

ENVIRONMENTAL MANAGEMENT PLAN

FINAL VERSION

ODRA-VISTULA FLOOD MANAGEMENT PROJECT – Loan Agreement no. 8524 PL

Environmental category B – in accordance with WB OP 4.01

Component 3:

Flood Protection of the Upper Vistula

Subcomponent 3D:

Passive and Active Protection in San basin

The Works Contract 3D.2/2

Expansion of the left and right embankment of the Biala River in the Tarnow
Municipality and the City of Tarnow.

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ENVIRONMENTAL MANAGEMENT PLAN

Subcomponent 3D: Passive and active protection in San basin

Works Contract 3D.2/2 Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow.

Environmental category B – according to OP 4.01 WB

Project Implementation Unit:

State Water Holding Polish Waters

in the name of which the following entity acts

the Regional Water Management Authority in Cracow

with its office at 22. Marszałka J. Piłsudskiego Street, 31-109 Cracow

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OVFM PIU

AECOM Polska Sp. z o.o.

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LIST OF DEFINITIONS AND ABBREVIATIONS APPLIED IN THIS EMP

Name	Description
World Bank (WB)	International Bank for Reconstruction and Development http://www.worldbank.org/
H&S	Health and Safety
PCU / OVFM PCU	Odra-Vistula Flood Management Project Coordination Unit http://odrapcu.pl/en_index.html
CEB	Council of Europe Development Bank https://coebank.org/en/
BOD ₅	Biochemical oxygen demand during 5 days
Environmental Decision (ED)	Decision on environmental conditions
ESHS	Environmental, Social, Health & Safety System
ESMF	Environmental and Social Management Framework http://odrapcu.pl/doc/OVFMP/Environmental_and_Social_Management.pdf
GDOŚ	General Directorate for Environmental Protection
MGR	Major Groundwater Reservoirs
CE	Contract Engineer
IMGW - PIB	Institute of Meteorology and Water Management – National Research Institute
BGW	Body of Groundwater
BSW	Body of Surface Water
PIO	Project Implementation Office - created within PIU separate organizational unit responsible for the implementation of Works Contract http://www.odrapcu.pl/
PIU	Project Implementation Unit
PIU/Investor/ Employer (to December 31, 2017)	Małopolski Board of Amelioration and Hydraulic Structures in Cracow
PIU/Investor/ Employer (from January 1, 2018)	State Water Holding Polish Waters, in the name of which the Regional Water Management Authority in Cracow acts
Consultant / Engineer / Consultant Engineer	Company or legal person providing services for the Investor Technical Assistance Consultant for the OVFM Project – AECOM Polska Sp. z o.o.

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Name	Description
LSDP	Local Spatial Development Plan
MZMiUW	Małopolski Board of Amelioration and Hydraulic Structures in Cracow
EIA	Environment Impact Assessment
PAD	Project Appraisal Document for the World Bank approval of a Loan to the Polish Government to implement OVFMP http://documents.worldbank.org/curated/en/320251467986305800/Poland-Odra-Vistula-Flood-Management-Project
PDWD	Publicly Accessible Data Register
Waste MP	Waste Management Plan
PGW WP	State Water Holding Polish Waters
BIOZ Plan	Health and Safety Plan developed based upon Article 21a item 4 of the Act of July 7, 1994 – Building Law Act
POM	Project Operations Manual prepared by the Odra Vistula Flood Management Project Coordination Unit, Wroclaw 2015 http://www.odrapcu.pl/doc/POM_PL.pdf the binding version is the English one: http://www.odrapcu.pl/doc/POM_ENG.pdf
LA&RAP	Land Acquisition and Resettlement Action Plan
Project / OVFMP	Odra-Vistula Flood Management Project
Designer	Company or a legal person drawing up the design documentation
Works Contract/Contract	Works Contract 3D.2/2 Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow.
FRMP	Flood Risk Management Plans
EMP	Environmental Management Plan
RDOŚ	Regional Directorate for Environmental Protection
RZGW	Regional Water Management Authority
WIOŚ	Provincial Inspectorate for Environmental Protection
Contractor	Company or a legal person implementing the Contract 3D.2/2 Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow.
Roads authority	Agency responsible for management of public roads in accordance with the Act on public roads

LIST OF ABBREVIATIONS FOR TITLES OF LEGAL ACTS APPLIED IN THIS EMP

Titles of legal acts quoted within contents of this EMP are given in their abbreviated form. Full titles of legal acts are given in the table below.

Title in the text	Full title (with publication reference)
<i>APC</i>	Act of June 14, 1960 - Administrative Procedure Code (consolidated text: Journal of Laws of 2018, item 2096, as amended).
<i>BIOZ Regulation</i>	Regulation of the Minister of Infrastructure of June 23, 2003 on Information Concerning Safety and Health Protection and Safety and Health Protection Plan (Journal of Laws of 2003, No.120, item 1126)
<i>Building Law Act</i>	Act of July 7, 1994, Construction Law (consolidated text: Journal of Laws of 2019, item 1186)
<i>EIA Act</i>	Act of October 3, 2008 on providing information on the environment and its protection, public participation in the environmental protection, and on environmental impact assessments (consolidated text, Journal of Laws of 2018, item 2081, as amended)
<i>EIA Regulation</i>	Regulation of the Council of Ministers of November 9, 2010 on Works Contracts likely to have significant impact on the environment (consolidated text, Journal of Laws of 2016, item 71)
<i>NC Act</i>	Act of April 16, 2004 on nature conservation (consolidated text, Journal of Laws of 2018, item 1614, as amended)
<i>Water MP</i>	Regulation of the Council of Ministers of October 18, 2016 on Water Management Plan for waters within the Vistula River Basin (Journal of Laws 2016, item 1911)

SUMMARY

This document presents the Environmental Management Plan (EMP) for the Contract 3D.2/2 *Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow*, which remains a part of Subcomponent 3D implemented within Odra-Vistula Flood Management Project (OVFMP), co-financed by the International Bank for Reconstruction and Development (also referred to as the World Bank), and by the Council of Europe Development Bank, and also by grants awarded by the European Union Cohesion Fund and by the State Budget.

This EMP includes the following elements:

- Brief description of the OVFM Project (Chapter 1.1).
- Description of the Contract, to which this EMP refers to (Chapter 2).
- Institutional, legal and administrative conditions for implementation of the Contract with specified binding state legal acts on environmental protection, main stages of the EIA procedure, and also the current course of EIA procedure for the Works Contract (Chapter 3).
- Description of individual elements of the environment in the area of the Contract (Chapter 4).
- Summary of the environmental impact assessments (Chapter 5).
- Description of mitigation measures to be implemented by the Contractor and by the PIU at the stage of implementing the Contract to eliminate or limit the adverse impact of the Works Contract on the environment (Chapter 6), including a tabulated summary of those measures (Appendix 1 – Plan of mitigation measures).
- Description of monitoring measures at the stage of developing, implementing and operating the Contract (Chapter 7), including a tabulated summary of those measures (Appendix 2 – Plan of monitoring measures).
- Description of the course and results of public consultations on the stage of environmental impact assessment and on the stage of developing this EMP (Chapter 8).
- Description of the organizational structure for implementation of the EMP (Chapter 9).
- Implementation schedule and description of reporting procedures (Chapter 10)

Appendices to the EMP include check lists of the Plan of mitigation measures (Appendix 1) and of the Plan of monitoring measures (Appendix 2), the list of national legal acts related to environmental protection (Appendix 3), the environmental decision, resolutions, permits, notes (Appendix 4), drawings showing the location of the proposed Works Contract (Appendix 5), a map presenting location of areas protected in reference to elements of the Contract (Appendix 6), a map presenting areas under potential flood threat (Appendix 7), a map of areas excluded from the potential flood threat due to implementation of the Works Contract (Appendix 8), a map with location of fauna occurrence sites (Appendix 9), and a map with location of the Works Contract's elements (Appendix 10).

A basis for the development of this EMP were the following materials: ESMF, PAD, POM, WB operational policies, investment data sheet, issued environmental decision, environmental impact report, and design documentation.

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Location of Contract

The Contract is located within Małopolskie Province, in the City of Tarnów and in Biała (Commune of Tarnów), and – over a small section (about 8 m) – in Komorów (Commune of Wierzchosławice).

Scope of Contract

In accordance with the Contract, the planned works comprise extension of the existing flood embankments of the Biała River, including a backwater embankment for the Wątok Stream, through their widening and through rising to elevation of a safe freeboard, and extending the left embankment of the River Biała (forming a closure for the floodplain at Krakowska Street in Tarnów). The scope of works also comprises sealing of the embankment, development of necessary roads at the embankment, extension and construction of embankment ramps, extension of concrete walls, which currently form an integral part of the flood embankments, to develop U-turn yards, and to provide necessary redevelopment for the existing facilities, redevelopment of the embankment culverts, development of U-turn yards, and necessary redevelopment of the existing infrastructure.

The works under the Contract have been included on List no. 1 under item “ID 1_635_W” of Appendix no. 2 titled: “Investments, which do not affect achieving good condition of water adversely or they do not deteriorate the condition of water” to the MasterPlan for the Vistula River Basin (2014). Due to the expected lack of adverse impact on environmental objectives, the contract has not been included in the binding Water Management Plan for the Vistula River Basin (OJ of 2016, item 1911).

Current condition of environmental elements surrounding the Contract

As a result of works done by the team of specialist to identify values of the natural and cultural environment during the development of EMP and during earlier works associated with the development of environmental documentation and the obtainment of administrative decisions, it has been identified that the area located within the Contract implementation boundaries is characterized by the following local and supra-local conditions:

- Within the area of direct impact of the Works Contract no protected species of plants, protected habitats, fungi, lichens, mosses were identified; one species of invertebrates was identified;
- 15 protected species of birds, 6 protected species of mammals, and one species of protected reptiles were identified within the inspected site;
- The analyzed Works Contract is partially located within Natura 2000 site Dolny Dunajec PLH120085 (in a reach of about 1.2 km at the estuary of the River Biała to Dunajec) and in a distance of about 0.85 km from the Biała Tarnowska PLH120090 site;
- According to the Standard Data Form for Natura 2000 sites Dolny Dunajec PLH120085 and Biała Tarnowska PLH 120090; thus, potentially for part of the Contract implementation area, there are two species of amphibians under strict protection of species: yellow-bellied toad *Bombina variegata* and northern crested newt *Triturus cristatus*, as well as the protected species of mussel: thick shelled river mussel *Unio crassus*.

Summary of the major adverse impacts during implementation of the Contract

Impact on earth surface, soils, and grounds

Short-term impact on the earth surface, soils, and grounds shall occur due to the works done in the Contract implementation phase. It directly results from the construction works; however, the original conditions for the site shall be restored after completion of implementation.

Impact on air condition and climate

Impact on the climate shall not be exerted on the Contract implementation stage.

Gases and dusts (combustion gas) shall be emitted during implementation of the Works Contract due to operations of construction machines and means of transportation. The impact shall be short-term and – due to the scale of the works – it is neither expected to exceed acceptable concentration of substances in the air nor to deteriorate the environmental quality standards (in case of the air). Dusting may occur during offloading of soil in location of embankments to be developed only. The emission shall relate to the area of construction works and to the course of access and technological roads only. It shall be of local and temporary character.

Impact on surface water and groundwater

Due to the lack interference in the river bed morphology or in the hydrological regime, as well as due to the lack of new wastewater sources, the impact on the bodies of surface water shall not occur during implementation of the Works Contract; thus, it shall not form a risk of not achieving the environmental objectives determined for bodies of surface water.

Implementation of the Works Contract shall neither relate to the emission of pollutions to groundwater nor to the intake of groundwater. Therefore, there shall be no impact on the chemical status and on the quantitative status of bodies of groundwater; thus, it shall not form a risk of not achieving the environmental objectives defined for bodies of groundwater.

Impact on acoustic climate

Short-term impact on the acoustic climate shall occur during implementation of the Works Contract due to emission of noise by operating construction machines. The greatest impact would occur at performance of the works in a direct vicinity of the acoustically protected areas. The impact shall cease at completion of the works under the Works Contract.

Impact on the environment

As there are no valuable natural habitats within the Contract area, there shall be no significant impact on that environmental element on the Contract implementation stage.

Performance of the planned construction works is associated with the impact of Works Contract on vegetation and fauna within the implementation area. A method adopted for implementation minimizes the impact through its limitation to the impact on vegetation, which collides with the Works Contract directly. The impact of the Works Contract on fauna, including species under protection, shall mainly result from the increased level of noise during implementation of the Contract, as it may cause temporary scaring of animals. The Works Contract shall directly affect soil fauna through the interference in the soil structure during redevelopment of the embankments and during construction of service roads. Those however shall be reversible and short-term impacts.

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A condition for minimization of the adverse impact on fauna shall be the necessary care during the performance.

Impact on the cultural environment, archaeological sites

On the Works Contract implementation stage no hazard for areas and objects of historic value would occur. A condition for the absence of hazard is however keeping due care in relation to a historic railway gatehouse at the railway bridge spanning over the River Biała.

Impact on health and safety of people

The Works Contract does not generate significant hazards to health and safety of people. They may emerge only in case of failure or such other random event as fire, leakage of pollutions, finding of unexploded shells and misfires, hazard to third parties associated with the performance (e.g. excavations, traffic of machines and vehicles), flood hazard, hazards associated with transmission of infectious diseases, etc. The EMP determines relevant conditions for prevention of such events and for mitigation of potential effects.

The proposed Works Contract shall result in a temporary deterioration of the life quality and standard for the inhabitants (dusting and noise emission) during implementation. The impact shall however be short-term and reversible.

Other ESHS hazards

Regardless of the ones listed above, such ESHS related types of issues or hazards as accidents and near misses, cases of sexual harassment or mobbing, cases of labour law violation, cases of sexually transmitted diseases, including HIV/AIDS, and others, may occur during implementation of the Works Contract. This EMP determines relevant conditions to prevent hazards of those types and to efficiently react to the cases of their occurrence.

Cumulative impact

Cumulative impact shall occur in case of implementing Contract 3D.2/2 *Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow* and Contract 3D.2/1 *Construction of the right embankment of the Biala River in the City of Tarnów* also implemented under the OVFM Project. That impact shall only take place at the performance. Impact on acoustic climate and on the air may especially be accumulated. Fulfilment of obligations imposed onto the Investor in the ED shall allow for significant limitation of nuisance of those impacts.

Summary of major adverse impact on the Contract's operational stage

Impact on earth surface, soils, and grounds

Due to the fact that the Works Contract comprises extension of the existing embankments and redevelopment of the existing facilities, it shall not deteriorate landscape values after completion of the works. Impact on soil shall cease after land reinstatement.

Impact on air condition and climate

It is not expected to significantly modify macroclimate parameters on the Works Contract's implementation stage. Reduction of the flood risk shall allow for avoiding its consequences, e.g. such as modelling of topo-climate due to local changes to water relations. Therefore, during the use of the Contract there shall be no significant impact on the air. Combustion gas

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shall be emitted by lawnmowers used for plant mowing only, which would be a minor and local impact without any effects for the air condition and quality.

Impact on surface water and on groundwater

There shall be no interference in the riverbed on the operational stage, and therefore there shall be no significant impact on bodies of surface water. The Works Contract shall not be associated with the intake of water and with the discharge of wastewater to the ground; thus, it shall not affect the quantitative status and the qualitative status of surface water and of groundwater.

Impact of the Works Contract on the groundwater level shall be temporary and shall occur during accommodation of a flood wave only. It shall be associated with the development of an anti-filtration membrane within the embankment body, but the change of groundwater level during the flood shall be temporary, and after accommodation of the flood water groundwater shall return to its level from before the peak flow.

Acoustic impact

During the use of the new embankment there shall be no impact on the acoustic climate. There may be a temporary impact in a form of noise emitted by operating lawnmowers, which are necessary for mowing of greenery growing at the embankment; however, the total time of mowing amounts to few hours a year.

Nature

In the operational phase adverse impact on flora and fauna shall cease to a high extent. It is associated with the expected reinstatement of land to its original condition, while keeping the previous use of land.

Impact on the cultural environment

There shall be no hazard for areas and objects of historic value on the Works Contract's operational stage.

Cumulative impact

The use of embankments shall not cause accumulation of adverse impacts.

Limiting adverse impact and strengthening of positive impact

Main environmental impacts on the environment will take place over the time of the Contract implementation. During that time numerous measures shall be undertaken to mitigate or to eliminate adverse impact – measures described in Chapter 6 and tabulated in Appendix 1 to this EMP – Plan of Mitigation Measures. The mitigation measures aim at the following:

- protection of the aquatic environment and soil against pollution (the use of efficient mechanical equipment, proper storage and handling of substances harmful to the environment, including diesel products, such as fuels, lubricants, etc., provision of site facilities and staff facilities);
- protection against noise: works conducted only from 06.00 am to 10.00 pm, use of efficient construction equipment;
- removal (logging) of trees and shrubs only in the necessary range and conducting it beyond the bird hatching season;

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- replacement planting using at least 3-years-old seedlings with covered root system, along with protection against biting by deers and hares;
- prior to the commencement of earthworks, within the indicated deadline, one shall inspect the occurrence of natural habitats and habitats and sited of protected species of flora and fauna;
- the removed humus layer shall be placed beyond the work area – for application during reclamation works;
- in case of identifying seasonal migration of amphibians, apply solutions protecting against mortality (due to the works performed and the traffic of vehicles) of animals migrating to and from breeding grounds (e.g. fencing of habitats for amphibians on the construction site's side with a small fence and moving the animals to the area beyond the Works Contract);
- at the stage of Contract implementation monitor barriers or traps, and transfer the animals to the area beyond the Works Contract.

Essential monitoring

The Plan of Monitoring Measures related to verification of proper implementation of designed mitigation measures, as well as to monitoring of the impact on the environment on the Contract preparation stage and implementation stage, is described in Chapter 7 and summarized in Appendix 2 to the EMP – Plan of Monitoring Measures. The Plan of Monitoring Measures shall enable ongoing control over the proper implementation of all mitigation measures.

Conclusions from the review of possible social conflict

It is possible that there will be social conflicts arising due to e.g. inconvenience for residents of the surrounding areas mainly on the Works Contract implementation stage related to adverse impact of the construction works and transport (noise, vibration, air pollution). It is also possible that there will be a potential protest of ecological organizations against the logging. However, the overriding objective of the Works Contract, which is the reduction of the flood risk and the assurance of safety for life, health, and assets of people, should compensate for any inconvenience during the construction stage. The negative effects of flooding the flood plains in Tarnów during the past events will justify the economic aspect and cause widespread social acceptance of the local authorities, residents, property owners and users of land, in the vicinity of which the construction works will be performed. The argument for the favorable attitude towards the Contract is also a very small interference in the natural environment.

Legal context of the Contract

This Contract is qualified to so-called Group II, in accordance with the EIA Regulation. In the Decision dated June 11, 2015, ref. no.: ST-I.4233.2.2015.MB, the Regional Director for Environment Protection in Cracow imposed an obligation to provide the Environmental Impact Assessment for the Contract and determined the scope of the report. After submission of the Environmental Impact Report by the Investor - MZMiUW, the RDOŚ in Cracow

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conducted a proceeding on the environmental impact assessment, with the public participation.

On March 8, 2016 RDOŚ in Cracow issued the decision on environmental conditions, in which it determined conditions for implementation of the Contract regarding environmental protection.

1 Introduction

This paper presents the Environmental Management Plan (EMP) for the Contract 3D.2/2 *Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow*, which remains a part of Subcomponent 3D implemented within Odra-Vistula Flood Management Project (OVFMP), co-financed by the International Bank for Reconstruction and Development (World Bank), the Council of Europe Development Bank, and also by grants awarded by the European Union Cohesion Fund, and by the State Budget.

1.1 Odra-Vistula Flood Management Project

The most urgent flood protection tasks within selected reaches of the Odra and Vistula River Basins were expected for implementation under the OVFM Project.

3 Works Contract Components were considered under the Project, and they cover actions associated with flood safety improvement within the: Middle and Lower Odra River (Component 1), Nysa Kłodzka Valley (Component 2), and Upper Vistula (Component 3).

Component 1 covers various actions implemented within an extensive section of Odra over a total length of about 440 km (so-called free-flow Odra).

Component 2 of the Project shall be implemented within the Kotlina Kłodzka, which covers mountainous and highland sections of the Nysa Kłodzka River Basin.

The objective of Component 3 – Flood Protection of the Upper Vistula – is implementation of measures to limit the hazard associated with flood risk within the selected areas under successive improvements to flood safety within the Upper Vistula River Basin.

Component 3 is divided into the following Subcomponents:

- Subcomponent 3A – Flood Protection of Upper Vistula towns and Kraków,
- Subcomponent 3B – Protection of Sandomierz and Tarnobrzeg,
- Subcomponent 3C – Passive and Active Protection in Raba Sub-basin,
- Subcomponent 3D – Passive and Active Protection in San Basin.

Two other Components shall be implemented under the Project, but they do not contain construction works associated with Works Contract actions, i.e.: Component 4 Institutional Strengthening and Enhanced Forecasting, and Component 5 Project Management and Studies.

