financial results;
- determine the aims and tasks performed within the adopted environmental policy, covered by the EMP, which require expenditure and bring tangible effects;
- identification and elimination of prospective hazards and failures, preventing and removing the environmental effects, which may be connected with them and which may entail losses disproportional to the preventive costs;
- reasonably use the natural resources, with minimum environmental loss and the optimum generation of costs.

Furthermore, the implementation of recommendations and activities required under by EMP may reduce or even eliminate a risk of occurrence of adverse social, environmental and economic events and phenomena related to the Contract, and in particular:

- a risk to ignore the environmental protection issues during the process of implementation of tasks by the Contractor;
- a risk of the escalation of the local community protests as a result of a failure of the Contractor to adhere to technologies for conducting the works and environmental procedures approved by the Engineer;
- a risk of additional environmental penalties;
- a risk of additional damages to the environment.

Taking into account the significance of the aspects specifying the environmental conditions and community conditions, the following EMP implementation procedures are anticipated:

- prior to the selection of the Contractor, the Employer shall submit a draft of this EMP to the World Bank in order to obtain its opinion;
- the draft of EMP will be then subject to public consultations;
- after the public consultations (and adding the document with the consultation results), the EMP shall be updated and submitted in its final version for the approval by the World Bank;

- upon the approval of the EMP by the World Bank, a final document shall be attached to the Bidding Documents for selection of the Contractor;
- all activities of the Contractor shall be systematically reported (once a month), in Polish and (if necessary) in English, in paper and electronic versions, with reference to the obligations required by the EMP and other contractual documents. Those documents will be subject to the approval of the Engineer and the Employer.

Furthermore, an Environmental Decision imposes an obligation of monitoring and reporting environmental impact which consists of (these obligations will be fulfilled by the Contractor):

- the construction works to be supervised by the nature's supervision. According to the EMP, the nature's supervision will be conducted by the Contractor's Environmental Team comprising of specialists in various disciplines;
- as part of the nature's supervision it is advisable to carry out at least 8 site inspections each month and provision of a permanent herpetological supervision during spring and autumn migration of the amphibians;
- Environmental Supervision Sheet should be provided after each site visit, including a description of activities and recommendations for the Contractor including the photographs.

Monitoring at the works execution stage involves the preparation of consolidated reports from monitoring of nature by the Contractor, confirmed by the experts of the Contractor's Environmental Team, approved by the Engineer's Environmental Team and submitted to PIU. Detailed contents of the report shall be defined by the Engineer (commencement report, periodical report – monthly, ad-hoc, closure); it shall also define the due dates.

The Project reporting system shall also be based on monthly reports submitted by the Contractor to the PIO through the Engineer and upon Engineer's monthly and quarterly reports. Monthly and quarterly reports on the EMP implementation (Contractor's and Engineer's) shall be prepared as part of monthly reports or as a separate document.

The PIU shall supply the PCU with monthly and quarterly reports. They shall contain a required set of information and descriptions enabling the preparation of the Project's quarterly report by the PCU. Furthermore, especially in the case of problems with the Works Contract implementation, the PCU shall expect the PIU to submit the statements and data in the monthly periods.

The following reporting procedures were established:

- 1) Reporting:
 - a) Reports (commencement, monthly, ad-hoc, quarterly, final, for RDOŚ in Rzeszów) shall be prepared by the Contractor,
 - b) Report review by the Engineer,
 - c) Submission of a report to the Employer (for information),
 - d) Submission of a PIU's quarterly report to the PCU,
 - e) Final report on the implementation of the EMP prepared by the Engineer (after verification by the PIU and PCU submitted to the World Bank not later than 3 months after the completion of the works).
- 2) Archiving:
 - a) the Contractor: 1 copy of each report in an electronic version for 5 years from the date of the Works Contract completion,
 - b) the Engineer: 1 copy of each report in an electronic version for 5 years from the date of the Works Contract completion,
 - c) the Employer: 1 copy of each report in an electronic version for 5 years from the date of the Works Contract completion.
- 3) Evaluation – ongoing assessment of the outcomes of the planned activities implementation which arise from the EMP. On-going analysis of documentation (the Reports of the Contractor) by the Engineer. Providing the Employer with reliable information on the course of the construction process, including the fulfilment of activities limiting the adverse impact on the environment, and recommendations arising from the Environmental Decision.

PCU shall also prepare quarterly reports on the implementation of the EMP and submit them to the World Bank as part of the quarterly report for OVFMP.

The following is planned:

- *ex-ante* evaluation: Report prior to the commencement of the Works Contract implementation (Engineer's Report),
- on-going evaluation: Engineer's quarterly reports,
- *ex-post* evaluation:
 - ✓ Report upon the completion of the works (EMP final report prepared by the Engineer),
 - ✓ EMP Report upon expiry of the Defects, Guarantee and Warranty Notification Period drawn up by the Engineer.

11. SOURCE MATERIALS

1. Environmental Assessment Report for the Task: “San III – modernization of the embankment of the San River at km 0+000 – 4+445, Gorzyce Commune, Podkarpackie Province”;
2. Decision on Environmental Conditions dated 2 January 2017 (Ref. No. WOÓŚ.4233.2.2015.KR.76) issued for the Task: “San III – modernization of the left embankment of San River at km 0+000 – 4+445, Gorzyce Commune, Podkarpackie Province”, Option I, issued by RDOŚ in Rzeszów;
3. Construction Design for the Task: “San III – modernization of the left embankment of the San River at km 0+000 – 4+445, Gorzyce Commune, Podkarpackie Province”;
4. World Bank Operational Policy OP 4.01 – Environmental Assessment
(<http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPMANUAL/0,,contentMDK:20064724~pagePK:64141683~piPK:64141620~theSitePK:502184~isCURL:Y~isCURL:Y~isCURL:Y~isCURL:Y,00.html>);
5. Environmental and Social Management Framework, final document, April 2015
(http://www.odrapcu.pl/doc/OVFMP/Ramowy_Plan_Zarz%C4%85dzania_Srodowiskiem_i_Spo%C5%82eczenstwem.pdf);
6. Poland – Odra-Vistula Flood Management Project: environmental and social management framework
(<http://documents.worldbank.org/curated/en/2015/04/24502899/poland-odra-vistula-flood-management-project-environmental-social-management-framework>);
7. Website: http://www.odrapcu.pl/popdow_dokumenty.html;
8. Website: www.isapprox.gov.pl/.

APPENDICES

- Appendix 1. Mitigation Measures Plan**
- Appendix 2. Monitoring Measures Plan**
- Appendix 3. The list of national legal acts related to environment protection**
- Appendix 4. Environmental Decision issued by RDOŚ in Rzeszów, 2 January 2017**
- Appendix 5. Location of the Contract**
- Appendix 6. Location of the Contract in context of protected areas and Natura 2000 network**
- Appendix 7. Location of the Contract in context of potential flood risk areas**
- Appendix 8. Location of the Contract in context of the areas excluded from potential flood risk**
- Appendix 9. Location of natural habitats and fauna in the Contract area**
- Appendix 10. Location of elements of the Contract**