Description of the Project may also be found in the Environmental and Social Management Framework published at e.g. websites of the World Bank¹ and of the Odra-Vistula Flood Management Project Coordination Unit². A detailed description of the Project is also given in PAD³ and in the “Project Operations Manual”.⁴

¹ <http://documents.worldbank.org/curated/en/717671468333613779/Poland-Odra-Vistula-Flood-Management-Project-environmental-and-social-management-framework>;

² http://www.odrapcu.pl/popdow_oprojekcie.html;

³ <http://documents.worldbank.org/curated/en/320251467986305800/Poland-Odra-Vistula-Flood-Management-Project>.

2 Contract Description

Contract 3D.2/2 *Expansion of the left and right embankment of the Biała River in the Tarnow Municipality and the City of Tarnow*, the City of Tarnów forms a part of Subcomponent 3D under the Odra-Vistula Flood Management Project.

The Project Implementation Unit (PIU) for the Contract is the State Water Holding Polish Waters, in the name of which the Regional Water Management Authority in Cracow acts, with its office at 22. Marszałka J. Piłsudskiego Street, 31-109 Cracow.

An objective for Contract implementation is to obtain the required safe freeboard over the entire length of the embankments in order to assure safety for people, industrial plants, houses and outbuildings, and to protect technical facilities against catastrophic effects of flood flows in the River Biała in Biała, Commune of Tarnów, and in the city of Tarnów.

In accordance with the Works Contract, the planned works comprise extension of the existing flood embankments of the Biała River, including a backwater embankment for the Wątok Stream, through their widening and through rising to elevation of a safe freeboard (by about 0.15 – 0.50 m, on average), and extending the left embankment of the River Biała (forming a closure for the floodplain at Krakowska Street in Tarnów).

The scope of works comprises sealing of the embankments using an anti-filtration membrane in the embankment crest, development or necessary roads at the embankment in the area beyond the embankment, reconstruction of the existing sections of roads and development of new ones within the embanked area, extension and construction of embankment ramps, extension of concrete walls, which – in the existing state – form an integral part of the flood embankments, redevelopment of or repairs to the existing embankment culverts, development of U-turn yards, and necessary redevelopment of the existing facilities (fences, water-supply pipes, sewerage system, gas piping, teletechnical, heating, and power lines).

The total length of the embankments under the Works Contract is about 13 km.

The total area of embankments to be extended is about 170 ha.

Detailed description of objects under the Contract is given in Chapter 2.2.

2.1 Contract Location

The Works Contract is located at local embankment chainage:

- of the right embankment km: 0+000-3+234, 3+234-4+651, 5+346-5+925 and 5+925-7+170,
- of the left embankment km: 0+000-3+134, 3+134-4+516, 4+516-5+995.

It corresponds with the register chainage of the River Biała:

- of the right embankment km: 0+000-2+320, 2+956-3+120, 3+145-4+534, 5+560-5+860 and 5+870-6+700; of the left embankment km: 0+000-6+060.

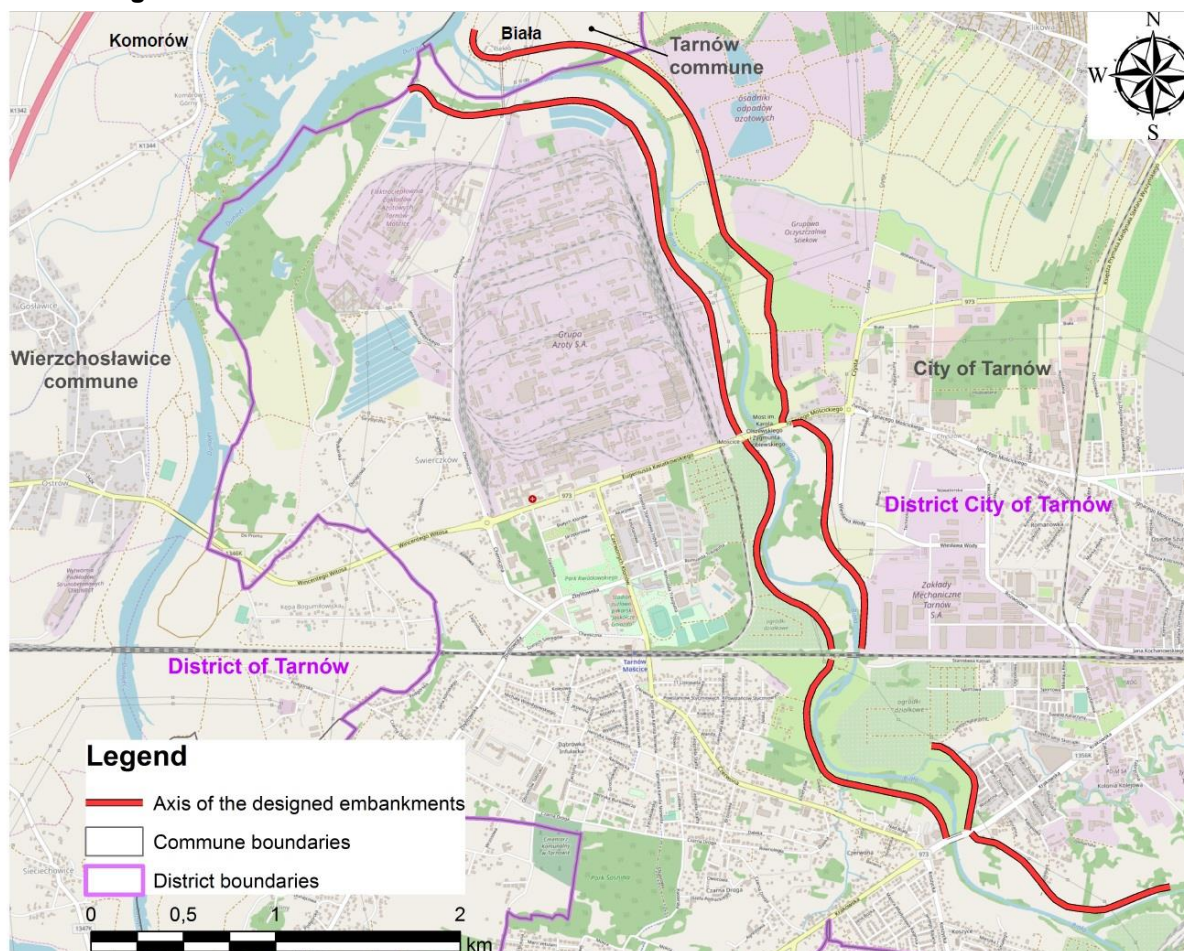
The Works Contract is located in Małopolskie Province, in the City of Tarnów, and in Biała (Commune of Tarnów) and – in a small section (about 8 m) – in the Town of Komorów

⁴ http://www.odrapcu.pl/doc/POM_PL.pdf; a binding English version is available at: <http://www.odrapcu.pl/doc/POM/ENG.pdf>

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(Commune of Wierchosławice). The location of Contract is presented on a figure given below (Drawing no. 1) and in Appendix no. 5 to this EMP – Map of Works Contract Location.

Drawing no. 1. Contract location



2.2 Specificity of objects comprised by the Contract

The Works Contract shall comprise expansion of the right flood embankment and the left flood embankment (Class II hydraulic structures) for the River Biała over the total length of about 13 km.

The proposed works were included on List no. 1 under item “ID 1_635_W” of Appendix no. 2 titled “*Investments which do not adversely affect the achievement of good status of water or which do not deteriorate the status of water*” to the Master Plan for the Vistula River Basin (2014)⁵. Due to the expected lack of adverse impact on environmental objectives, the Works

⁵ The MasterPlan for the Vistula River Basin and for the Odra River Basin remains a result of establishments made with the European Committee, which led to implementation of “*Action Plan for Strategic Planning in Water Management*” by Poland (resolution of the Council of Ministers of July 2, 2013, ref. no.: 118/2013).

The MasterPlans remained an update to water management plans, since their previous update in 2015, and subsequently their results – in terms of investments, which affect or which may affect the status of water bodies – were transferred to the updated water management plans (adopted by the resolution of the Council of Ministers of October 18, 2016 [OJ item no. 1967]).

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Contract has not been entered to the currently binding Water Management Plan for the Vistula River Basin (OJ of 2016, item 1911).

However, the Works Contract has been included on a list of strategic measures in the Flood Risk Management Plan for the Vistula River Basin (OJ of 2016, item 1841) – List of strategic measures planned for implementation in the years 2016 – 2021 for the Vistula river-basin, ID74484.

Basic parameters of the embankment designed as an earth-fill embankment are as follows:

- Embankment class – II
- Design flow $p = 1\%$
- Control flow $p = 0.3\%$
- Embankment length - about 13 km
- Width of embankment crest – 3.0 m
- Crest inclination: 2% towards the embanked area,
- Riverside slope inclination:
 - Designed: 1:2 for the right embankment and for the left embankment,
 - With the following exceptions: 1:2.5 for the right embankment at chainage km 3+234-3+454, 3+835-4+120, and for the left embankment at chainage km 4+516-5+909, in reference to the existing condition,
- Landside slope inclination:
 - Designed 1:2 for the right embankment and for the left embankment, except for the following:
 - 1:2.5 for the left embankment at chainage km 4+516-5+909, in reference to the existing condition,

The Works Contract shall be implemented within the total area of about 170 ha and it shall cover the following elements, e.g.:

- sectional rising of the crest elevation for the existing embankment, by about 0.15-0.50 m, on average;
- sectional leveling of the embankment crest and of the slope inclination;
- sealing of the embankments through development of a cement-bentonite anti-filtration membrane at a depth of 1.0 m b.g.l., with minimum thickness of 0.4 m and depth of 8.0 m, which is to minimize the risk of leaks on the landside and to reinforce the embankment body. It shall be done using CDMM - Continuous Deep Mixing Method, of materials remaining a mix of cements, pozzolan additions, and fillers containing bentonite loam. Elevation of the bottom edge of the membrane shall be placed above the level of non-permeable soil layers, so it would not “close” the ground space below;
- extension of the left embankment in its final section over a length of about 80 m and connecting it with the existing road embankment at Krakowska Street;
- extension of the right embankment, which simultaneously forms a backwater embankment for the Wątok Stream over a length of about 470 m;
- Development of earth-fill embankment at local chainage of the right embankment km 2+440-2+750, with technological road at the crest, where there currently is no embankment, and its beginning and end shall be linked with the existing embankment;

- at chainage km 0+172-0+217, 0+591-0+650, and 1+233-1+270 of the left embankment, where the existing slopes have been replaced with reinforced-concrete walls, extend them through raising to the elevation of embankments for the Biala River to be extended by about 0.2-0.5 m;
- over the total length of about 1,100 m, at chainage km 1+425 – 1+600, 1+663 – 2+513, the slope of the left embankment on the landside shall be cut-off and stabilized with a concrete wall made of precasted elements with a barrier;
- slopes of the embankment at the embanked area and in the area beyond the embankment – at the pumping station – shall be protected with open-work slabs in the area of Bródka Stream at the left embankment, and in the area of overpasses for piping owned by the Grupa Azoty (Azoty Group), which run over the left embankment and over the right embankment;
- extend the existing sections of roads at the embankment and develop new ones (technological roads) in the area beyond the embankment and within the embanked area, including development of U-turn yards for both of the embankments. Width of designed roads was adopted as 3.0 m, whereas width of roads to be redeveloped shall correspond with the existing width, i.e. from 3.0 m to 6.0 m. It is expected to reinforce new sections of roads with breakstone on sand ballast, whereas the reconstructed sections of roads shall be made of the original material, which has been applied so far. In sections, where one cannot develop roads at the embankment due to the existing land development, the roads shall run on the embankment crest, which would be reinforced with breakstone on sand ballast. Average dimensions of the yards shall amount to min. 12.5 m x 12.5 m, and they shall be reinforced the same way as roads at the embankments;
- develop two pass-byes on the left embankment, with a length of 25 m, slant of 1:2, and road width of 5.0 m;
- extend 16 embankment ramps and construct 8 on the right embankment;
- extend 16 embankment crossings and construct 7 on the left embankment. The aforementioned crossings shall be reinforced using concrete slabs on sand ballast. On the embankment crest – in places of the aforementioned crossings – embankment turnpikes shall be assembled;
- the embankment crest at the passable embankment ramp shall be reinforced with concrete slabs, and at roads – with breakstone, and in the remaining sections a mix of grass shall be provided;
- redevelopment of 7 embankment culverts on the right embankment;
- repairs to one embankment culvert at Chyszkowski Stream at chainage km 1+809 of the right embankment, along with repairs to the bottom and to slopes through cleaning, and with supplementation of shortage in concrete placed downstream of the outlet from the culvert;
- extension of one embankment culvert at the Stary Wątok Stream at local chainage km 5+482 – through provision of an additional tube, along with protection of the bottom and of slopes of the stream with open-work slabs placed sectionally upstream of the inlet and downstream of the outlet;
- redevelopment of one embankment culvert at chainage km 3+764 of the left embankment;
- embankment culvert with two openings, which is located at the Bródka Stream at chainage km 5+320, shall be extended by the third tube, along with redevelopment of

a section of the Bródka Stream in front of the inlet in a reach of 5 m and downstream of the outlet in a reach of 24 m;

- develop a pumping station with a service road allowing for the quick access and for draining the site and discharging water to the Bródka Stream, along with an outlet for rainfall water;
- Demolish embankment culverts: right embankment at local chainage km 3+832 of the embankment, left embankment at local chainage km 2+537 of the embankment;
- modernization (comprising sealing of the inlet abutments and of the outlet abutments, and desilting of the openings) of 3 embankment culverts at local chainage km 0+196, 0+600 and 1+250 of the left embankment;
- concrete stairs with a width of 1.0 m shall be developed in the area of each culvert, where there are no roads on the riverside. Reconstruction of the stairs on the left embankment in the area of Azoty Group Plant and at the Bródka Stream. Demolition of the remaining stairs on the embankments;
- Redevelop or protect the existing technical facilities, which collide with the designed solutions (networks: water-supply, sewerage, teletechnical, power, gas, heating);
- Demolition of the existing piping (water-supply, sewerage), the water-supply chamber, and the well, which currently are out-of-order – as indicated by their administrator, and which cross the embankment or are expected to be removed;
- Demolish the existing fencing for the time of performance – fences shall be restored after completion of the works;
- Redevelop ditches supplying and discharging water to and from embankment culverts within the embanked area and in the area beyond the embankment through application of concrete and open-work protection at the bottom and on slopes, and through land levelling, including repairs to stairs, platforms, and barriers, along with redevelopment of culverts (beyond the embankments) within ditches located in the area beyond the embankment and within the embanked area;
- Develop concrete hectometer posts on the embankment crest;
- Repair, redevelop and construct descend roads forming a junction between the roads at the embankment and the adjacent road network, including Tęczowa Street;
- Repair the existing access roads, which would be damaged during the performance;
- Log trees in the total amount of about 3,000 pieces and shrubs in the area of about 1.5 ha;
- Provide replacement planting in the amount not less than 1,000 trees, while applying species compliant with potential natural vegetation and adapted to local habitat conditions – species of trees and the quantities shall correspond with native species and with the quantity of logged trees; the planting shall be done as close to the contract site as possible, on plots owned by the Municipality of Tarnów and/or by the Commune of Tarnów;
- Demolish a house located at register plot 9/4 – area no. 199 Tarnów;
- Demolish 1 outbuildings(on the right embankment) within the scope of works to be performed;
- Redevelop the existing spots of geodetic control network;
- Develop protective (technical) strips with a width of 3.0 m, on average, from the embankment slope's foot or from the road at the embankment;
- Level land on the riverside or on the landside to keep the natural drop of the embankment;

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- Develop sidewalks used for pedestrian traffic from every maneuvering yard to the embankment lock for the purpose of maintenance and service;
- Provide the embankment culverts with such accompanying facilities as: landings, platforms, barriers, stairs;
- Redevelop the existing barriers on the left embankment at the ramp leading to a footbridge for pedestrians;
- Reconstruct road culverts in case of damaging them during the performance;
- Develop revetments for the riverside slope of the left embankment using geo-grid due to the small distance between the embankment and the river-bed.

All elements of the Works Contract and their location have been graphically presented in Appendix 10 to this EMP.

3 Institutional, legal and administrative conditions

3.1 Institutions involved in implementation of the Contract

Małopolski Board of Amelioration and Water Structures in Cracow – performing tasks of the Małopolskie Province Marshal – has been the investor for the Contract until December 31, 2017. From January 1, 2018 the Contract Investor is a newly assigned unit, i.e. State Water Holding Polish Waters, in the name of which the Regional Water Management Authority in Cracow acts (PGW WP, RZGW in Cracow).

Additionally, on the stage of performance and of operation, implementation of the Contract may require involvement of public administration units on central, regional, and local levels.

The Odra-Vistula Flood Management Project Coordination Unit shall be responsible for ongoing coordination and monitoring of Project implementation.

3.2 Binding Polish law acts with regard to the environment

In accordance with the Polish Law the investment process related to the 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 this EMP. The number and contents of legal acts given in Appendix 3 may be modified along with adjustments to environmental protection provisions valid in the territory of Poland. The Contractor is also obliged – except for application of rules determined under this EMP – to apply valid provisions of the state law in the scope of environmental protection.

3.3 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.a. web pages of the World Bank (WB)⁶ and the Odra-Vistula Flood Management Project Coordination Unit⁷.

3.4 World Bank requirements

The discussed Contract shall be co-financed by e.g. the International Bank for Reconstruction and Development (World Bank). As a consequence, the conditions of its implementation, with regard to environmental protection, are compliant with the following policies of the World Bank⁸:

- OP 4.01 – on the environmental impact assessment,
- OP 4.04 – on natural habitats, and
- OP 4.11 – on the physical cultural resources.

⁶[http://documents.worldbank.org/curated/en/717671468333613779/Poland-Odra-Vistula-Flood-Management-Project-environmental-and-social-management-framework;](http://documents.worldbank.org/curated/en/717671468333613779/Poland-Odra-Vistula-Flood-Management-Project-environmental-and-social-management-framework)

⁷ [http://www.odrapcu.pl/popdow_oprojekcie.html;](http://www.odrapcu.pl/popdow_oprojekcie.html)

⁸ <https://policies.worldbank.org/sites/PPF3/Pages/Manuals/Operational%20Manual.aspx>

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

3.5 The current condition of EIA procedures for the Works Contract

The analyzed Works Contract is qualified, in accordance with the Regulation of the Council of Ministers of November 9, 2010 on investments which may significantly affect the environment (Article 3 (1) item 65 of the Regulation), to so-called Group II, which comprises investments which may potentially affect the environment significantly. In conformity with Article 59 (1) item 2 and Article 63 (1) of the Act of October 3, 2008 *on providing information on the environment and its protection, public participation in the environmental protection, and on environmental impact assessments* (EIA Act), such investments require provision of an environmental impact assessment, if a unit proper for the issuance of a decision on environmental conditions decides – through proceeding – about such an obligation. In that case the unit was – in accordance with Article 75 (1) item 1 letter I) – the Regional Director for Environmental Protection in Cracow.

Decision of the Regional Director for Environmental Protection in Cracow on environmental conditions for the subject Works Contract comprising extension of the left embankment and of the right embankment of the Biała River in the City of Tarnów was issued on 03/08/2016 (ref. no.: ST-I.4233.2.2015.MB). A copy of the aforementioned decision has been reproduced under Appendix 4 to this EMP.

Decision of the Regional Director for Environmental Protection in Cracow dated 03/08/2016 on environmental conditions has been preceded with an environmental impact assessment. The assessment has been done based upon an environmental inventory performed from July to September 2014. The environmental inventory remains a basic document – developed as a practice – in the scope of collecting, analyzing and providing information on elements of the natural environment, which form a basis for the impact assessment. It is worthy to emphasize that none of the provisions of law determines the time of validity for the inventory. Its validity is verified at the issuance of a decision on environmental conditions, and in case the environmental elements would be changed or they would prove a trend of changes, the decision on environmental conditions may state an obligation to provide a repeated environmental impact assessment. It means that the environmental inventory's validity is not legally limited in time and conditions contained therein shall be deemed – at the issuance of the decision on environmental conditions – as binding after issuance of an investment project implementation permit, if the circumstances defined above have not occurred.

In case of the analyzed Contract the environmental impact assessment procedure was implemented as follows:

- Małopolskie Board of Amelioration and Water Structures in Cracow, acting through a Proxy (representative of Ecological Techniques and Investment Implementation Agency mkm PERFEKT Sp. z o.o., 1/411. Rzemieślnicza Street, 30-363 Cracow), applied on 02/13/2015 to the Regional Director for Environmental Protection in Cracow for the issuance of a decision on environmental conditions for the Works Contract comprising

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extension of the left embankment and of the right embankment of the Biala River in the City of Tarnów.

- In accordance with valid law, information on submission of the application has been published in the Publicly Accessible Data Register (PDWD), on the website of Center of Environmental Information – Ekoportal <http://www.ekoportal.gov.pl> – in data sheet.
- As the number of parties exceeds 20, therefore – in accordance with delegation included in Article 74 (3) of the EIA Act – Article 49 of the APC was applied for the proceeding, and the parties were notified about any actions of the authorities by notifications and announcements published in a common way, on notice boards of the following: office of Site Issues Department in Tarnów of the Regional Directorate for Environmental Protection in Cracow (address: 5-9. Solidarności Alley, 33-100 Tarnów), City Office of Tarnów (address: 2. Mickiewicza Street, 33-100 Tarnów), Municipality Office of Tarnów (address: 19. Krakowska Street, 33-100 Tarnów), and Commune Office of Wierzchosławice (address: 550. Wierzchosławice, 33-122 Wierzchosławice), as well as in the Public Information Bulletin of the Regional Directorate for Environmental Protection in Cracow at <http://bip.krakow.rdos.gov.pl>.
- The Regional Director informed the parties (in the notification dated 02/25/2015, ref. no.: ST-I.4233.2.2015.MB) about the commencement of proceeding to issue a decision on environmental conditions for the Works Contract comprising extension of the left embankment and of the right embankment of the Biala River in the City of Tarnów. The notification has been published through placement on notice boards of the following: office of Site Issues Department in Tarnów of the Regional Directorate for Environmental Protection in Cracow (from 02/27/2015 to 03/16/2015), City Office of Tarnów (from 02/27/2015 to 03/13/2015), Municipality Office of Tarnów (from 03/06/2015 to 03/20/2015), and Commune Office of Wierzchosławice (from 03/02/2015 to 03/17/2015), as well as in the Public Information Bulletin of the RDOŚ in Cracow at <http://bip.krakow.rdos.gov.pl>.
- After provision of an analysis along with the documentation, the Investor's Proxy was called (note dated 04/13/2015, ref. no.: ST-I.4233.2.2015.MB) to supplement the investment data sheet. Updating with data indicated in the aforementioned call was necessary to determine the possible impact of the planned Works Contract on the environment, and therefore to identify an obligation or no need to provide an environmental impact assessment for the Works Contract.
- The proceeding parties were informed about the aforementioned call of the Proxy to supplement the investment data sheet for the proceeding in progress in case of the issuance of a decision on environmental conditions through an announcement dated 04/13/2015, ref. no.: ST-I.4233.2.2015.MB, which was placed on notice boards of the: Site Issues Department in Tarnów RDOŚ in Cracow (from 04/14/2015 to 04/29/2015), City Office of Tarnów (from 04/15/2015 to 04/29/2015), Municipality Office of Tarnów (from 04/20/2015 to 05/05/2015), Commune Office of Wierzchosławice (from 04/16/2015 to 05/04/2015), and at the website <http://bip.krakow.rdos.gov.pl>.

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- In reference to the aforementioned call the updated investment data sheet was provided (note dated 05/22/2015, ref. no.: BTT-174/MN/2015, reception date: 05/26/2015).
- After analyzing the collected evidence, the Regional Director identified (decision dated 06/11/2015, ref. no.: ST-I.4233.2.2015.MB) that it is obligatory to perform an environmental impact assessment for the planned Works Contract comprising extension of the left embankment and the right embankment of the Biala River in the City of Tarnów, and he simultaneously determined the range of environmental impact report – in accordance with the requirements determined under Article 66 of the EIA Act; and indicated issues which shall be included in the report in details.
- An announcement on the issuance of the aforementioned resolution was published through placement on notice boards of the: Site Issues Department in Tarnów RDOŚ in Cracow (from 06/11/2015 to 06/26/2015), City Office of Tarnów (from 06/11/2015 to 06/25/2015), Municipality Office of Tarnów (from 06/15/2015 to 06/29/2015), Commune Office of Wierzchosławice (from 06/12/2015 to 06/29/2015), and at the website <http://bip.krakow.rdos.gov.pl/>. Information on the issued resolution was moreover included in the PDWD.
- As a consequence, acting in accordance with contents of Article 63 (5) of the EIA Act, the Regional Director suspended the proceeding on the issuance of a decision on environmental conditions for the Works Contract in question comprising extension of the left embankment and of the right embankment of the Biala River in the City of Tarnów with (decision dated 06/11/2015, ref. no.: ST-I.4233.2.2015.MB), until provision of the environmental impact report. Information on the decision has been published in the PDWD.
- On 09/14/2015 the Investor's Proxy provided – along with a note dated 09/11/2015, ref. no.: BTT-198/MN/2015 – an environmental impact report for the Works Contract in question – “Environmental Impact Report for the Works Contract titled >>Extension of the left embankment and of the right embankment of the Biala River in the City of Tarnów<<”. Information on the report has been published in the PDWD.
- Acting in accordance with Article 97 (2) of the APC, the Regional Director for Environmental Protection in Cracow restarted the suspended administrative proceeding on the issuance of a decision on environmental conditions for the Works Contract (decision dated 09/21/2015, ref. no.: ST-I.4233.2.2015.MB). An announcement on the issuance of a decision has been published through placement on notice boards of the following: office of Site Issues Department in Tarnów of the RDOŚ in Cracow (from 09/21/2015 to 10/06/2015), City Office of Tarnów (from 09/24/2015 to 10/08/2015), Municipality Office of Tarnów (from 09/24/2015 to 10/09/2015), and Commune Office of Wierzchosławice (from 09/22/2015 to 10/07/2015), as well as at the website <http://bip.krakow.rdos.gov.pl/>. Information on the resolution has been published in the PDWD.
- After analyzing the documentation provided it was deemed that the report submitted during the proceeding on the issuance of a decision on environmental conditions for the Works Contract comprising extension of the left embankment and of the right

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embankment of the Biala River in the City of Tarnów meets requirements determined under Article 66 of the EIA Act and in the decision of the Regional Director for Environmental Protection in Cracow dated 06/11/2015, ref. no.: ST-I.4233.2.2015.MB, and therefore it contains all data sufficient for determination of the Works Contract's implementation conditions.

- After analyzing all of the evidence, acting based upon Article 77 (1) item 2 of the EIA Act, the Regional Director for Environmental Protection in Cracow applied (note dated 10/19/2016, ref. no.: ST-I.4233.2.2015.MB) to the State District Sanitary Inspector in Tarnów – being a unit relevant for providing an opinion on the Works Contract in sanitary and hygiene terms – with a request to issue an opinion on implementation conditions for the Works Contract prior to the issuance of a decision on environmental conditions. In the announcement of 10/19/2016, ref. no.: ST-I.4233.2.2015.MB, the proceeding parties were informed about the aforementioned request for opinion. The announcement was published through placement on notice boards of the: Site Issues Department in Tarnów RDOŚ in Cracow (from 10/19/2015 to 11/03/2015), City Office of Tarnów (from 10/19/2015 to 11/02/2015), Municipality Office of Tarnów (from 10/19/2015 to 11/02/2015), Commune Office of Wierzchosławice (from 10/22/2015 to 11/06/2015), and at the website <http://bip.krakow.rdos.gov.pl/>.
- The State District Sanitary Inspector in Tarnów provided a positive opinion (sanitary opinion no. 343/2015 dated 11/16/2015, reception date: 11/19/2015, ref. no.: NNZ.420.160.2015.3) for environmental conditions for the aforementioned Works Contract in terms of hygiene and health requirements – while keeping all technical, technological and organizational solutions resulting from the environmental impact report, protecting the surrounding and the environment, and – as a result – health of people against adverse impact of the designed Works Contract, both: on the implementation stage, as well as in the operational phase. Those requirements were included among conditions imposed onto the Investor by the environmental decision.
- Acting based upon Article 33 (1) and Article 79 (1) of the EIA Act, the Regional Director for Environmental Protection in Cracow informed the proceeding parties (announcement of 11/24/2015, ref. no.: ST-I.4233.2.2015.MB) and simultaneously notified the public about the possibility of acknowledging the EIA Report and complete case documentation for the proceeding on the issuance of a decision on environmental conditions for the planned Works Contract considering expansion of the left embankment and of the right embankment of the Biala River in the City of Tarnów, and also about the possibility of providing remarks and conclusions on the aforementioned Works Contract within 21 days – from 11/27/2015 to 12/18/2015, inclusive. Simultaneously, the public was informed about the: subject of the decision, which is to be issued in that case; relevant authorities issuing the decision; and proper authorities for the issuance of opinions. The announcement was published through placement on notice boards of the Site Issues Department in Tarnów RDOŚ in Cracow (from 11/24/2015 to 12/21/2015), City Office of Tarnów (from 11/27/2015 to 12/19/2015), Municipality Office of Tarnów (from 11/24/2015 to 12/15/2015), Commune Office of Wierzchosławice (from 11/25/2015 to 12/10/2015), and at the website <http://bip.krakow.rdos.gov.pl/>, where a complete version of the EIA Report was also made available.

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- As a consequence of the aforementioned notification none of the proceeding parties or other interested persons informed their will to acknowledge the collected case documentation.
- The Investor's Proxy informed the Regional Director for Environmental Protection in Cracow about changes in the application – resulting from the progress of designing (note dated 12/07/2015, reception date: 12/10/2015, ref. no.: BTT-215-MN/2015). Those changes did not require new establishments on sanitary and hygiene conditions and the assurance of repeated participation of the public.
- The Regional Director – acting based upon Article 10 (1) and Article 49 of the APC, and due to Article 74 (3) of the EIA Act – informed the proceeding parties (notification dated 01/11/2016, ref. no.: ST-I.4233.2.2015.MB) about completing the evidence hearing for the issuance of a decision on environmental conditions for the subject Works Contract, and about the possibility of acknowledging and commenting collected evidence and materials, and informed requirements prior to the issuance of a decision. The notification was published through placement on notice boards of the: Site Issues Department in Tarnów of the RDOŚ in Cracow (from 01/11/2016 to 01/26/2016), City Office of Tarnów (from 01/11/2016 to 01/25/2016), Municipality Office of Tarnów (from 01/11/2016 to 01/25/2016), and Commune Office of Wierzchosławice (from 01/14/2016 to 01/25/2016), as well as at the website <http://bip.krakow.rdos.gov.pl>.
- None of the proceeding parties commented the collected evidence and materials, based upon which a decision on environmental conditions for the subject Works Contract was to be issued.
- Analyses of impact on particular elements of the environment done for the Works Contract, as given in the EIA Report, did not prove it necessary to establish restricted use areas.
- Due to the range of the Works Contract impact reaching the contract's vicinity it was deemed that the planned Works Contract shall not link with a risk of impact beyond the boundaries of the Republic of Poland; thus, the decision stated the absence of transboundary impact on the environment.
- After analyzing the collected evidence it was stated that implementation of the subject Works Contract – at application of mitigation measures and conditions determined in the decision on environmental conditions – shall not cause excessive nuisance to the environment.
- The decision on environmental conditions for the Works Contract has been issued by the Regional Director for Environmental Protection in Cracow on March 8, 2016 (ref. no.: ST-I.4233.2.2015.MB). The proceeding parties have been notified about that in the Announcement of the Regional Director for Environmental Protection in Cracow dated March 8, 2016 (ref. no.: ST-I.4233.2.2015.MB). This was also the way the decision was published.
- The proceeding parties did not claim against the decision to the General Director for Environmental Protection within a legal deadline of 14 days; thus, the decision became final on April 9, 2016 r.

4 Description of environmental elements in vicinity of the Works Contract

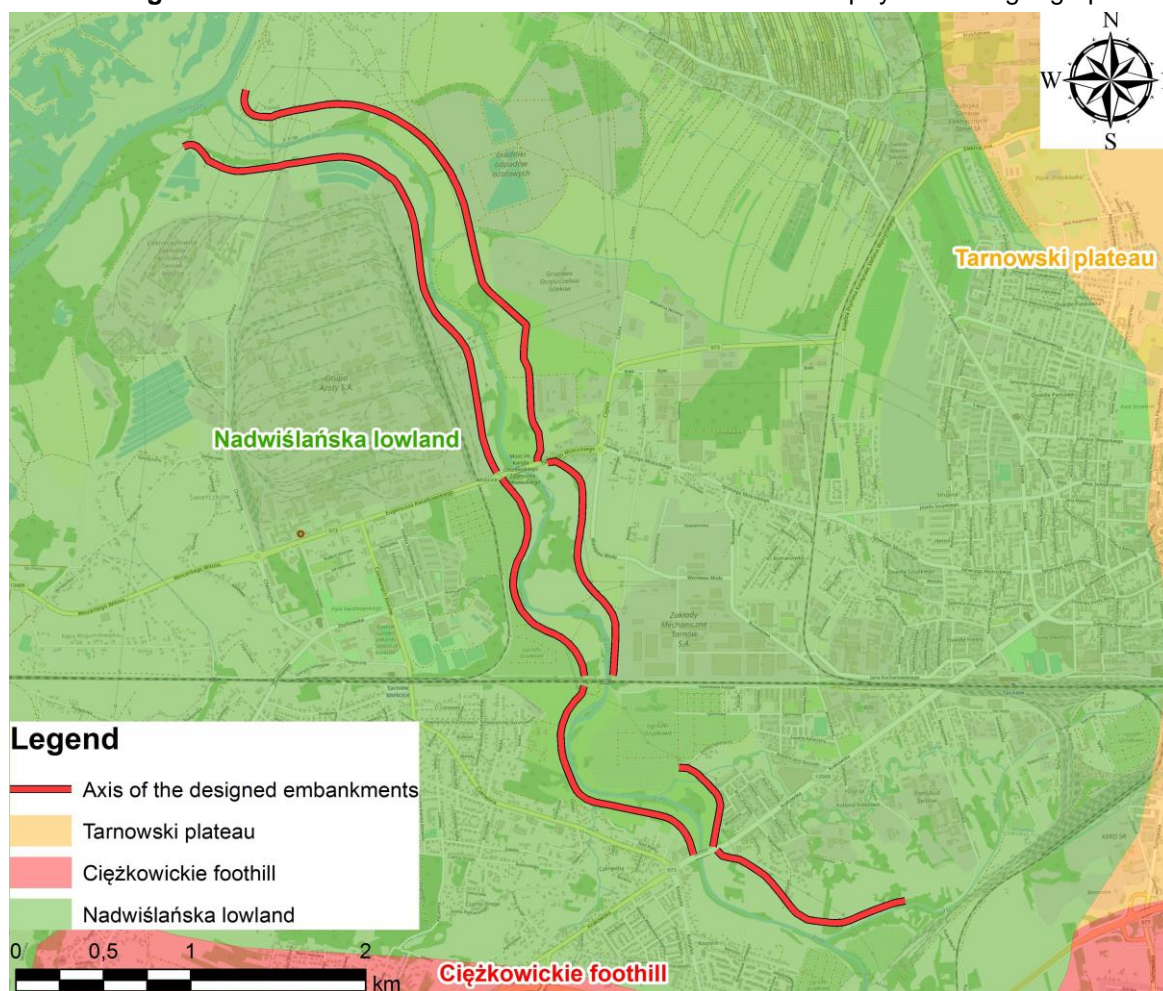
4.1 Land surface, landscape, and geological structure

According to the physico-geographical regionalization by Kondracki the embankment to be extended is located within the mezoregion: Nadwiślańska Lowland (512.41):

- megaregion: Carpathian Mountains (with Podkarpacie);
- province: Western Carpathian Mountains with Podkarpacie;
- subprovince: Northern Podkarpacie;
- macroregion: Sandomierska Valley;
- mezoregion: Nadwiślańska Lowland.

Location of the Works Contract in reference to physical and geographic units is presented on a drawing given below (Drawing no.2).

Drawing no. 2. Location of the Works Contract in reference to physical and geographic units



Source: own materials based upon *Physico-geographical mesoregions of Poland: Verification and adjustment of boundaries on the basis of contemporary spatial data*, "Geographia Polonica", 2018, based upon a paper by Kondracki J.

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Nadwiślańska Lowland – remaining a part of Sandomierska Valley – covers a wide valley of Vistula from Cracow to Zawichost. The valley is filled with quaternary alluvial sediments with thickness of several meters. Except for a flood terrace it is specified by a higher sand terrace (partially with sand dunes) and a terrace covered by loess. Miocene maritime sediments are placed underneath sand and fluvisols brought by rivers, and they contain rich deposits of sulphur, which is extracted using open-cast and underground smelting methods in the area of Tarnobrzeg. The level of transformation for the natural environment is relatively small and reaches significant level only in vicinity of Cracow and Tarnobrzeg.⁹

The River Biala provides small drops of the river bottom. It is supplied with rainfall water and thawing snow, and the flow size and dynamics depend on the volume and intensity of precipitations, permeability of the subbase, and supply level.

The river cuts off from natural flood plains with flood embankments over a significant length.

The area of Contract implementation is located within a geological unit called Przedkarpackie Depression. Older subbase of that area is made of middle Tertiary formations – Miocene – shaped in a form of slate, compacted, and dusty clays, called as Krakowieckie clays. Quaternary Pleistocene sediments lay on tertiary formations, and they form loess and Holocene sediments in the form of alluvial soils and sands

Alluvial soils forming dusty clay, compacted dusty clay, loamy sand, and alluvial sand and gravel. Dusty clay are located underneath the land surface, whereas sand and gravel are placed at the bottom of boreholes.

4.2 Climate

According to regionalization of climate in Poland (Woś A., 1993) the Works Contract site is located in region no. XXVII Tarnowsko-Rzeszowski. The region covers the eastern part of Carpathian Foothills mainly. Its range is established by clear climatic boundaries. In reference to the remaining ones, it is specified by relatively often occurring very warm days with recorded rainfall. Frost, moderate low temperature without overcast and rainfall also occur more often than in many other regions.¹⁰ The warmest month in Tarnów is July with average temperature of 19.4°C, whereas January is the coldest month – with average temperature of -4.2°C. A month with the smallest volume of precipitation is February (30 mm, on average), whereas the most extensive rainfall occurs in June – 99 mm, on average.¹¹

4.3 Air quality

Rate of air pollution depends on the: volume of emission from emitters located within a particular area, inflow of pollutions from other areas, climate and meteorological conditions, and land development and lay of land.

The main source of air pollution within the city is so-called anthropogenic emission resulting from actions of human. Anthropogenic emission includes both: emission from power and industrial plants, as well as low emission from communal units (boiler-plants, individual domestic furnaces, and private plants) and traffic emission.

⁹ Kondracki J., *Geografia regionalna Polski*, Wydawnictwa Naukowe PWN, Warsaw 2001.

¹⁰ Woś A., *Regiony klimatyczne Polski w świetle częstości występowania różnych typów pogody*; Zeszyty Instytutu Geografii i Przestrzennego Zagospodarowania PAN, no. 20, 1993.

¹¹ <https://pl.climate-data.org>

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Main pollution sources in the area of Tarnów are as follows, e.g.:¹²

- Emission of pollution associated with traffic;
- Emission from industrial plants;
- Emission of gases and dusts from individual domestic furnaces and from small plants, which are not required to have a permit for emission of gases and dusts to the air.

The quality of air was tested in Tarnów in 2016 by the State Environmental Protection Inspectorate in two spots: at Bitwy pod Studziankami Street and at Bł. Ks. Romana Sitko Street. The following substances were examined:

- Automatic measurement: nitrogen dioxide, ozone, sulphur dioxide, carbon monoxide, suspended particulates PM10
- Manual measurement: suspended particulates PM2.5, suspended particulates PM10, arsenic in PM10, benzo(a)pyrene in PM10, cadmium in PM10, nickel w PM10, lead in PM10, benzene¹³

In terms of criteria established for the protection of health within the City of Tarnów excessive concentration was identified in 2016 for the following: suspended particulates PM10 and benzo(a)pyrene in PM10¹⁴ dust; whereas in 2017 for the following: suspended particulates PM10 and benzo(a)pyrene in PM10 dust, and suspended particulates PM2.5.¹⁵

Air quality tests were not done in Biała and in Komorów.

4.4 Soils and grounds

The Contract area is surrounded by land, where single houses of Biała, industrial areas, arable fields, wasteland, garden allotments and housing estates of Tarnów are located.

In accordance with soil and agricultural map¹⁶ fluvisols are present within the area of Works Contract.

4.5 Surface water

The Works Contract area is located within the Vistula River Basin, within the boundaries of Upper Western Vistula water region (until the end of 2017 that area belonged to the Upper Vistula water region before enforcement of the Act of July 20, 2017 Water Law).

The River Biała is a right tributary river of the Dunajec River.

The Biała River has provided low drops of the river bottom. It is supplied by precipitation water and water of thawing snow, and the volume and dynamics of the flow depend on the size and intensity of rainfall, permeability of the subbase, and inflow rate.

The river cuts off from natural flood plains with flood embankments over a significant length.

A water-gauge on the River Biała is located in Koszyce Wielkie (in a distance of about 2 km from the Contract implementation area). In accordance with records of the years 1981-2010, hydrological characteristics of the River Biała are as follows:

¹² Based upon Environmental Protection Programme for the City of Tarnów for the years 2017-2024, including a short-term strategy for the years 2017-2020.

¹³ Ibidem

¹⁴ Report on the environment for Małopolskie Province in 2016.

¹⁵ Report on the environment for Małopolskie Province in 2017.

¹⁶ <http://miip.geomalopolska.pl>

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- SSQ 9.550 m³/s
- SNQ 1.391 m³/s
- NNQ 0.600 m³/s

In conformity with provisions of the updated “Water Management Plan for the Vistula River Basin” (Water MP), as adopted with the Regulation of the Council of Ministers of October 18, 2016, the Works Contract shall be implemented within the following two catchments of bodies of water:

- Biała od Rostówki do ujścia (PLRW 200014214899),
- Wątok (RW200012214889).

According to the typology adopted under the Water MP the type of BSW Biała od Rostówki do ujścia is 14 – small flysch river. It has not been set out as a heavily modified body of water.

BSW Wątok is 12 – flysch stream. It has been set out as heavily modified body of water.

The status of BSW Biała od Rostówki do ujścia has been assessed as bad, which is a result of weak ecological status (determining coefficients: ichthyofauna, phytobenthos) and good chemical status. As a consequence of such an assessment, the BSW in question has been determined as under risk of not achieving environmental objectives.

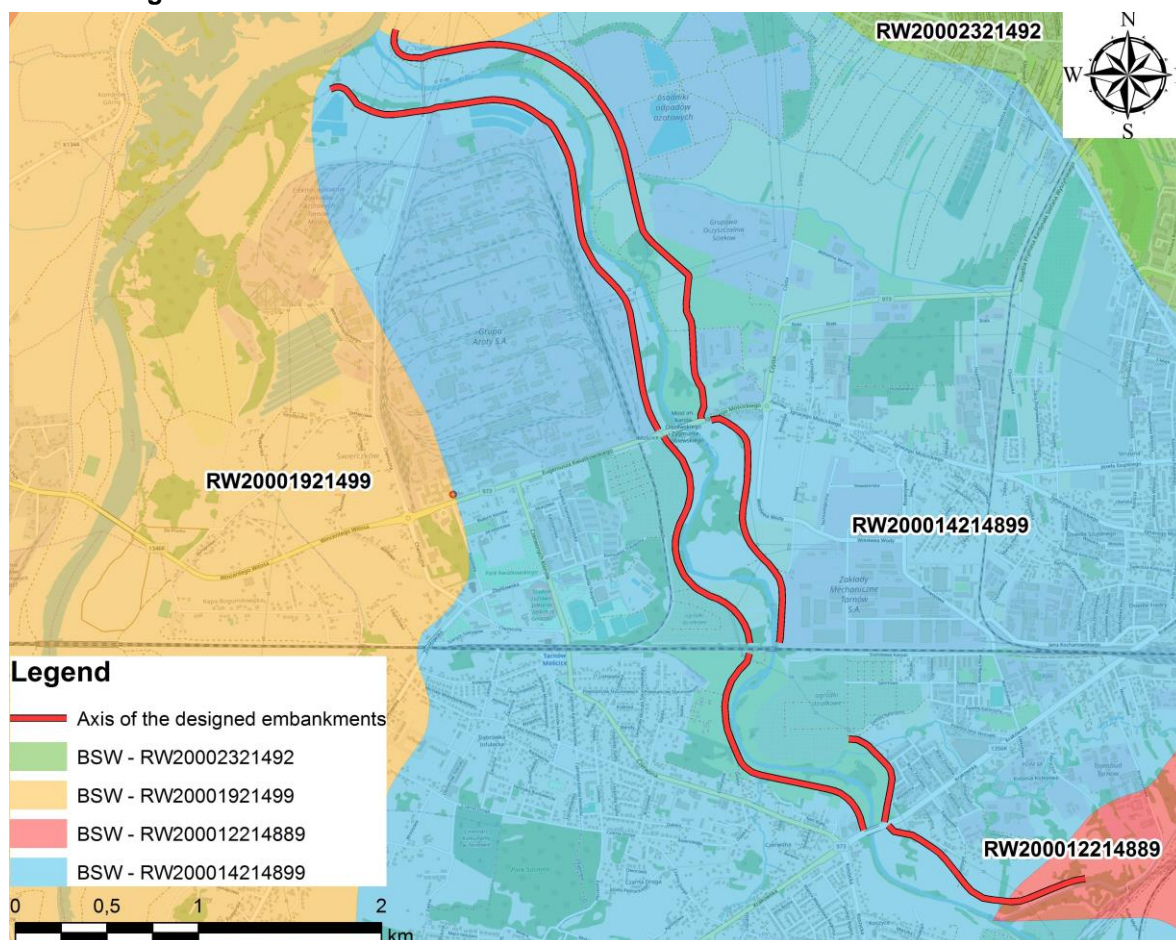
The environmental objective for that BSW – as indicated in the Water MP – is the good ecological status and the good chemical status. There is a departure for that objective, which includes extension of the deadline until 2021, which was justified as follows: “Lack of technical possibilities. Pressure, which may be a reason for exceeding the quality rates, has not been identified within the BSW. It is necessary to consider the reasons in detail to properly plan the recovery measures. Recognition of the reasons for not achieving the good status shall be assured by implementation of measures on the state level: assignment of a national data base on hydromorphological changes, performance of an extended analysis for pressure in terms of hydromorphological changes, development of good practice for hydraulic works and maintenance works, including establishment of rules for their performance, and development of a state programme for renaturalization of surface water.”

The status of BSW Wątok has been assessed as bad, which is a result of weak ecological status (determining coefficient: phytobenthos) and good chemical status. As a consequence of such an assessment, the BSW in question has been determined as under risk of not achieving environmental objectives.

The environmental objective for that BSW – as indicated in the Water MP – is the good ecological status and the good chemical status. There is a departure for that objective, which includes extension of the deadline until 2021, which was justified as follows: “Lack of technical possibilities. Pressure, which may be a reason for exceeding the quality rates, has not been identified within the BSW. It is necessary to consider the reasons in detail to properly plan the recovery measures. Recognition of the reasons for not achieving the good status shall be assured by implementation of measures on the state level: assignment of a national data base on hydromorphological changes, performance of an extended analysis for pressure in terms of hydromorphological changes, development of good practice for hydraulic works and maintenance works, including establishment of rules for their performance, and development of a state programme for renaturalization of surface water.”

Location of the Contract in reference to BSW was presented on the drawing given below (Drawing no. 3).

Drawing no. 3. Location of the Contract in reference to BSW



Source: Own materials.

4.6 Groundwater

Geological formation and hydrogeological conditions

In accordance with classification of hydrogeological units¹⁷, the Works Contract area is entirely located within the province of Vistula, Upper Vistula region, Przedkarpackie Depression. Older subbase of that area is made of middle Tertiary formations – Miocene – shaped in a form of gray Miocene clays, called as Krakowieckie clays. Quaternary sediments lay on tertiary formations, and they are made of alluvial soils of washed out loess and river sands. Drillings made in the ground allowed for identifying the occurrence of silty sand, fine sand, medium-grain sand, and coarse sand, whereas semi-compacted dark and ash-grey silty clay were found in the bottom part of a borehole.

The analyzed Contract is located beyond the boundaries of MGR.

Bodies of groundwater

Division of the area of Poland into bodies of groundwater in the process of implementation for the Water Framework Directive is subject to modifications. The current version of the division contains 172 bodies and 3 sub-bodies, and is valid from the end of 2016. The analyzed Works Contract is located within BGW 150 (European code: PLGW2000150).

¹⁷ Hydrogeologia regionalna Polski, Państwowy Instytut Geologiczny, 2007

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The Water Management Plan for waters within the Vistula River Basin (Water MP), as approved by the Council of Ministers on October 18, 2016 (OJ 2016, item 1911), evaluates the quantitative status and the chemical status for BGW 150 as good. In terms of risk of not achieving environmental objectives under the Plan, the BGW in question was defined as not being at risk.

Environmental objective for BGW 150 is: good chemical status, and good quantitative status.

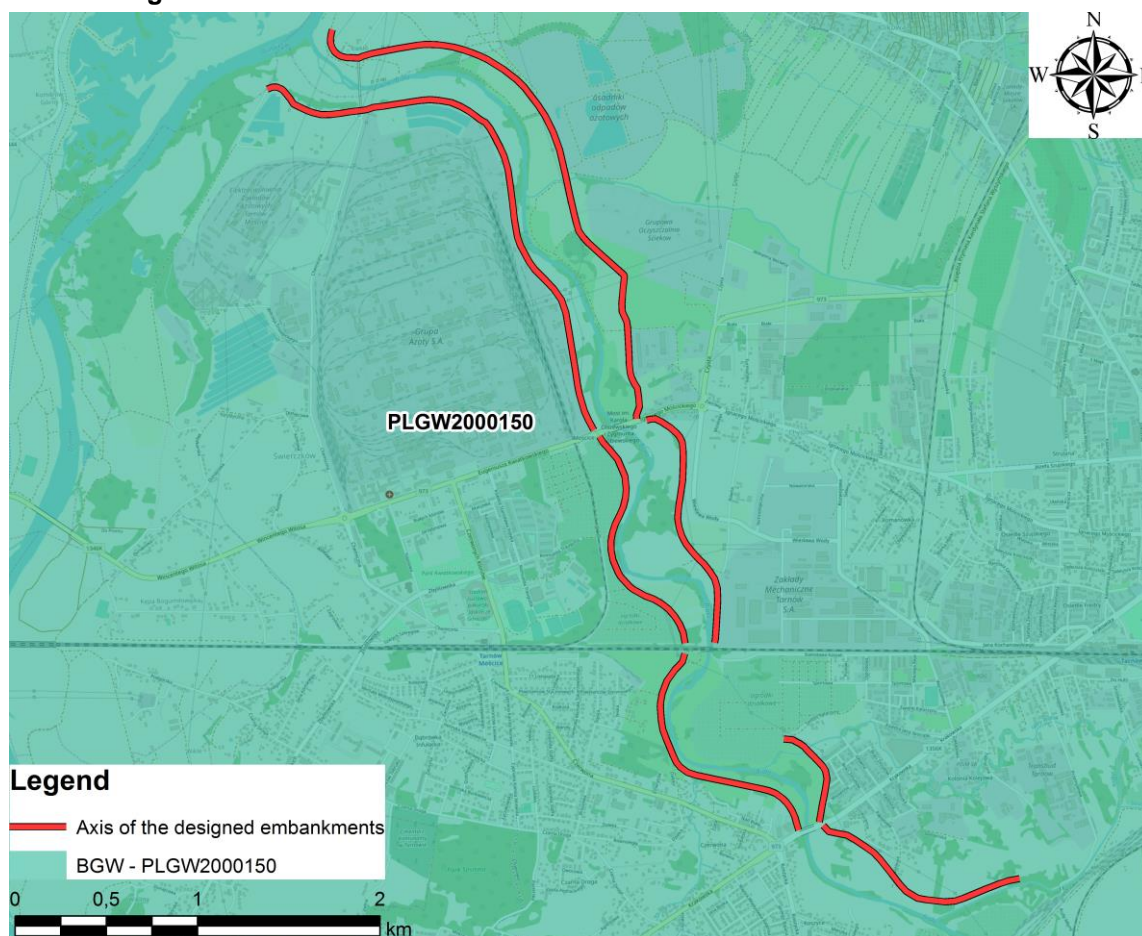
In compliance with provisions under the Water Management Plan for the Vistula River Basin the main environmental objectives for BGW are as follows:

- Preventing the inflow or limitation of the inflow of pollutions to groundwater,
- Preventing the deterioration of status for all bodies of groundwater (including reservations listed under the Water Framework Directive),
- Assurance of balance between the intake and the supply for groundwater,
- Implementation of measures necessary for reversing significant and constantly increasing concentration trend for any pollution generated due to human actions.

In order to meet the requirements for the lack of deterioration for status of waterbodies having at least good chemical and quantitative status, the environmental objective for those would be the maintenance of that status.

Location of the Contract in reference to BGW was presented on the drawing given below (Drawing no. 4).

Drawing no. 4. Location of the Contract in reference to BGW



Source: Own materials

4.7 Acoustic climate

When analyzing the noise source, one may classify it to the following groups:

- Traffic noise: road transport, railway transport,
- Industrial noise: installations and used devices,
- Noise associated with the work environment.

Residential areas are located in the neighborhood of the Contract site, and they remain acoustically protected sites, in accordance with the Regulation of the Minister of Environment of June 14, 2007 *on the acceptable level of noise in the environment* (OJ of 2014, item 112). In relation to the Works Contract those sites are located in a distance of:

Right embankment, in the north

- Low extensive residential houses:
 - about 20 m towards east;
 - about 280 m towards east;
 - about 150 m towards east;
 - about 380 m towards north-east;
 - about 670 m towards east;
 - about 830 m towards east (Kalinowska Street);
- Low intensive residential houses:
 - about 815 m towards east (Kalinowska Street);
 - about 1.02 km towards east (Konna Street);
 - about 55 m towards west (Eugeniusza Kwiatkowskiego Street);
 - about 30 m towards north (Eugeniusza Kwiatkowskiego Street);
 - about 175 m towards east (Miodowa Street);
 - about 315 m towards east (Równa Street);
 - about 950 m towards east (Mariana Buczka Street);
 - about 640 m towards east (Pustaki Street);
 - about 30 m towards east (Krakowska Street);
 - about 295 m towards west (Mieszka I Street);

Left embankment, in the north

- Low intensive residential houses:
 - about 90 m towards west (Profesora Antoniego Kępińskiego Street);
 - about 60 m towards west (Daleka Street);
 - about 120 m towards west (Nad Białą Street);
- High residential houses:
 - about 350 m towards west (Mariana Langiewicza Street).

Buildings located at the aforementioned sites are detached houses, for which the acceptable level of noise during the day is 50 dB and at night 40 dB, in accordance with the aforementioned Regulation.

4.8 Nature

An environmental inventory has been performed within the area in question from July to September 2014. The test results remained a basis for the environmental impact assessment covered by this EMP, and their validity was verified by the authority (the Regional Directorate for Environmental Protection) at the issuance of a decision on environmental conditions for the Works Contract.

4.8.1 Protected natural habitats and protected species

Natural habitats under Appendix I to the Habitats Directive

An environmental inventory did not prove the occurrence of protected environmental habitats listed under Appendix I to the Habitats Directive.

Protected species of plants and fungi

An inventory of plants located in the Contract area was done in July, August, and September 2014.

During the environmental inventory done within the area of the planned Works Contract the occurrence of strictly or partially protected species of plants, as listed in the Regulation of the Minister of Environment of October 9, 2014 on the protection of plant species (OJ of 2014, item 1409), was not identified.

During the environmental inventory done within the inspected area the occurrence of protected species of fungi, as listed in the Regulation of the Minister of Environment of October 9, 2014 on the protection of fungi species (OJ of 2014, item 1408), was not identified.

Protected species of animals

Within the boundaries of the Works Contract and in its neighborhood, during the environmental inventory, the occurrence of the following strictly or partially protected animals – in accordance with the Regulation of the Minister of Environment of December 16, 2016 on the protection of animal species (OJ of 2016, item 1348) – was identified:

- one species of invertebrates (Roman snail),
- one species of amphibians (sand lizard),
- 15 species of birds (fieldfare, grey heron, common kingfisher, western marsh harrier, feral pigeon, barn swallow, common merganser, Eurasian jay, common tern, black-headed gull, hooded crow, Eurasian magpie, great tit, western yellow wagtail, common starling), and
- 6 species of mammals (Eurasian beaver, water vole, otter, mole, European water vole, common shrew).

Occurrence of protected species of amphibians has not been identified during the inventory. However, in accordance with the Standard Data Form for Natura 2000 site Dolny Dunajec PLH120085, as well as for Biała Tarnowska PLH 120090 – thus, potentially within the Works Contract implementation area – two strictly protected species of amphibians occur and they remain in the interest of Community, in conformity with the Regulation of the Minister of Environment of October 6, 2014 on the protection of animal species (OJ of 2014, item 1348)

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and with the Regulation of the Minister of Environment of April 13, 2010 on environmental habitats and species remaining in the interest of Community, and also selection criteria for sites qualified to recognition or assignment as Natura 2000 sites (OJ no. 77, item 510, as amended), and those are: yellow-bellied toad *Bombina variegata*, and northern crested newt *Triturus cristatus*; as well as a protected species of mussel - thick shelled river mussel *Unio crassus*. It is therefore very possible that those species are also present in a reach of the river-bed running in vicinity of the analyzed site, although they were not identified during the inventory.

On the other hand one has resigned during the research from performing an inventory for ichthyofauna, due to the well-documented presence of ichthyofauna and its representatives in the River Biała. In accordance with the Standard Data Form for Natura 2000 site Biała Tarnowska PLH 120090, 3 species of fish (barbus, stone loach, European bullhead), as well as brook lamprey live in the river, and they are under partial protection based upon Regulation of the Minister of Environment of December 16, 2016 on the protection of animal species (OJ of 2016, item 1348).

All species identified within the boundaries of the Works Contract and in its direct neighborhood (in compliance with the inventory done) were presented in Appendix 9 to this EMP - Map with location of environmental habitats and fauna occurrence sites within the Works Contract.

4.8.2 Protected areas

Location of the Contract in reference to the protected areas was presented on a map in Appendix 6 to the EMP for Contract 3D.2/2 - Map with location of the Works Contract in reference to protected areas and to NATURA 2000 sites.

Natura 2000 sites

The planned Works Contract shall partially be implemented at Natura 2000 site Dolny Dunajec PLH120085 (in a reach of about 1.2 km – in the area where River Biała flows into Dunajec), and in a distance of about 0.85 km from Biała Tarnowska PLH120090 site.

The Natura 2000 site Dolny Dunajec PLH120085 is formed by the River Dunajec in a reach from the dam in Czchów to its estuary to Vistula, along with tributary rivers: Paleśnianka Stream, and Siemiechówka Stream. 2 types of habitats listed under Appendix I to the Habitats Directive were identified there. Those are: Alpine rivers and the herbaceous vegetation along their banks, and Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Pandion*, *Alnion incanae*, *Salicion albae*). Furthermore, the *Natura 2000 Standard Data Form* for the site Dolny Dunajec PLH120085 lists the following protected species under Article 4 of the Directive 2009/147/EC and species under Appendix II to the Directive 92/43/ECC: asp, barbus, yellow-bellied toad, Eurasian beaver, European bullhead, brook lamprey, otter, Atlantic salmon, northern crested newt, thick shelled river mussel.

Natura 2000 site Biała Tarnowska (PLH120090) covers a narrow valley of the River Biała from Śnietnica to the vicinity of Tarnów (bridge in Bistuszowa).¹⁸ 4 types of habitats listed under Appendix I to the Habitats Directive were identified there. Those are: Alpine rivers and the herbaceous vegetation along their banks, Alpine rivers and their ligneous vegetation with *Myricaria germanica*, Alpine rivers and their ligneous vegetation with *Salix elaeagnos*, and

¹⁸www.natura2000.gdos.gov.pl

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Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Pandion*, *Alnion incanae*, *Salicion albae*).

Natura 2000 site Biała Tarnowska (PLH120090) is also important for the protection of fish. In general, 16 species of fish were identified in Biała Tarnowska, including 5 species of fish listed under Appendix II to the Habitats Directive, i.e.: asp, barbus, European bullhead, brook lamprey, Atlantic salmon.

Remaining forms of nature conservation

The Contract implementation area is located beyond the reach of remaining areas under protection, in accordance with the Act of April 16, 2004 *on nature conservation* (uniformed text: OJ of 2009, no. 152, item 1220, as amended). The aforementioned forms of environmental protection have also not been identified in a direct vicinity of the embankment to be modernized.

4.9 Cultural landscape and monuments

The following are located within the Contract area:

- Railway gatehouse in the area of Kassali Street at the railway bridge spanning over the Biała River – object with unique historic value under conservatory protection (entered into the heritage register for the Małopolskie Province – decision dated 08/28/2014, ref. no.: A-1415/M);
- Remnants (abutments) of the old bridge located at Kwiatkowskiego Street.

Except for the aforementioned object, there are no historic objects under protection, which would be entered into the fixed heritage register of the Provincial Heritage Conservator (in accordance with data published on a website of the National Heritage Board of Poland: www.nid.pl, status of June 30, 2015), within the Contract implementation area.

4.10 Population and material goods

The planned Contract 3D.2/2 is a linear Works Contract located in vicinity of residential buildings, partially in its direct neighborhood – the closest buildings are located about 20 m from the implementation area. The site is located within the boundaries of the City of Tarnów and in Biała, and a small reach in Komorów.

In accordance with data valid for December 30, 2017¹⁹ the City of Tarnów is inhabited by 109 650 people, and population density is 1,515 people/km².²⁰

In the end of 2018 527 people lived in Biała.²¹

Development of the project area is a residential development in Tarnów and Biała, as well as industrial areas, arable fields, wasteland and allotments. As part of the works, demolition of one residential building and one outbuilding is planned.

The issues associated with a social context for the implemented Works Contract were described in more details in the document titled *Land Acquisition and Resettlement Action Plan* (LA&RAP) for the subject Contract.

¹⁹ [GUS – Baza Demografia: Wyniki badań bieżących: Stan i struktura ludności: Ludność: 2017: Ludność stan w dniu 30 VI: Ludność według płci i miast: Małopolskie](http://gus.gov.pl)

²⁰ <https://bdl.stat.gov.pl>

²¹ www.gmina.tarnow.pl

4.11 Remaining ESHS issues

ESHS related issues (i.e. the ones related to environmental, social and health and safety aspects) are regulated in Poland by several provision given in binding legal acts, including e.g. the Act of April 27, 2001 Environmental Protection Law, the Act of October 3, 2008 on providing information on the environment and its protection, public participation in the environmental protection, and on environmental impact assessments, the Act of April 16, 2004 on nature conservation, the Act of April 13, 2007 on preventing of damages to the environment and on repairing them, the Act of December 14, 2012 on waste, the Act of July 20, 1991 on Environmental Protection Inspectorate, the Act of March 14, 1985 on the State Sanitary Inspectorate, the Act of July 7, 1994 Construction Law, the Act of July 20, 2017 Water Law, the Act of June 26, 1974 Labour Code, the Act of April 13, 2007 on the State Labour Inspectorate, the Act of December 3, 2010 on implementation of some provisions of the European Union in reference to equal treatment, the Act of April 23, 1964 Civil Code, the Act of June 6, 1997 Penal Code, and others.

Legal regulations included in those acts are to e.g.:

- assure proper condition for abiotic environment and for biotic environment on site and in the areas surrounding the implemented construction investments;
- assure safety and health of people in reference to implementation of construction investments;
- prevent cases of sexual harassment and mobbing on work sites;
- assure proper social and labour conditions, and payment for the personnel.

Supervision over observing of provisions included in the aforementioned legal acts is performed by e.g. such numerous institutions and state authorities as the: General Directorate for Environmental Protection, Regional Directorates for Environmental Protection, Environmental Protection Inspectorate, State Sanitary Inspectorate, Construction Supervision Authorities (including Provincial Construction Inspectorates and District Construction Inspectorates), State Labour Inspectorate, Ombudsman, Governmental Proxy for Equal Treatment, Governmental Proxy for Rights of the Disabled, Police, and others.

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

5 Environmental Impact Assessment – Summary

5.1 Impact on land surface and landscape

Significant permanent adverse changes to the local landscape shall not occur due to implementation of the Works Contract.

As a result of the works, short-term impact on the landscape shall occur on the implementation stage. It directly results from the construction works, but the site shall be restored to its original condition after the completion.

Due to the fact that the Works Contract shall comprise extension of the existing embankments and redevelopment of the existing facilities, it shall not deteriorate landscape values in the implementation area.

In order to limit the impact of works on land surface and on landscape during implementation of the Contract, one shall implement mitigation measures described in Appendix 1 to the EMP for Contract 3D.2/2 – Plan of mitigation measures, items in the table: 3, 5 – 12, 15, 16, 18, 19, 26 – 28, 30, 56 - 59, 67, 112 – 114.

5.2 Impact on local climate

On the stage of implementation there shall be no impact on the climate. On the Works Contract's use stage there shall also be no significant changes to microclimate parameters, and therefore it is not necessary to implement additional mitigation measures. Measures shall however be undertaken during the performance (e.g. removal of vegetation), and they may affect such elements of climate as e.g. insolation associated with presence of vegetation, or air humidity. That shall however be an impact of a minor scale.

Reduction of a flood risk shall allow for avoiding its consequence, e.g. such as: shaping of topo-climate due to local changes in water relations.

To sum up it shall be stated that the Works Contract shall not cause adverse impact on the climate on both: the implementation stage, as well as the operational stage.

5.3 Impact on air quality

Impact of the analyzed Works Contract on the air quality shall only occur at the performance, due to unorganized emission of gas and dust associated with operations of construction machines and means of transportation with combustion engines mainly, as well as with earthworks, concrete works and transportation and storage of construction materials. The impact shall be short-term and – due to the scale of the works – it is not expected to exceed permissible concentration of substances in the air.

Dusting may occur during offloading of soil at embankments to be developed. Soil shall not be stockpiled within the Contract area – it will be delivered on an ongoing basis; thus, excessive dusting shall not occur.

Dusting may also occur during offloading and preparation of cement and bentonite mix for the purpose of developing the anti-filtration membrane. The cement and bentonite mix shall be delivered to the construction site as a powder with tight trucks – e.g. cement trucks – and subsequently pumped into a tight silo, and then transferred to closed mixers, where it would

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be mixed with water – dusting may only occur during reloading of the mix from the cement truck to the silo and during the transfer of mix to mixers. Therefore, there shall be no excessive dusting.

The range of emission shall correspond with the performance area only, and with the route of access roads and technological roads. The emission shall be unorganized, local, and temporary. After completion of the works it shall cease completely.

The following pollutions shall be emitted to the air: sulphur dioxide, nitrogen dioxide, carbon monoxide, suspended particulates PM10 and PM2.5, ammonia, benzene, aromatic hydrocarbons, aliphatic hydrocarbons. That emission shall be limited through application of modern and efficient equipment.

On the operational stage the Works Contract shall not remain a source of significant emission of pollutions to the air. Operations of the objects and of flood defenses under the modernization are not associated with regular emission of pollutions.

A source of temporary unorganized emission shall only be operations of diesel lawnmowers at curing the embankment slopes; however, that emission shall not significantly affect the air quality due to a small scale.

One shall assume that the Works Contract shall not cause significant impact on the air quality on both: the implementation stage, as well as on the operational stage.

In order to limit the impact of works on the quality of air during implementation of the Contract, one shall implement mitigation measures described in Appendix 1 to the EMP for Contract 3D.2/2 - Plan of mitigation measures, items in the table: 82 – 86, 88.

5.4 Impact on soil and grounds

Impact of the Contract on the soil environment shall be present – similarly as in case of most of the remaining environmental components – only on the performance stage.

The impact will result from the necessary removal of soil in the area of works comprising extension of the embankments to assure proper parameters for the embankments and their sealing. As all of the removed soil shall be embedded within the Contract area, the impact shall not be significant.

During the performance hazards for the soil are mainly associated with the occurrence of such emergency situations as leak of diesel substances, which may cause local contamination of the ground. Such impacts would be of local character, and their occurrence shall be minimized by applying efficient machines and vehicles on site only and by sealing of the station used for their fueling.

The expected impact onto the surface of earth shall be local. Implementation of the Works Contract shall not require development of deep excavations. After completion of the works, the site shall be cleared and reinstated by the Contractor; thus, any impact shall cease.

The Works Contract shall not cause adverse impact on the soil and on the subbase on both: the implementation stage, as well as the operational stage.

It was however assumed that in order to limit the impact of works on the status of soils and grounds during implementation of the Contract one shall implement mitigation measures described in Appendix 1 to the EMP for Contract 3D.2/2 - Plan of mitigation measures, items in the table: 13, 14, 17 - 19, 22 – 31, 56 – 58, 63 – 65, 68 – 77, 87 – 91, 112 – 114.

5.5 Impact on surface water

Implementation of the subject Contract is not associated with interference in the Biala river-bed, and it shall be implemented beyond the channel; thus, direct significant impact on surface water is not anticipated. There shall be no interference in morphology of the river-bed or in the hydrological regime; the Works Contract shall be implemented beyond the river-bed and the joint between the bank and the channel. As the Works Contract is related to the existing embankments, there shall be no changes to flow conditions during floods.

The Works Contract shall not relate to the intake of water or to the discharge of waste water into the soil; thus, it shall not affect the quantitative status and the qualitative status of surface water, and shall not pose risk to achieving the environmental objectives by the BSW. As a consequence, the Contract in question shall not form hazard to achieving environmental objectives established for the BSW, within catchment of which it shall be implemented.

Implementation of the Contract shall not be associated with occurrence of new sources of waste water emission to surface water. Although domestic waste and small volume of technological waste will be produced during the performance, they shall be collected in tight containers and successively transferred to the waste treatment plant. The planned works shall also provide small volume of waste – domestic waste mainly – which shall be delivered to a municipal landfill. Waste coming from demolition of one outbuilding, one house, as well as during demolition and redevelopment of facilities would also be produced during implementation of the Works Contract. It shall be handed over to an external company, having necessary permits, for further treatment in the process or recovery or treatment beyond the Contract area.

Assuming the proper course of works, the analyzed Works Contract shall not cause production of hazardous waste posing risk of water quality deterioration.

No new chemical substances, including priority ones, shall be discharged to the environment due to implementation and use of the Works Contract. Nonetheless, the impact during the performance may cause leakage of substances harmful to the environment, i.e. increase of suspension in the discharge, spilled fuel or other substances applied during the construction works. One shall undertake any measures to remove the adverse effects of the event then. Performance conditions, as well as location and organization of the site facilities determined in the decision on environmental conditions and in this document shall protect the water against potential contamination possibility.

As the Works Contract does not interfere in the river-bed and the river water on the operational stage, there shall be no significant impact on bodies of surface water. During such extreme events as floods, the Works Contract shall not cause water damming at bridges and other obstacles.

The Works Contract shall not cause significant impact on the surface water on both: the implementation stage, as well as the operational stage.

It was however assumed that in order to limit the impact of works on the status of water during implementation of the Contract one shall implement mitigation measures described in Appendix 1 to the EMP for Contract 3D.2/2 - Plan of mitigation measures, items in the table: 5, 6, 12 – 14, 16 – 19, 22 – 25, 56 - 58, 63 – 66, 68 – 77, 87 – 91.

5.6 Impact on groundwater

Impact of the Works Contract on groundwater shall be temporary and shall occur during accommodation of a flood wave only. It is associated with the development of hydro-insulating membrane in the embankment body, as it would modify flow conditions for water in the ground during floods, when hydraulic gradient changes through rising of the dammed water-table within the embanked area. Change of the groundwater level during floods shall however be temporary, and groundwater shall return to the level from before the peak flow after accommodation of the flood wave.

Implementation of the Contract shall neither relate to the emission of pollutions to the groundwater nor to the intake of groundwater. It is also not planned to develop any elements affecting the quantitative status or the chemical status of groundwater under the Contract. This is why during the implementation, as well as the use of embankments there shall be no impact on the chemical status and the quantitative status of bodies of groundwater; thus, it shall not form a risk of not achieving the environmental objectives determined for the body of groundwater.

The Works Contract shall not cause significant impact on the groundwater on both: the implementation stage, as well as the operational stage.

In order to limit the impact of works on the status of groundwater during implementation of the Contract one shall implement mitigation measures described in Appendix 1 to the EMP for Contract 3D.2/2 - Plan of mitigation measures, items in the table: 5, 6, 12 – 14, 16 – 19, 22 – 25, 56 - 58, 63 – 66, 68 – 77, 87 – 91.

5.7 Impact on acoustic climate

Due to specificity of the Works Contract its acoustic impact shall occur in the implementation phase only, when it would be necessary to apply heavy construction equipment and to deliver construction materials. Those shall be movable as well as fixed noise sources associated with preparation of the site for the construction, loading, delivery, and unloading of raw materials and goods, raising of the embankment, condensation of slopes, development of hydro-insulating membranes, and clearance works associated with site grading and sowing with grass. Exceedance of permissible noise standard may be related to periods of operations of heavy equipment and of truck deliveries in vicinity of noise sources. The greatest impact shall occur at the performance in the direct neighborhood of acoustically protected areas (residential areas). The impact shall however be local and short-term and shall end at the completion of works within the Works Contract area.

At the use of the Works Contract there shall be no impact on the acoustic climate, due to the absence of devices and machines, which would be required for operating the Works Contract. Temporarily there may be a short-term impact in a form of noise emitted by operating lawnmowers, which are necessary to mow greenery at the embankment; however, the impact may last for few hours a year only, in total.

The impact is integrally associated with the scope of the Works Contract on the implementation stage, and it cannot be eliminated completely. In order to limit the impact of works on the status of acoustic climate during implementation of the Contract one shall implement mitigation measures described in Appendix 1 to the EMP for Contract 3D.2/2 - Plan of mitigation measures, items in the table: 15, 78 - 82.

5.8 Impact on nature

5.8.1 Protected natural habitats and protected species

Natural habitats under Appendix I to the Habitats Directive

There are no environmental habitats determined in Appendix I of the Habitats Directive within the Contract implementation site. Therefore, there shall be no impact on environmental habitats on the Works Contract implementation stage. After completion of implementation, as well as at its use such an impact shall not occur.

Protected species of plants and fungi

During the environmental inventory done within the area of the planned Works Contract the occurrence of strictly or partially protected species of plants, as listed in the Regulation of the Minister of Environment of October 9, 2014 on the protection of plant species (OJ of 2014, item 1409), was not identified.

The occurrence of protected species of fungi, as listed in the Regulation of the Minister of Environment of October 9, 2014 on the protection of fungi species (OJ of 2014, item 1408), was also not identified. Implementation of the Works Contract shall therefore not affect the protected species of plants and fungi.

Performance of the planned construction works relates to the impact of the Works Contract on vegetation within the implementation area. A method adopted for implementation minimizes that impact through its limitation to the impact on vegetation colliding with the Works Contract directly. Herbaceous plants shall be damaged and trees – directly colliding with the planned Contract and placed within the area acquired for temporary technological roads and maneuvering yards – shall be logged. It is planned to log 3,000 trees and remove about 1.5 ha of shrubs colliding with the planned Contract directly. For the purpose of restoring environmental values, top-soiling and sowing shall be done for the area damaged during the performance after completion of the works, and replacement planting shall be done, whereas invasive species shall be removed. The scope and detailed location of replacement planting shall be determined by the Contractor on the stage of commencing the construction works. The planting shall be done in the closest possible distance from the Works Contract, within plots owned by the Municipality of Tarnów and/or by the Commune of Tarnów (in accordance with a note of the RDOŚ reproduced under Appendix 4 to this EMP).

Any type of adverse impact on vegetation shall disappear in the operational stage to a high extent. It is related to the expected reinstatement of land to its original condition, while keeping the previous use of land.

Protected species of animals

Information on the occurrence of protected species of animals within the Works Contract implementation zone and in its direct neighborhood was presented in Chapter 4.8.1. Impact of the Works Contract on particular groups of identified animals is described below.

Invertebrates

The occurrence of protected species of invertebrates has not been identified with the Contract implementation zone. However, due to the fact that in accordance with the Standard Data Form for Natura 2000 sites Biała Tarnowska PLH 120090 and Dolny Dunajec PLH120085, thick shelled river mussel *Unio crassus* lives in the river; thus, it is possible that that mussel is also present in a reach of the river-bed running in vicinity of the analyzed site. It is therefore necessary to take special care and apply the requirements in reference to implemented mitigation measures – as determined in Appendix 1 to the EMP – during the construction works.

Amphibians and reptiles

The occurrence of protected species of amphibians and reptiles and their breeding zones have not been identified within the Contract implementation zone. However, in accordance with the Standard Data Form for Natura 2000 sites Dolny Dunajec PLH 120085 and Biała Tarnowska PLH 120090, within the areas located in a distance of about 3 km – thus, potentially within the Works Contract implementation area – two strictly protected species of amphibians occur, and those are: yellow-bellied toad *Bombina variegata*, and northern crested newt *Triturus cristatus*.

The inventory of existing embankments also proved the occurrence of one species of reptiles – sand lizard *Lacerta agilis*, which – in accordance with the Regulation of the Minister of Environment of October 6, 2014 on the protection of animal species (OJ of 2014, item 1348) – is subject to partial protection.

It is therefore necessary to take special care during the performance.

No water reservoirs (artificial and natural) – remaining a potential shelter and breeding site for amphibians – would be removed during the performance; thus, there shall be no significant impact on amphibians.

The planned construction works may form a risk of trapping and killing for amphibians and reptiles in excavations located within the site. A potential threat is also the traffic of vehicles and machines, which may deteriorate the conditions of occurrence and breeding in vicinity of the Works Contract, or form a direct hazard to life of specimens. Incidents of polluting the water and ground environment may also form a threat to that group of animals.

Impact of that type has a potential character, and the performance compliant with conditions determined in Appendix 1 to the EMP (as also discussed under Chapter 6.8) highly reduces its occurrence risk.

Birds

In vicinity of the Contract implementation site, beyond its boundaries, the occurrence of 15 species of protected birds was identified (see: a map given in Appendix 9 to the EMP and a description given in Chapter 4.8.1). During the performance the species may be threatened by potential forms of adverse impact.

It shall mainly result from the necessary logging of trees colliding with the works to be done. For the purpose of mitigating the impact, the logging shall be done beyond the hatching season of birds, i.e. from October until March, and – furthermore – trees not to be logged shall provide protection for birds. Adverse impact may also be associated with increased

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penetration of the site by people and with intensive traffic of vehicles and construction machines (scaring and disturbance of specimens) – the impact shall be local and temporary, and limited to the period and the time of performance.

Considering the fact that identified birds are mostly common species and species widely spread in Poland, and taking into account the temporary and ceasing character of potential impact, and the fact that trees not to be logged are located in vicinity of logged trees and they shall provide protection for birds during the performance, effects of the Works Contract for populations of protected species of birds shall be deemed as insignificant.

Any type of adverse impact on animals shall essentially cease on the operational stage. It is related to the expected restoration of the site to its original condition, while keeping the previous use of land.

In order to limit the impact of works on the status of flora and fauna during implementation of the Contract one shall implement mitigation measures described in Appendix 1 to the EMP for Contract 3D.2/2 - Plan of mitigation measures, items in the table: 5, 6, 12 - 16, 25, 26, 30, 32 – 58, 60 – 63, 67, 113.

5.8.2 Protected sites

The planned Works Contract shall be partially implemented within Natura 2000 site Dolny Dunajec PLH120085 (in a reach of about 1.2 km at the estuary of the River Biała to Dunajec) and in a distance of about 0.85 km from the Biała Tarnowska PLH120090 site. Within the framework of the environmental impact assessment the Regional Director for Environmental Protection in Cracow examined the expected impact of the contract on protection objectives for Natura 2000 sites Dolny Dunajec PLH120085 and Biała Tarnowska PLH120090, and stated that implementation of the Works Contract shall be done beyond protected environmental habitats placed within the aforementioned Natura 2000 sites, and it shall neither result in decreasing the number of population among species under protection within the aforementioned sites nor in reducing the range of their presence, and shall not deteriorate the condition of environmental habitats. Implementation of the Contract shall not cause emission of pollutions, which may adversely affect the closest protected areas, and it shall not also result in increasing human pressure within those sites. To sum up, the Works Contract at the implementation phase shall not affect objectives and subjects of protection for the Natura 2000 sites Dolny Dunajec PLH120085 and Biała Tarnowska PLH120090, and shall not adversely affect the integrity of those areas and their connection with other Natura 2000 sites.

The impact on environmental protection forms shall not occur during the use of the Works Contract. Furthermore, the Contract area and the embanked area may in future be potentially covered with environmental habitats remaining protection forms for the closest Natura 2000 sites. The area may form a potential shelter, living ground and breeding ground for animals protected within the closest Natura 2000 sites. Considering the above, the aforementioned Works Contract may potentially affect the closest protected areas positively.

5.9 Impact on cultural landscape and on monuments

As proved by an analysis done on the stage of environmental impact assessment, at implementation, as well as at the use of the Works Contract there shall be no threats to sites and objects of historic value. A condition for the absence of hazards is however keeping of due care in reference to the historic railway gatehouse at the railway bridge over the River Biała, which – as an object of unique historic value – is under conservatory protection, as well as in reference to remnants of the old bridge at Kwiatkowskiego Street in Tarnów.



In order to limit the impact of works on the cultural landscape and on historic objects during implementation of the Contract, especially on freshly discovered objects, one shall implement mitigation measures described in Appendix 1 to the EMP for Contract 3D.2/2 - Plan of mitigation measures, items in the table: 5, 102 – 104.

5.10 Impact on population and on material goods

Social impact

A basic aim for implementation of the Works Contract is the assurance of protection for health and life of people in case of river floods, and also improvement of emotional comfort for people living at neighboring sites. The Odra-Vistula Flood Management Project remains a project of national significance implemented at support of international financing institutions. It is one of numerous Works Contract on flood protection, developed and implemented due to catastrophic floods occurring in Poland within last twenty years (the event of May 2010, which caused serious material damage in the valley of Middle Vistula and within some of its tributary rivers – e.g. in Podkarpackie Province, was one of them). In case of those events, implementation of the Works Contract is economically justified, and it gains common social acceptance of the local authorities and of the inhabitants, owners, and users of land, where the construction works are or will be performed.

However, one shall consider a risk of social conflicts caused not by the Works Contract itself and by the intended objective – which is improvement of the flood safety, but by nuisance for

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the people living in vicinity mainly, which would occur on the performance stage in reference to the adverse impact of the construction works and deliveries (noise, vibrations, air pollution). One shall emphasize that those impacts shall be temporary and limited, and they shall end at the completion of the construction phase. Limitation of nuisance to people is one of the main objectives for implementation of Environmental Management Plans, and its achievement shall be one of priorities on the performance stage. However, an overriding project's objective, which is limitation of flood risk, should compensate potential nuisance occurring on the Contract implementation stage, which is difficult to eliminate.

Impact on material goods

Except for protection of people's health and life, it is assumed that the Works Contract shall protect material assets through reducing the flood hazard. The most of residential objects, where the planned embankment shall be placed, is located in a huge distance from the Contract area.

Nonetheless, in order to provide land for implementation of the Contract it is necessary to demolish one house and one outbuilding.

Most of the construction works shall be performed in a huge distance from developed areas. The Contractor shall be responsible for planning, organizing, and performing the construction works in such a way to avoid the occurrence of hazard for surrounding material goods. It shall also be responsible for any damage to the bulk objects, structures, roads, elements of technical facilities (ditches, culverts, transmission networks), as well as information boards, cultural objects, etc. That liability shall relate to an obligation of repairing any damage of that type at own expense.

The issues associated with a social context for the implemented Works Contract, including expropriation of properties, limitation of the previous method of use or of the access to properties, were described in more details in the document titled *Land Acquisition and Resettlement Action Plan (LA&RAP)* for the subject Contract.

5.11 Impact on health and safety of people

Implementation of the planned Works Contract may relate to the following impact on the people's health and life:

- Increased emission of pollutions to the air

On the construction stage there may be local and temporary increase of the contamination level for the air, which is associated with the use of vehicles and construction machines (emission of combustion gas). Due to its disperse, local and not too intensive character, as well as due to the distance from most of the construction site from the closest houses, the impact should not result in significant effects in reference to the health of Contractor's personnel and inhabitants living in vicinity (see also: Chapter 5.3).

- Increased emission of noise

On the construction stage there may be local and temporary increase of the noise level, which is associated with the performance and with the use of vehicles and construction machines. Considering the circumstances discussed under Chapter 5.7, the event should

not result in significant effects in reference to the health of Contractor's personnel and inhabitants living in vicinity.

- Hazard of contamination with diesel derivatives

Bad organization of the works and not observing relevant standards may lead to contamination of water and ground with fuel on the construction stage, what – in turn – may form a direct or indirect hazard to the health of Contractor's personnel and inhabitants living in vicinity. In order to prevent such hazard Appendix 1 to this EMP implements numerous conditions to limit a risk of diesel contamination on the construction stage (see also: Chapter 6.11).

- Possible failure or disaster at the flood embankment on the operational stage

The issues associated with the potential impact of failure or disaster at the flood embankment on the health of Contractor's personnel and of inhabitants living in localities placed in the area beyond the embankment were discussed in Chapter 5.12.

5.12 Exceptional hazard (crisis situations and emergencies)

Hazard associated with contamination of the environment may occur on both: the implementation stage, as well as on the operational stage, e.g.: identification of unexploded shells and misfires, failures of embankments, or failure of devices during the operations.

Due to the possible accommodation of a flood wave during the performance, the Contractor shall be obliged to organize and establish detailed rules of proceeding in case of the discussed event.

The Contractor is obliged to perform the works under sapper supervision, which includes constant inspection and clearance of the site from dangerous military items, including their treatment.

The most likely event, which may occur during the performance, is leakage of substances from machines and vehicles operating within the site. Constant inspections of the machines and proper organization of the site and site facilities shall be assured to remove the contamination as soon as possible.

The proper performance and use, and observation of rules of proper organization for the works and observation of the law would allow for providing full safety for the construction site and for the environment.

5.13 Other hazards related to ESHS

Implementation of the Contract may relate to numerous impacts related to ESHS issues (i.e. environmental, social and health and safety aspects). Except for the issues discussed above in Chapters 5.1-5.12, the following additional issues or hazards related to 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 of third parties;
- Cases of such unacceptable behavior on work sites as sexual harassment or mobbing;

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- Cases of intentional or unintentional violation of labour law's provisions, including the ones associated with social conditions and labour conditions, and with payment to the personnel;
- Cases of infections with sexually transmitted diseases, including HIV/AIDS, resulting from the lack of knowledge on preventing and controlling infections of that type.

Due to significant social effects of those hazards, this Environmental Management Plan and other documents of the Contract contain numerous detailed conditions to prevent and efficiently react in case such event occurs, and to assure proper implementation of any provisions of national legislation in that scope (see e.g.: Chapter 6.14).

5.14 Cumulative impact

Cumulative impact shall occur in case of implementing simultaneously Contract 3D.2/2 *Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow* and Contract 3D.2/1 *Construction of the right embankment of the Biala River in the City of Tarnów* – to be implemented in the neighborhood, also under the OVFM Project. That impact shall only take place at the performance.

The following may especially be accumulated:

- Impact on acoustic climate;
- Impact on the air.

Those impacts – being tightly associated with the stage of extension for the embankments – cannot practically be eliminated. However, nuisance of those impacts shall be significantly limited due to fulfilment of obligations imposed onto the Investor in the ED.

The use of embankments shall not cause accumulation of adverse impacts.

6 Description of mitigation measures

In order to limit adverse impact of the planned Works Contract onto the environment, Appendix 1 to this EMP provides a list of mitigation measures, which shall be implemented prior to, during, and after completion of the construction works. Those measures have been developed based upon the conditions included in the following documents:

- Environmental Impact Report for “Extension of the left embankment and of the right embankment of the Biala River in the City of Tarnów”.
- Decision of the Regional Director for Environmental Protection in Cracow dated March 8, 2016, ref. no.: ST-I.4233.2.2015.MB, establishing environmental conditions for the Works Contract comprising extension of the left embankment and of the right embankment of the River Biala in the City of Tarnów.
- World Bank policies:
 - OP/BP 4.01 – on environmental impact assessment,
 - OP/BP 4.04 – on natural habitats,
 - OP/BP 4.11 – on physical cultural resources.
- Odra-Vistula Flood Management Project – Project Operations Manual, Wrocław 2015.
- Odra-Vistula Flood Management Project – Environmental and Social Management Framework, Cracow 2015.

They are associated with detailed guidelines for the Contractor and they need to be implemented prior to, during, and after completion of the Works Contract.

A summary and general characteristics of the main categories of mitigation measures were provided below, including a breakdown into particular environmental components.

6.1 Land surface and landscape

Implementation stage

Basic forms of the adverse impact of the planned Works Contract on the surface of land and on the landscape were provided in Chapter 5.1.

In order to limit adverse impact of the Contract on land surface and on landscape mitigation measures were established, and their implementation was planned during performance of the construction works, and also prior to their commencement. The performance stage shall be preceded with works associated with preparation of the Works Contract implementation site, including e.g. preparation of storage yards for construction materials, site facilities, etc., and setting-out, preparation (and agreement with road administrators) of delivery routes for machines and vehicles.

Locations of temporary acquisition (technological roads, yards, site facilities, storages sites for construction materials, parking lots and others) should be placed and developed in

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accordance with the guidelines of the Contractor's environmental team, as approved by the Engineer.

Machines and vehicles may move only within technological roads and maneuvering yards within the site. Order should be kept within the construction site and proper organization of the works should be assured.

The most important mitigation measures are as follows:

- Delivery of materials should be done using existing public roads running in vicinity of the planned Contract and using technological roads, with maximum possible application of the existing road network; if new temporary roads would be necessary, one shall locate them, where possible, within areas of low environmental values, in a maximum distance from the existing water-courses, water reservoirs, and wet land;
- Storage sites for materials, rest and refreshment facilities, and parking lots for the equipment and for machines shall be located in places of the lowest environmental value, in a proper distance from residential areas, water-courses, reservoirs, and wet land, including rules of minimization for acquisition of land and for transformation of its surface;
- The site facilities shall be hardened and equipped with sanitary facilities;
- The area of planned Works Contract shall be cleared after completion of the works and green areas shall be reinstated;
- The area of works and land adjacent to the construction site shall be reinstated to its original conditions due to e.g. the traffic of machines and means of transport.

In accordance with valid standards and at keeping environmental protection rules in conformity with the conditions determined in relevant decisions, the performance shall minimize adverse impact of the Works Contract on the soil environment.

Mitigation measures related to the protection of land surface and landscape were listed in Appendix 1 – Plan of mitigation measures, items in the table: 3, 5 – 12, 15, 16, 18, 19, 26 – 28, 30, 56 - 59, 67, 112 – 114.

Operational stage

During the operational stage no adverse impacts on ground surface and landscape are anticipated; thus, it was not necessary to plan and implement mitigation measures.

6.2 Climate

Due to the fact that implementation of the Works Contract shall not cause adverse impact on the local climate (see: description under Chapter 5.2), it was not stated necessary to plan and implement mitigation measures in that range.

6.3 Air quality

Implementation stage

Basic forms of adverse impact of the planned Contract on the air were presented in Chapter 5.3.

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For the purpose of limiting those impacts, it is recommended to apply e.g. the following mitigation measures to eliminate or at least reduce the adverse Works Contract impact on the air quality:

- Equipment used on the implementation stage shall be fully efficient and meet the legal requirements to protect against the emission of dusts and gases to the air,
- Loose materials and aggregate necessary for the planned works shall be properly protected against outblowing and excessive dusting during transportation, storage, and embedding,
- Access roads shall be kept in proper cleanliness, and the construction site shall be protected against dusting,
- One shall limit the operational time of diesel engines, construction machines and vehicles, eliminate their operations at idle, and reduce traffic velocity for vehicles within the site.

Detailed recommendations for mitigation measures related to air protection are shown in Appendix 1 – Plan of mitigation measures, items in the table: 82 – 86, 88.

Operational stage

The only source of temporary unorganized emission of pollution to the air on the operational stage shall be emission of combustion gas during mowing of plants on the embankment. That emission shall not have a significant impact on the air quality, and therefore there is no need for introduction of mitigation measures concerning protection of air during the operational stage.

6.4 Soils and grounds

Implementation stage

Basic forms of adverse impact of the planned Contract on the soil and grounds were presented in Chapter 5.4.

The most important mitigation measures to limit those impacts are as follows:

- One shall remove a 15 cm thick layer of top-soil and turf, and then about 40 cm thick layer of mineral soil prior to the commencement of earthworks. The collected ground and top-soil shall be stored for embedding in further construction phases. Stored top-soil and mineral ground should be protected by the Contractor against pollution, overdrying, mixing, overpassing, and compaction, and in a way allowing for its re-embedding;
- In case of a failure polluting the ground, one shall immediately remove the polluted soil layers and hand them over to a specialized company having relevant permits for business actions related to the hazardous waste treatment; in case of serious failures one shall apply notification procedures for relevant services;
- During the performance one shall apply efficient equipment only to protect the soil against pollutions;
- Site facilities, where vehicles, machines and devices shall move, shall be sealed on the subbase side using insulation materials assuring protection for the soil;
- Maintenance of vehicles, machines and devices (e.g. diesel exchange, liquid change, etc.) may be done in designated spots within site facilities only, while meeting determined

conditions (e.g. proper marking, protection on the subbase side, distance from water, etc.);

- Site facilities, and especially locations designated for maintenance of vehicles, machines and devices (including garages, fueling sites, technical service sites, etc.) shall be provided with a station with sorbent for neutralizing potential leakage of hazardous substances (including diesel derivatives);
- Fueling should be done using mobile or fixed fuel distribution stations having relevant protection, e.g. a station with sorbent to remove leakage and spills of diesel derivatives to the ground;
- Grounds (including spoil) and aggregate used for construction works and transported from beyond the site should meet requirements related to soil quality standards and to earth quality standards (in conformity with the Environmental Protection Law and its secondary regulations), and any other valid regulations and standards.

Additional measures mitigating impact on soils include the following: ban to repair equipment and machines, to change diesel, and to fuel and store fuels beyond the set out areas meeting relevant requirements.

Ongoing regular inspections of technical condition of vehicles and construction equipment will be carried out during the construction stage.

After completing the construction works the site facilities and any temporary works and yards shall be removed, and a fertile layer of soil shall be restored within the area acquired for the purpose of Works Contract implementation, and proper agrotechnical actions shall be done. The new embankment shall be top-soiled, and ground shall be sown with a mix of native grass species in such a way to limit the surface erosion.

Mitigation measures related to protection of land are shown in Appendix 1 – Plan of mitigation measures, items in the table: 13, 14, 17 - 19, 22 – 31, 56 – 58, 63 – 65, 68 – 77, 87 – 91, 112 – 114.

Operational stage

After completion of the construction works there will be no adverse impact of the Works Contract on the soil environment. Therefore, there is no need for introduction of mitigation measures concerning protection of soil and ground during the operational stage.

6.5 Surface water

Implementation stage

Basic forms of adverse impact of the planned Contract on the surface water were presented in Chapter 5.5.

Limitation of nuisance and adverse impact of the Works Contract on surface water on the implementation stage is associated with the proper performance. In order to meet requirements related to the protection of environment, the construction works shall be preceded with a detailed plan and a schedule of works addressing relevant protection.

One shall keep the site clean and shall assure the proper organization of works. One shall only apply materials which would not be harmful for the environment or remain neutral for the

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purpose of performance. One shall not apply substances, which may be lethal to the present animals, except for substances necessary for proper operations of construction machines.

One shall apply a proper drainage system for excavations in the area of excavations, which would assure keeping them dry. One shall maximally limit the time of drainage and shall apply methods limiting the volume of discharged water, along with its protection against contamination.

During implementation of the Contract one cannot interfere in channels and banks of water courses. It is also not allowed to intake water or to extract aggregate from the river bed and to extract soil from the embanked area.

In case of diesel derivatives' leakage to surface water the Contractor is obliged to undertake relevant measures immediately, and – in particular cases – to notify relevant services. Site facilities shall be equipped with relevant volume of sorbent throughout the Contract implementation period.

For the time of construction works the Contractor shall develop a flood protection plan, which shall be agreed with the Engineer. That plan shall include e.g. a proceeding manual for the time of potential flood after commencement of the works. In case a flood occurs, the Contractor shall be obliged to proceed in accordance with procedures described in the aforementioned document.

Mitigation measures related to protection of water are shown in Appendix 1 to the EMP – Plan of mitigation measures, items in the table: 5, 6, 12 – 14, 16 – 19, 22 – 25, 56 - 58, 63 – 66, 68 – 77, 87 – 91.

Operational stage

No risk for surface water will occur on the operational stage. As a consequence, it is not expected to implement mitigation measures for protection of surface waters on the operational stage.

6.6 Groundwater

Implementation stage

Basic forms of adverse impact of the planned Contract on the groundwater were presented in Chapter 5.6.

Measures to protect groundwater are coherent with measures to protect against contamination of soils and the ground, and also of surface water (in reference to the proper organization of works and locations of temporary acquisition, and providing them with relevant sorbent).

Mitigation measures related to protection of water are shown in Appendix 1 – Plan of mitigation measures, items in the table: 5, 6, 12 – 14, 16 – 19, 22 – 25, 56 - 58, 63 – 66, 68 – 77, 87 – 91.

Operational stage

During the use of embankments there will be no adverse impact on the groundwater. Therefore, there is no need for introduction of mitigation measures concerning protection of groundwater during the operational stage.

6.7 Acoustic climate

Implementation stage

Basic forms of adverse impact of the planned Contract on the local acoustic climate were presented in Chapter 5.7.

It is expected to implement the following mitigation measures to limit those impacts:

- Construction works shall be performed within the day, i.e. from 6:00 am to 10:00 pm,
- Site facilities, construction yards and parking lots shall be located in the furthest possible distance from residential areas,
- Construction equipment applied during the works should be fully technically efficient and shall be specified by low noise emission,
- If it would be necessary to perform the works at or in vicinity of acoustically protected sites, the level of noise shall be inspected on an ongoing basis, and noise reducing measures shall be applied (e.g. soundproof casing).

Mitigation measures related to reduction of noise emission are summarized in Appendix 1 – Plan of mitigation measures, items in the table: 15, 78 - 82.

Operational stage

The noise emission during the operational stage will not exceed the value admissible by law. There is no need for introduction of mitigation measures concerning acoustic protection.

6.8 Nature

6.8.1 Natural habitats, flora and fauna

Implementation stage

Basic forms of adverse impact of the planned Contract on the biotic nature were presented in Chapter 5.8.1.

The Contractor shall be obliged to perform any works under supervision of environmental experts in order to limit those impacts. Due to the works performed, the following mitigation measures are expected, e.g.:

- The Contractor's environmental team shall provide a one-time-only inventory for temporary acquisition sites and permanent acquisition sites prior to the commencement of works, in order to establish the valid distribution of potential stands of protected plant species, and to establish environmentally valuable sites. One cannot damage vegetation located beyond the Contract area during the construction works.
- Alien invasive plant species shall be removed during the works.
- Logging of trees and shrubs shall be limited to the necessary minimum allowing for implementation of the Contract;
- Due to the hatching season of birds, logging of trees and shrubs shall be done from October the 16th until the end of February. Occasional logging may be done during the hatching season under environmental supervision – only after the ornithologist identifies

that there are no occupied bird nests, tree hollows, and that there are no nestlings, or that trees and shrubs are not inhabited by other animals under protection.

- Provide replacement planting in the amount not less than 1,000 trees, compliant with potential natural vegetation and adapted to local habitat conditions; the scope and detailed location of replacement planting shall be established by the Contractor on the stage of commencing the performance;
- One shall assure such an organization of works to maximally limit the Contract implementation period, and in turn minimize the adverse impact of works on animals living in the Contract implementation area and in its vicinity.
- The works shall be done in a way allowing for avoiding killing of animals, and the performance site shall be protected against the presence of small animals. One shall systematically inspect the condition of fences within the entire Contract implementation period, and shall immediately remove potential leakiness.
- The construction site, and especially the opened excavations, shall be inspected and properly protected against forming of traps for animals.
- One shall avoid forming of ruts and other land pits, in which water may stay, in order to avoid potential unstable breeding habitats for amphibians. In case such spots would be formed in locations, which may collide with the ongoing works or with the planned works, and in location of ongoing traffic or planned traffic of vehicles, machines, and devices, they shall be removed on an ongoing basis.
- The works shall be performed in a way assuring the possibility of safe migration for amphibians, including migration of amphibians through internal roads designed within the Contract implementation area.
- If within the work area seasonal migration of amphibians would be identified, the area in question shall be protected to disable migration of amphibians to the site, where they would be endangered due to the works – for that purpose one shall properly fence the construction site with a fencing of a minimum height of 0.5 m, including a 10 cm overhang placed outside (e.g. foil, agro-textile). In the bottom part the fencing material shall be dug into the ground – the fencing needs to tightly adjoin the ground and it needs to be anchored. In case of identifying amphibians therein, they shall be transferred to the area beyond the Works Contract under environmental supervision.
- In case of discovering fossil remnants of plants or animals one shall immediately notify the regional director for environmental protection about it.

Mitigation measures related to protection of natural environment are shown in Appendix 1 – Plan of mitigation measures, items in the table: 5, 6, 12 - 16, 25, 26, 30, 32 – 58, 60 – 63, 67, 113.

Operational stage

Adverse impact on the natural environment is not anticipated on the operational stage, and therefore it was stated that it is not necessary to implement mitigation measures.

6.8.2 Protected sites

The planned Works Contract shall be partially implemented within Natura 2000 site Dolny Dunajec PLH120085 (in a reach of about 1.2 km at the estuary of the River Biała to Dunajec) and in a distance of about 0.85 km from the Biała Tarnowska PLH120090 site.

Within the framework of the environmental impact assessment the Regional Director for Environmental Protection in Cracow examined the expected impact of the contract on protection objectives for Natura 2000 sites Dolny Dunajec PLH120085 and Biała Tarnowska PLH120090, and stated that implementation of the Works Contract shall be done beyond protected environmental habitats placed within the aforementioned Natura 2000 sites, and it shall not affect the objectives and the subject of protection within the aforementioned Natura 2000 sites and shall not adversely affect the integrity of those areas and their connection with other Natura 2000 sites.

As a consequence it was not stated necessary to implement mitigation measures.

6.9 Cultural landscape and monuments

In accordance with an obligation imposed onto the Investor by the Provincial Heritage Conservator in Cracow Branch in Tarnów (note of April 29, 2014, ref. no.: OZT.5183.113.2014.Msz-W.1), it is necessary to take special care about the protection of the railway gatehouse (Kassali Street) at the railway bridge spanning over the Biała River, and to preserve remnants (abutments) of the old bridge located at Kwiatkowskiego Street in Tarnów.

Furthermore, in order to eliminate the potential adverse impact of the Works Contract on yet undiscovered heritage resources, a measure was proposed to assure archaeological supervision throughout the time of earthworks.

If any objects that might be monuments or archaeological artefacts are discovered during the construction works, the Contractor is obliged to act in accordance with provisions of the Act of July 23, 2003 on the Protection of Monuments (consolidated text, OJ of 2014, item 1446, as amended).

Mitigation measures related to the cultural environment are shown in Appendix 1 – Plan of mitigation measures, item in the table: 5, 102 – 104.

Operational stage

Adverse impact on monuments and archaeological sites is not anticipated on the operational stage. As a consequence, no mitigation measures were foreseen.

6.10 Organization of the site facilities and the construction site

The Contractor, by its own effort, will acquire the area for site establishment and storage yards respecting the requirements and conditions of the World Bank regarding compensation. Any approval for temporary acquisition must be preceded by a site inspection in terms of its impact on particular environmental elements.

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Location of the site facilities should take into account environmental aspects, including the following:

- favorable soil conditions, geological structure, vegetation coverage and groundwater level for the environment;
- convenient road access, and access to power supply and water supply for social purposes, and favorable location in relation to developed areas;
- exclusion of the embanked area and protected natural habitats as potential locations for that site.

In addition, the Contractor has to prepare a construction site organization plan which, apart from the location of the site facilities, will indicate the conditions of its development, including: the location of parking lots for the construction equipment and other vehicles, the method of soil and water protection against contamination with substances harmful to the soil environment and groundwater, the method of draining rain water, the location of the storage sites for construction materials, and the places for municipal and hazardous waste storage.

From the environmental and social point of view, the site facilities are a place of potentially adverse impact, due to a risk of contamination of land surface, soil, groundwater, and air as a result of accumulation of waste, building materials, as well as hazardous materials (i.e. fuel, diesel), and also concentration of activities including the use of trucks and heavy equipment (loading, unloading, transportation).

The site facilities should comply with H&S regulations valid in Poland and in the European Union regarding provision of tight sanitary facilities for collection of sewage, and management of solid waste and sewage.

Mitigation measures related to organization of site facilities and storage yards are shown in Appendix 1 – Plan of mitigation measures, item in the table: 13 - 16, 65, 67 - 73, 87 - 91.

6.11 Health and safety of people

Basic forms of adverse impact of the planned Contract on the health and safety of people were presented in Chapter 5.11.

Ensuring protection of human health and life in the case of flooding is the main goal for the implementation of the subject Contract.

The Contractor will be also responsible for implementation of the measures related to protection of health and safety of people during the construction stage. Those measures will be associated with ensuring proper organization of works, as well as fire protection, medical care and preventive care.

It shall additionally be necessary to implement measures to protect neighboring inhabitants against adverse impact of the construction works,

The Contractor's H&S supervision shall be responsible for adequate marking of the construction site according to applicable laws. This marking shall be regularly controlled, in the case of destruction or theft of marking the Contractor shall promptly rebuild or supplement it. The Contractor shall be responsible for any damage to the bulk objects, structures, roads, elements of technical facilities (ditches, culverts, transmission networks),

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as well as information boards, cultural objects, etc., caused by the Contractor or its subcontractors. That liability shall relate to an obligation of repairing any damage of that type at own expense.

The Contractor shall be obliged to agree with road management authorities on the traffic organization and on the works security plan, and to subsequently organize the traffic in accordance with the agreed plans (marking and securing the site and marking of de-tours and recommended road signage related to the change of traffic organization, etc.). The Contractor shall respect the legal limitations of speed and loads per vehicle axle during deliveries of materials and equipment to and from the construction site. The Contractor shall also obtain all necessary permits from the authorities for transportation of non-standard loads and shall constantly inform the Engineer about each case of such a delivery.

The Contractor shall provide training on rules of and conditions under the EMP for the managing staff and for the engineering and technical personnel.

Mitigation measures related to health and safety of people are shown in Appendix 1 to the EMP – Plan of mitigation measures, items in the table: 4, 7, 8, 10, 11, 63, 85, 92 - 101.

6.12 Extraordinary hazards (crisis and emergency situations)

Crisis situation

In the case of crisis situation (other than flood), e.g. fire, accident, serious failure, etc., the Contractor shall be obliged to undertake the following steps:

- a) Immediately inform relevant services:
 - Emergency number (all services) – 112,
 - Medical Emergency – 999,
 - Fire Brigade – 998,
 - Police – 997;
- b) Until relevant services arrive, it shall perform necessary actions limiting the risk of damage to the personnel, the assets, and the environment (as agreed with relevant services, where possible);
- c) Notify the Engineer and the Investor;
- d) After the arrival of relevant services, act strictly in accordance with their guidelines and instructions.

Flood

The occurrence of flood during the construction works related to the development of embankment is a realistic extraordinary threat to the environment resulting from the character of the Works Contract.

For the duration of construction works, Flood Protection Plan should be provided, specifying the relation between the time of commencement of the evacuation or protection of the

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equipment and the occurrence of a certain hydro-meteorological situation. This plan must be approved by the Engineer. The Contractor will be obliged to establish communication with IMGW-PIB to receive current information on weather forecast. In case of a warning on high water level, the Contractor shall immediately notify the Engineer and the Employer, and shall undertake appropriate actions according to the procedures described in the Flood Protection Plan.

Mitigation measures related to flood protection are shown in Appendix 1 – Plan of mitigation measures, item in the table: 99.

Leakage of diesel derivatives

A common type of extraordinary risk to the environment on the construction site is the leakage of diesel derivatives causing pollution of soil, ground or groundwater. For this purpose the Contractor is obliged to apply appropriate preventive measures related to appropriate organization of sites and site facilities, constant control of the condition of applied construction equipment, and also to technical measures allowing for neutralization of the effects of such an event in the form of sorbents available at site facilities.

In case of the leakage one shall immediately remove its source and effects, and contaminated soil layers shall be properly treated in a manner safe for the environment.

Mitigation measures related to the protection of ground and water environment against contamination with diesel derivatives are shown in Appendix 1 – Plan of mitigation measures, items in the table: 73, 77.

Identification of unexploded shells and misfires

In the event of discovering unexploded shells or misfires, the Contractor shall immediately stop the works in a given place, evacuate the workers and notify the police, a licensed sapper unit as well as the Engineer and the Employer. It is strictly forbidden to dig unexploded shells or misfires out, bury them, raise them, transfer them, throw them to the fire or water or to such places as rivers, channels, oxbow lakes, ditches, etc. The Investor did not inspect the work site in terms of presence of unexploded shells or misfires.

The Contractor is obliged to ensure the sapper supervision throughout the performance of earthworks (Contractor's sapper supervision), which would include an on-going inspection of the site in terms of unexploded shells or misfires presence, and – if necessary – clearance of the site from hazardous objects and their proper treatment.

Mitigation measures related to sapper supervision are shown in Appendix 1 – Plan of mitigation measures, items in the table: 93, 101.

Fire

The Contractor is responsible for fire protection in the area of the Works Contract. Detailed procedure in case of fire will be contained in the BIOZ Plan prepared by the Site Manager.

6.13 Waste and sewage

Proper treatment of sewerage and waste produced within the Contract implementation area shall depend on the Contractor's decision. Prior to the commencement of works the Contractor – being a waste producer – shall develop and present for the Engineer's approval the Waste Management Plan (Waste MP) determining proceeding methods for waste to be

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produced during the performance, and including e.g. the conditions related to the waste treatment determined under the EMP.

The Contractor shall be obliged to manage the waste properly – to minimize the volume of produced waste, to collect it selectively in marked containers on separated and properly organized sites, in conditions protecting them against the impact of weather conditions and access of third parties and animals, and then to transfer them to units having relevant permits – for taking-over, transportation, recovery, or treatment of waste, respectively. Hazardous waste shall be segregated and stored separately in designated containers placed on a sealed, hardened, marked sites protected against the access of third parties, until their provision to units authorized for further management of such a waste.

Prior to the commencement of works the Contractor shall inspect the Contract implementation area for the purpose of illegal landfill occurrence. In case of identifying such landfills, the Contractor shall clear such a site through removing the waste and transferring it to the treatment site. The Contractor shall protect the Contract implementation area against the potential production of such a type of landfills within the Contract implementation period.

The construction sites must be equipped with sealed sanitary facilities, while assuring that domestic waste would be transported to a sewage treatment plant.

Guidelines for waste and sewage management are contained in Appendix 1 to the EMP – Plan of mitigation measures, items in the table: 87 – 91.

6.14 Other ESHS hazards

Exemplary forms of additional hazards associated with ESHS issues (other than the ones discussed previously in Chapters 5.1-5.12) were presented in Chapter 5.13.

In order to prevent hazards of that type, except for the measures listed in Chapters 6.1-6.13, Appendix 1 to this EMP implements additional mitigation measures to e.g.:

- prevent accidents and near misses on work site and in other places related to the implementation of the Contract
(e.g. item no. 116 and others listed in Chapters 6.11 and 6.12);
- combat such unacceptable behavior on work site as cases of sexual harassment or mobbing (e.g. item no. 120);
- assure proper social conditions, and labour conditions and payment to the personnel engaged in implementation of the Contract, in compliance with the law (e.g. item no. 121);
- assure proper procedures for ongoing information provision on issues and hazards associated with the aforementioned subject (e.g. item no. 123).

6.15 Requirements for implementation of action plans in the construction phase

Based upon provisions of the Decision on environmental conditions and upon the description of mitigation measures under this EMP, the Contractor should develop numerous documents

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necessary for the performance and subsequently obtain approval of the Engineer for them. The documents are as follows:

- Construction site organization plan, which should contain such elements as e.g.:
 - location of the site facilities,
 - development of the site facilities,
 - protection of the site facilities,
 - service roads,
 - environmental protection on the site facilities, technological roads, and yards.
- Waste management plan, which should contain such elements as e.g.:
 - encountered and predicted types and volumes of waste,
 - means of preventing adverse impact of waste on the environment,
 - means of waste management considering collection, transportation, recovery and treatment of waste,
 - type of generated waste and method for its storage.
- Quality assurance plan/plans, which should contain such elements as e.g.:
 - works performance organization,
 - organization of traffic at the construction site, including marking of the works,
 - H&S and environmental protection,
 - list of working teams,
 - scope of duties of the key personnel,
 - quality control,
 - laboratory tests.
- Flood protection plan for the site for the performance time:
 - monitoring of hydrological and meteorological conditions,
 - conditions for accommodation of flood flows during the performance,
 - the rules of work for the Contractor's team in the period of flood risk,
 - basic duties of the managing staff during the flood risk,
 - list of managing staff in the period of flood risk,
 - list of equipment and transport means needed to conduct rescue actions.
- BIOZ Plan, which should contain such elements as e.g.:
 - indication of plot or land development elements, which may create a risk to safety and health of people,

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- information concerning expected hazards that could occur during the performance, defining the scale and types of hazards and the place and time of occurrence, including reference to the natural environment,
- information on designation and marking for construction work sites, according to the type of hazard,
- information on the method of training for the employees prior to the commencement of particularly hazardous works,
- determining the method of storing and transport of hazardous materials, goods, substances and preparations at the construction site,
- indication of technical and organizational means of safeguarding against hazards connected with the construction works in increased health risk zones, or in their immediate vicinity, including means of safe and efficient communication allowing for quick evacuation in the case of fire, failure, and other hazards,
- indication of the storage location for construction site's documentation and documents necessary for proper operation of machines and other technical devices.

NOTE:

At the development of plans for organization of the construction site, including the Health and Safety Plan, the Contractor shall consider appropriate actions as indicated in the Guidelines of the World Bank concerning protection of health and environment, as well as safeguard policies. Organization plans for the construction site that will be drawn up by the Contractor shall be reviewed and then submitted for approval by the Engineer.

7. Description of measures related to environmental monitoring

Appendix 2 to this EMP provides a summary of monitoring measures binding for the Contractor. Those measures have been developed based upon the conditions included in valid administrative decisions, as issued for the Works Contract, along with additional conditions established on the stage of EMP development.

7.1 Environmental monitoring during the works

Prior to the commencement of works the Contractor should develop an own Plan of monitoring measures that should be correlated with the Plan of monitoring measures of the Engineer and of other institutions involved in the Works Contract implementation. The plan should focus on such environmental elements as: land surface and landscape, climate, air quality, soils and grounds, water, acoustic climate, nature (habitats, flora, fauna), cultural landscape and monuments, organization of the site facilities and the construction site, health and safety of people, extraordinary hazards for the environment, waste and wastewater, requirements for implementation of action plans in the construction phase.

7.1.1. Surface of land, landscape, and soils and grounds

Monitoring for the subject Contract shall comprise the following elements:

- Location of temporary acquisition beyond the environmentally valuable areas indicated by the Contractor's environmental supervision;
- Location of roads, yards, parking lots, etc., including limitation of impact on vegetation and on surface of land, and their proper protection and equipping;
- Observance of traffic regulations by vehicle operators on established technological roads;
- Overview of materials/building materials applied for the construction, so they would not contain substances particularly harmful to the water environment in the form of dissoluble compounds;
- Inspection of protection for excavations;
- Inspection of proper reinstatement of temporary acquisition sites;
- In case of emergency (e.g. leakage of diesel, grease from the construction equipment to the ground, spilling of substances hazardous to the environment in storage locations) one shall undertake mitigation measures (replacement of the ground, inclusive).

Monitoring measures related to the protection of land, landscape, soil and ground were indicated in Appendix 2 to the EMP for Contract 3D.2/2 – Plan of monitoring measures, items in the table: 3, 5 – 19, 22 - 31, 56, 63 – 65, 67 - 77, 87 – 91, 112 – 114.

7.1.2 Climate and air quality

It was stated that it is not necessary to monitor the air quality due to implementation of the Contract. It is however necessary to monitor implementation of mitigation measures.

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Monitoring measures shall be implemented in the form of visual assessment during site inspections undertaken at least once a week in places which are subject to monitoring, and especially at the site facilities and service roads. Monitoring will relate to the assessment of protection for the area against potential dusting from dirt roads and yards, as well as storage areas and means of transport for loose materials, and also the use of motor vehicles and equipment.

Monitoring measures related to the protection of air quality are indicated in Appendix 2 – Plan of monitoring measures, items in the table: 82 – 86, 88.

7.1.3 Surface water

Due to the anticipated small scale of Works Contract's impact on surface water there is no need to monitor the quality of water during the construction stage in the usual way, i.e. without the occurrence of unusual events which could cause the pollution. However, one shall monitor proper implementation of measures mitigating the impact on ground and water environment (proper location and protection of yards, parking lots, waste storage sites, fueling sites for vehicles, etc.; providing work sites with neutralization agents for possible leakage of dangerous substances, including diesel derivatives).

Monitoring measures related to the protection of water are indicated in Appendix 2 to this EMP – Plan of monitoring measures, items in the table: 5, 6, 12 – 14, 16 – 19, 22 – 25, 56 – 58, 63 – 66, 68 – 77, 87 – 91.

7.1.4 Groundwater

Due to the anticipated small scale of Works Contract's impact on groundwater there is no need to monitor the quality of water during the construction stage in the usual way, i.e. without the occurrence of unusual events which could cause the pollution. However, one shall monitor proper implementation of measures mitigating the impact on ground and water environment (proper location and protection of yards, parking lots, waste storage sites, fueling site for vehicles, etc.; providing work sites with neutralization agents for possible leakage of dangerous substances, including diesel derivatives) and shall observe bans related to interference in the river bed and to the extraction of soil from the embanked area.

Monitoring measures related to the protection of water are indicated in Appendix 2 – Plan of monitoring measures, items in the table: 5, 6, 12 – 14, 16 – 19, 22 – 25, 56 – 58, 63 – 66, 68 – 77, 87 – 91.

7.1.5 Acoustic climate

The analyzed site is not exposed to excessive constant noise (i.e. everyday traffic, operation of fixed industrial installations, etc.). Based on the conclusions of the environmental impact assessment performed, it is assumed that the analyzed Works Contract, at meeting all requirements and recommendations contained in the Decision on environmental conditions and in the EMP, shall also not cause such nuisance.

The scope of monitoring for noise protection will include checking of time and manner of execution of works using devices that remain sources of the nuisance noise.

In addition, it is recommended to conduct regular inspections of technical conditions of equipment used for construction works in terms of noise emission, and to undertake rational

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and appropriate actions, adequate to current assessment of the situation, in response to any comments or complaints from residents or users of the adjacent land regarding acoustic nuisance, source of which may be related to the Works Contract implementation.

Monitoring measures related to the protection of acoustic climate are indicated in Appendix 2 to the EMP – Plan of monitoring measures, items in the table: 15, 78 - 82.

7.1.6 Nature

The Contractor should provide the environmental team which will monitor the impact of the construction works on habitats, flora and fauna at the stage of the performance. The monitoring should include e.g. checking of adherence to acceptable dates (periods) for carrying out specific type of works (removal of soil layer, removal of vegetation), control of physical condition of habitat and protection of trees not to be logged, as well as control of security measures to protect small animals (herpetofauna mainly), and control of places conducive to cause danger to animals (depressions, excavations, and other types of traps). It is also necessary to monitor the effectiveness of activities related to the removal of invasive plants, if necessary.

Monitoring measures related to the protection of habitats, flora and fauna are indicated in Appendix 2 to the EMP – Plan of monitoring measures, items in the table: 5, 6, 12 - 16, 25, 26, 30, 32 – 58, 60 – 63, 67, 113.

7.1.7 Cultural landscape and monuments

Due to the performance at historic objects (railway gatehouse and bridge abutments), it is necessary to monitor the works in terms of providing relevant safety measures to protect those objects.

The Contractor shall be moreover obliged to provide permanent archaeological supervision during the earthworks, comprising ongoing inspections of the site in terms of the presence of objects of historic/heritage value, and proper actions in case of identifying such an object.

Monitoring measures related to this issue are indicated in Appendix 2 – Plan of monitoring measures, items in the table: 5, 102 – 104

7.1.8 Organization of the site facilities and the construction site, health and safety of people, extraordinary hazards for the environment, waste and wastewater, requirements for implementation of action plans during the construction phase

The responsibility of the Contractor is to monitor proper implementation of all mitigation measures related to organization of the site facilities and of the construction site, health and safety of people, extraordinary threats to the environment, waste and sewage, and requirements regarding implementation of action plans during the construction phase.

Monitoring measures related to those issues are indicated in Appendix 2 to the EMP for Contract 3D.2/2 – Plan of monitoring measures, items in the table: 13 - 16, 65, 67 - 73, 87 - 91.

7.2 Monitoring of the environment during the use

It is not necessary to monitor the environment in case of the subject Contract on the operational stage. Implementation of mitigation measures assures limitation of the scale and intensity of potential adverse impact to the performance time only.

8 Public consultations

8.1 Public consultations on the EIA stage

In accordance with the Polish EIA procedure, on the stage of issuing a decision on environmental decision it was necessary to perform public consultations for the Contract. Within the framework of administrative proceeding implemented on the environmental impact assessment stage participation of publics was assured, in accordance with Article 79 of the EIA Act.

The Regional Director for Environmental Protection in Cracow provided the public in the announcement (dated 02/25/2015, ref. no.: ST-I.4233.2.2015.MB) with a series of information regarding e.g.: the commencement of proceeding on the issuance of a decision on environmental conditions.

On the public consultations stage, which lasted – in accordance with an announcement of the Regional Director for Environmental Protection in Cracow – for 21 days from 11/27/2015 to 12/18/2015, the Regional Director for Environmental Protection in Cracow did not receive any remarks or requests related to the Works Contract in question.

The Regional Director for Environmental Protection in Cracow has also informed the proceeding parties (notification dated 01/11/2016, ref. no.: ST-I.4233.2.2015.MB) about completing the evidence hearing for the issuance of a decision on environmental conditions for the subject Works Contract, and about the possibility of acknowledging and commenting collected evidence and materials, and informed requirements prior to the issuance of a decision. None of the proceeding parties commented the collected evidence and materials.

8.2 Public consultations on Environmental and Social Management Framework (2015)

The draft ESMF was subject to public consultations conducted in accordance with the World Bank's operational policy OP 4.01. Their purpose was to allow the society to acknowledge contents of that document and to assure the possibility of filing potential remarks, enquiries, and applications to its contents.

Documentation on the public consultations process for the ESMF is available on a website of the Odra-Vistula Flood Management Project Coordination Unit^{22,23}.

8.3 Public consultations on EMP (2019)

The draft of this document is subject to the procedure of public consultations conducted in accordance with the operational policy of the World Bank (OP/PB 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 December 19, 2019

²²http://www.odrapcu.pl/doc/OVFMP/RPZSiS_Zalacznik_08_Raporty_z_procedury_upublicznienia_projektu_EMA_F.pdf

²³ http://www.odrapcu.pl/doc/OVFMP/RPZSiS_Zalacznik_09_Raporty_z_konsultacji_spolecznych_RAF.pdf

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a digital version of the draft EMP was published at the following publicly accessible websites:

- State Water Holding Polish Waters, Regional Water Management Authority in Cracow (PGWWP RZGW in Cracow) – <http://krakow.wody.gov.pl/> (Fig. 1),
- website of the OVFM Project Coordination Unit – www.odrapcu.pl (Fig.2),
- City Office of Tarnów – <https://bip.malopolska.pl/umtarnow,m,272582,pozostale-ogloszenia.html> (Fig. 3),

and a hard copy was made available in offices of the following:

- State Water Holding Polish Waters Regional Water Management Authority in Cracow, Project Implementation Office, 22. Piłsudskiego Str., 31-109 Cracow, room no. 208, on working days between 7:00 a.m. and 3:00 p.m.,
- State Water Holding Polish Waters Regional Water Management Authority in Cracow, Water Inspectorate in Tarnów, 5. Ostrogskich Str., 33-100 Tarnów, on working days between 10:00 a.m. and 1:00 p.m.,
- OVFM Project Office, AECOM Polska Sp. z o.o., 1. Pokoju Al. (building K1), 31-548 Kraków, on working days from 7:30 a.m. to 3:30 p.m.;

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 draft document was made accessible, office opening hours) were publicly informed in the Announcement (Fig. 5) available between 12/19/2019 and 01/01/2020 in the following locations:

- PGW WP RZGW in Cracow, at - <http://krakow.wody.gov.pl/> (Fig. 1),
- Odra-Vistula Flood Management Project Coordination Unit, at – www.odrapcu.pl (Fig. 2),
- City Office of Tarnów, at – <https://bip.malopolska.pl/umtarnow,m,272582,pozostale-ogloszenia.html> (Fig. 3),
- local press – **Gazeta Krakowska** (Fig. 5);
- information boards in the following: PGW WP RZGW in Cracow, PGW WP RZGW in Cracow - Water Inspectorate in Tarnów, City Office of Tarnów, and in locality of Biała (Fig. 6, 7, 8).

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 9th of January 2020 (including information on a place, date and time of the meeting).

The publication of the draft EMP, officially launched on **the December 19, 2019**, was completed after 10 working days, i.e. on **the January 7, 2020**. 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 January 9, 2020 at 4:00 p.m.** in the Mirror Hall of the City Office of Cracow, 10. Wałowa Str., 33-100 Tarnów, where a public presentation of and

Environmental Management Plan for Contract 3D.2/2 *Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow.*

discussion on the draft EMP were organized (Fig. 9, 10, 11 i 12). 12 people participated in the meeting, including representatives of the following: PGW WP RZGW in Cracow, Engineer/Consultant, as well as local authorities and inhabitants (a list of attendees enclosed in appendix No. 1 to this report).

The meeting was started by Mrs. Monika Piszczek – PIO Manager. After a short welcoming she presented objectives of the meeting and invited the participants to ask questions after the presentation.

The presentation of the draft EMP for Contract 3D.2/2 was done by Mr. Artur Adamski – Senior Supporting Expert for Environmental Management in the team of the Engineer/Consultant. The lecturer provided the attendees with basic data on the OVFM Project and discussed the most important assumptions under Component 3 (Flood Protection of the Upper Vistula). Subsequently, main design assumptions for Contract 3D.2/2 Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow were presented. After discussing design and technical assumptions, the lecturer presented selected procedural and organizational aspects of that assignment, and informed the most important conclusions drawn from the environmental impact assessment. The second part of the presentation was related to the Environmental Management Plan. Information on the specificity of the EMP were presented, structure of the document was discussed, and contents of particular EMP chapters for Contract 3D.2/2 were characterized, with special consideration of Appendix 1 and Appendix 2 to the EMP. In the end the lecturer discussed the role of the EMP within the framework of contract for construction works – both: at the stage of bidding procedures, as well as during the performance – and presented the organizational structure and planned methods of supervision over implementation of the EMP.

After completion of the presentation the lecturer invited the attendees to ask questions. Particular questions are given below, including answers provided:

1. *Which values of computational flows were applied at designing of embankment modernization for the River Biala under Contract 3D.2/2?*

The answer clarified that the embankments to be modernized along the River Biala in Tarnów have been designed for 1 in 100 years design water and for 1 in 300 years control water, including freeboard, i.e. 1.0 m over the level of 1 in 100 years water and 0.3 m over the level of 1 in 300 years water.

2. *Was the impact of the embanked area's narrowing at the railway bridge taken into consideration at designing of the height for the embankments to be modernized?*

The answer stated that the designing of required embankment height based upon hydraulic calculations done in the model covering the entire Biala River, up to its estuary, including all bridge objects. The model has been checked by and agreed with the RZGW. The value of damming at bridges has been provided due to the calculations, and subsequently taken into account.

3. *Which technical solutions were designed to prevent a risk of washing the embankment body out in case of long-lasting floods?*

The answer presented detailed technical parameters for the designed embankments, preventing the risk of washing them out in case of long-lasting floods (e.g. providing the embankment with a cement-bentonite membrane at the body and underneath the embankment; proper height and width of the embankment; proper selection of soil for construction of the embankment, proper condensation of the embankment body; etc.).

4. *Why was the sealing of the embankment body and of the subbase designed in a form of cement-bentonite membrane, and not as a steel sheet piling?*

The answer clarified that the decision on selection of design solutions relating to the method of sealing the flood embankment was taken due to economic (lower costs of the cement-bentonite membrane), technological (lower impact of noise and vibrations during the development) and functional (higher tightness of the cement-bentonite membrane) reasons.

5. *Was the potential effect of backwater from the Dunajec channel taken into account at designing the height of the embankments to be modernized?*

The answer stated that the model tests preceding development of the modernization design for the embankments along the River Biała included the impact of water levels in the Dunajec channel and of a potential backwater transferring raised level of water from Dunajec to the Biała river-bed.

6. *When will the development of a missing section of the embankment on the right bank of the River Biała within the allotment gardens in Tarnów start?*

The answer presented required stages for a procedure referring to the commencement of works, as results from the Public Procurement Law and from requirements of the World Bank. Considering the fact that circumstances not attributable to the Investor may occur at each of the aforementioned stages, while affecting the time of particular procedures, the exact dates for selection of the Contractor and for commencement of the works were not stated. It was however informed that the commencement of construction works under Contract 3D.2/1 (including the missing section of the embankment on the right bank of the River Biała in question) may take place in the current calendar year.

7. *Which technical solutions were designed for the left embankment of the River Biała at the estuary of Bródka Stream?*

The answer presented detailed technical solutions for modernization of the left embankment of the River Biała at the estuary of Bródka Stream (i.e. at chainage km 5+320 of the embankment in question). It is culvert L6 at chainage km 5+320 of the embankment. It was designed to extend it from 2xDN1200 to 3xDN1200 through adding the third pipe with an outlet bottom placed 2 meters above the other existing ones. All shall be provided with non-return valves.

8. *Which technical solutions were designed for the left embankment of the River Biała at a river section undergoing erosion at the left bank (i.e. at chainage km 5+100-5+200 of the embankment in question)?*

The answer presented detailed technical solutions for modernization of the left embankment of the River Biala within the considered section (protection of the slope with geo-membrane over a length of about 130 m).

9. *What kind of membrane shall be applied?*

The answer clarified that for the purpose of developing an anti-seepage membrane it is expected to apply CDMM (Continuous Deep Mixing Method) allowing for getting a continuous, homogenous membrane within the entire height of section. A special device – trencher – develops the anti-seepage membrane in a continuous way (uninterrupted anti-seepage membrane). It is expected to develop a membrane with minimum thickness of 0.4 m and depth of 8.0 m. The processed ground shall be mixed with injected (through a system of tubes connected with a mixer) sealing mix. Due to wet mixing of the ground with bentonite-cement mix, the CDMM provides very good results for obtainment of a tight membrane.

After answering all of the questions the meeting was over.

Considering the character of the questions quoted above and asked during the meeting, and the lack of remarks and motions from the public during the publication period for the draft EMP for Contract 3D.2/2, authors of the document assumed that its contents do not require implementation of changes resulting from the publication procedure. After updating the document with a report on publication procedure and after some corrections to the text and to appendices (correction of mistakes identified in the publication period, corrections resulting from the change of the PCU organizational structure), the final EMP shall be submitted to the World Bank for the purpose of obtaining the final acceptance clause, so-called “no objection”.

Figure 1. Announcement on public hearings for the draft EMP published at the website of the PGW WP RZGW in Cracow

Regionalny Zarząd Gospodarki Wodnej w Krakowie

Zbiornik Świnna Poręba Kontrast Układ Czcionka

Państwowe Gospodarstwo Wodne Wody Polskie

O Wodach Polskich Aktualności Nasze działania Zamówienia publiczne Media Kontakt

Wody Polskie / Aktualności / Obwieszczenie z dnia 18.12.2019r.

Obwieszczenie z dnia 18.12.2019r.

Utworzono: 18 grudnia 2019

Zgodnie z wymogami 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 Krakowie (PGW WP RZGW w Krakowie), udostępni do wglądu wszystkim zainteresowanym osobom i instytucjom PROJEKT PLANU ZARZĄDZANIA ŚRODOWISKIEM dla Komponentu 3 Ochrona przed powodzią Górnej Wisły, Podkomponentu 3D Bierna i czynna ochrona w zlewni Sanu, Kontraktu 3D.2/2 Rozbudowa lewego i prawego wału rz. Biała gm. Tarnów m. Tarnów (powiat Miasto Tarnów, gmina Miasto Tarnów, powiat tarnowski, gmina Tarnów, gmina Wierzchosławice) w województwie małopolskim (nazywany dalej PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM).

Każdy zainteresowany może:

A) zapoznać się z PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM od dnia 19.12.2019r. do dnia 07.01.2020r. (10 dni roboczych), w siedzibie:

- Państwowego Gospodarstwa Wodnego Wody Polskie Regionalny Zarząd Gospodarki Wodnej w Krakowie, Jednostka Realizująca Projekt, ul. Piłsudskiego 22, 31-109 Kraków, pokój nr 208, w dniach roboczych od godziny 7:00 do 15:00,
- Państwowego Gospodarstwa Wodnego Wody Polskie Regionalny Zarząd Gospodarki Wodnej w Krakowie, Nadzór Wodny w Tarnowie, ul. Ostrogskich 5, 33-100 Tarnów w dniach roboczych od godziny 10:00 do 13:00,
- Biura Projektu OPDOW, AECOM Polska Sp. z o.o., Al. Pokoju 1 (budynek K1), 31-548 Kraków, w dniach roboczych od godziny 7:30 do 15:30;

lub poprzez stronę internetową:

- PGW WP RZGW w Krakowie pod adresem - <http://krakow.wody.gov.pl/>
- Urzędu Miasta Tarnowa pod adresem - <https://bip.malopolska.pl/umtarnow,m,272582,pozostale-ogloszenia.html,m,272582,pozostale-ogloszenia.html>
- Biura Koordynacji Projektu Ochrony Przeciwpowodziowej w Dorzeczu 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 krakow@wody.gov.pl w dniach roboczych od 19.12.2019r. do dnia 07.01.2020r. (włącznie).

Instytucją właściwą do rozpatrzenia uwag i wniosków jest PGW WP RZGW w Krakowie (osoba do kontaktu: Monika Grzywacz i Małgorzata Myrta, tel.+12 62 84 208).

W dniu 09.01.2020r. o godzinie 16:00, w Sali Lustrzanej Urzędu Miasta Tarnowa, ul. Wałowa 10, 33-100 Tarnów, odbędzie się spotkanie otwarte dla wszystkich zainteresowanych, na którym zostaną przedstawione 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 Krakowska - najpopularniejsza gazeta regionu Małopolski), wywieszenie na tablicach ogłoszeń w: PGW WP RZGW w Krakowie (Nadzór Wodny w Tarnowie), Urzędzie Miasta Tarnowa, jak również na stronach internetowych instytucji wskazanych powyżej.

Dokumenty do pobrania

POLECANE ARTYKUŁY

Sytuacja powodziowa na obszarze działania RZGW w Krakowie

NASZE JEDNOSTKI



Environmental Management Plan for Contract 3D.2/2 *Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow.*

Figure 2. Digital version of the draft EMP and announcement on public hearings for the draft EMP published at the website of the OVFM PCU.

The screenshot shows the website of the Odra Vistula Flood Management Project Coordination Unit (OVFM PCU). The header includes the logo 'bip biuletyn informacji publicznej' and the title 'Biuro Koordynacji Projektu Ochrony Przeciwpowodziowej Dorzecza Odry i Wisły'. The main content area displays the title 'Projekt Planu Zarządzania Środowiskiem dla Kontraktu 3D.2/2: Rozbudowa lewego i prawego wału rz. Biała gm. Tarnów m. Tarnów'. Below the title, there is a list of attachments (Załącznik 1-10) and a link to download the complete document set (ZIP).

Figure 3. Announcement on public hearings for the draft EMP published at the website of the City Office of Tarnów.

The screenshot shows the website of the City Office of Tarnów. The header includes the logo 'bip biuletyn informacji publicznej' and the title 'URZĄD MIASTA TARNOWA'. The main content area displays the title 'OBWIESZCZENIE - PAŃSTWOWE GOSPODARSTWO WODNE WODY POLSKIE'. Below the title, there is a link to the announcement and a link to the project plan. The left sidebar contains a menu with links to various sections of the website.

Figure 4. Announcement on public hearings for the draft EMP published on the web sites and on the bulletin boards.

ANNOUNCEMENT

In accordance with the requirements of the World Bank (Operational Policy OP 4.01), the institution co-financing the *Odra-Vistula Flood Management Project*,

the following is made publicly available:

State Water Holding Polish Waters Regional Water Management Authority in Cracow (PGW WP RZGW in Cracow) makes the **DRAFT ENVIRONMENTAL MANAGEMENT PLAN** for Component 3 *Flood Protection of the Upper Vistula*, Subcomponent 3A *Flood Protection of Upper Vistula Towns and Kraków*, 3D.2/2 *Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow* (District of the City of Tarnów, Municipality of Tarnów, District of Tarnów, Commune of Tarnów, Commune of Wierzchosławice) within Małopolskie Province (hereinafter called the DRAFT ENVIRONMENTAL MANAGEMENT PLAN) available for reviewing to all interested people and institutions.

Any interested party may:

A) acknowledge the DRAFT ENVIRONMENTAL MANAGEMENT PLAN from **12/19/2019** till **01/07/2020** inclusive (10 working days), in the office of:

- State Water Holding Polish Waters Regional Water Management Authority in Cracow, Project Implementation Unit, 22. Piłsudskiego Str., 30-110 Cracow, on working days between 7:00 a.m. and 3:00 p.m.,
- State Water Holding Polish Waters Regional Water Management Authority in Cracow, Water Inspectorate in Tarnów, 5. Ostrojskich Str., 33-100 Tarnów, on working days between 10:00 a.m. and 1:00 p.m.,
- OVFM Project Office, AECOM Polska Sp. z o.o., 1. Pokoju Al. (building K1), 31-548 Kraków, on working days from 7:30 am to 3:30 pm;

or via a website:

- PGW WP RZGW in Cracow, at – <http://krakow.wody.gov.pl/>,
- City Office of Tarnów, at – <https://bip.malopolska.pl/umtarnow.m.272582.pozostale-ogloszenia.html>,
- Odra – Vistula Flood Management Project Coordination Unit, at – www.odrapcu.pl.

B) submit remarks and motions referring to the DRAFT ENVIRONMENTAL MANAGEMENT PLAN in writing and inform them orally to the minutes to the addresses mentioned above or in a digital form to the following e-mail address: krakow@wody.gov.pl, on working days between **12/19/2019** and **01/07/2020** (inclusive).

State Water Holding Polish Waters Regional Water Management Authority in Cracow is a competent institution to consider the remarks and motions (contact persons: Monika Grzywacz and Małgorzata Myrta, telephone +48 12 62 84 208).

There will be a **meeting** on **01/09/2020** at **4:00 p.m.** in the Mirror Hall of the City Office of Tarnów, 10. Wałowa Str., 33-100 Tarnów, **open** to all interested parties, where information on the DRAFT ENVIRONMENTAL MANAGEMENT PLAN shall be presented, and where a public discussion concerning the document, as well as the motions and remarks submitted to the document both prior to the meeting and during the meeting itself, shall be organized.

The Announcement has been published in the press (**Gazeta Krakowska** - the most popular newspaper of the Małopolska region), through placing it on notice boards in: PGW WP RZGW in Cracow (Water Inspectorate in Tarnów), City Office of Tarnów, as well as on the websites of the institutions indicated above.

Figure 5. Announcement on public consultations for the draft EMP published in a local newspaper (Gazeta Krakowska).

Wisła chce zakończyć rok zwycięstwem w Łodzi

Ekstraklasa piłkarska

Bartosz Karz
bartosz.karz@polskagazeta.pl

Przed Wisłą Kraków ostatni mecz w tym roku. Dzisiaj o godz. 19 „Biała Gwiazda” zagra w Łodzi z ŁKS-em i będzie to starcie n.i.o. o to, żeby zimowej przerwy nie spędzić na ostatnim miejscu w tabeli.

- Mecz z Pogonią bardzo dużo nas kosztował, dlatego w tym tygodniu więcej czasu poświęciliśmy na regenerację - mówi trener Wisły Artur Skowronek. - Tak, żeby piłkarze psychologicznie czuli się lepiej w czwartkowym spotkaniu. Mielismy jednak również czas, żeby popracować nad stałymi fragmentami gry. W ataku mamy pomysły na przeciwnika, ale też na taką całościową organizację gry, ŁKS ma swój styl i na pewno będzie w tym konsekwentny. Chcemy przeciwdziałać temu, ale też narzucić pewne swoje schematy, żeby dać nam to skuteczne zakończenie tego roku.

Wisła miała dwa dni więcej na odpoczynek od łodzian, którzy swój mecz z Piastem Gliwice rozgrywali w niedzielę. W dodatku na bardzo ciężkim, błotnistym boisku. Trener „Białej Gwiazdy” zapytany, czy to

wszystko może mieć jakieś znaczenie w czwartek, odpowiada: - 48 godzin w piłce to bardzo dużo. To jest jednak profesjonalny poziom i piłkarze są przygotowani na takie obciążenia. Nasi rywale będą zregenerowani. Wiedzą, że muszą szukać w domu punktów, żeby wyostać się z złej sytuacji. To zawsze powoduje, że można znaleźć w sobie energię. Na pewno tak będzie u przeciwnika, więc w tym elemencie nie szukalibyśmy handicapu dla nas, choć rzeczywiście to 48 godzin, trudne boisko w Gliwicach to jest dużo...

Szkoleniowiec Wisły znajduje sporo ciepłych słów dla ŁKS-u i tego, jak ten zespół gra. Skowronek o łodzianach mówi: - ŁKS cieszy się grą. Widac tam atak pozytywny, konsekwencję w zasadach, schematach gry. Są niekonwencjonalni, potrafią zrobić przewagę. Boczni obrońcy grają w środkowej strefie, co jest nieprzewidywalne i trudne do przeciwdziałania w grze obronnej. Ale o tym wiemy.

Warto dodać, że trener Skowronek już w tym roku zmierzył się ze szkoleniowcem łodzian Kazimierzem Moskałem. Miał to miejsce w marcu w I lidze, gdy prowadzona przez dzisiejszego szkoleniowca „Białą Gwiazdę”



W pierwszej rundzie Wisła pokonała w Krakowie ŁKS 4:0

Stal Mielec przegrała u siebie z ŁKS-em 0:1. Ta porażka na koniec sezonu przesądziła o tym, że do ekstraklasy awansował ŁKS, a nie Stal.

Teraz Skowronek koncentruje się jednak na Wiśle, a w niej jest dobra sytuacja kadrowa. Grać nie mogą tylko Kamil Wojtkowski i Emmanuel Kuma. - Kamil nie doszedł do pełnej sprawności, nie będzie brany pod uwagę na ten mecz. Reszta

na szczęście jest do dyspozycji wyjaśnia trener.

Dopytywany o status Kuma i jego przyszłość w Wiśle, dodaje: - Nie ma jeszcze decyzji w jego sprawie. Trwają rozmowy między zawodnikiem i zarządem.

Wracając do zmeżenia zawodników, dziennikarze dopytywali się na przedmeczowej konferencji prasowej, jak wygląda proces regeneracji wiślaków weteranów Jakuba Błaszczyk-

skiego i Pawła Brożka, którzy w meczu z Pogonią zostali bardzo dużo zdrowia na boisku, a przecież wiadomo, że do młodzieńszków już nie należą i dłużej dochodzą do siebie po takim wysiłku niż 20-latkowie. - Jest indywidualizacja na takiej zasadzie, że jeśli mamy trening regeneracyjny, to nie zawsze ci piłkarze są z zespołem - tłumaczy Skowronek. - Pracują indywidualnie z trenerem Leszkiem Dyją. Mają więcej aspektów przygotowawczych do zajęć, więcej pracy manualnej z fizjoterapeutami. To powoduje, że są gotowi na kolejny mecz.

Przed wyprawą do Łodzi trener Wisły widzi jeszcze jeden plus. Meczem z Pogonią „Biała Gwiazda” przetrwała fatalną pasję porażek. Nastroje w drużynie się poprawiły, a pytany, czy widział inne twarze w zespole, bardziej uśmiechnięte, trener zdradza: - Przede wszystkim widziałem inne twarze po meczu. Widziałem też twarze ludzi w klubie. To pokazuje, jak wielkie emocje dotykają Wiślę Kraków. Cieszę się, że trochę ciężarów i stresu zrzuciliśmy, choć wszyscy zdajemy sobie sprawę z tego, w jakim mieście wciąż jesteśmy. Trochę uśmiechu jednak się pojawiło, choć tylko na chwilę, bo mamy bardzo świadomych piłkarzy. Oni

wiedzą, że jeszcze niczego tym jednym meczem nie wygraliśmy. Musimy potwierdzić swoją wartość w kolejnych spotkaniach.

Wisła akurat z ŁKS-em odniosła w tym sezonie najwyższe zwycięstwo, gdy rozbiła łodzian w Krakowie 4:0. Wbrew jednak samemu wynikowi, nie było to aż tak jednostronne widowisko. Czy jednak trener Skowronek będzie szukał inspiracji do pokonania beniaminka w tamtym spotkaniu?

- Na pewno chcielibyśmy szukać sytuacji tak, jak w tamtym meczu - podkreśla opiekun wiślaków. - Chcielibyśmy jednak szukać więcej równowagi w sposobie grania, co jest już chyba zauważalne w grze Wisły. Musimy zagrać też otwarcie, musimy szukać punktów zwycięstwa, ale niekoniecznie musimy zagrać tak otwarcie, jak u siebie w domu w tym pierwszym meczu.

Przypomnijmy skład Wisły: Białek, Barlik, Klemenc, Janicki, Sadlok, Basha, Błaszczykowski, Pawłowski, Churka, Malik, Brożek.

Program 20 kolejki: ŁKS Łódź - Wisła Kraków (czw. 18), Lech Poznań - Arka Gdynia (czw. 20.30), Cracovia - Śląk Wrocław (pt. 18), Zagłębie Lubin - Legia Warszawa (pt. 20.30), Lechia Gdańsk - Raków Częstochowa (sob. 15), Wisła Płock - Piast Gliwice (sob. 17.00), Górnik Zabrze - Jagiellonia Białystok (sob. 17.30).

REKLAMA 009495750

Prezydent Miasta Nowego Sącza ogłasza konkurs na kandydata na stanowisku **Dyrektora Miejskiego Ośrodka Kultury**

- Szczegółowe warunki konkursu dostępne w BIP Nowego Sącza w zakładce komunikaty i ogłoszenia/oferty pracy w jednostkach stanowiących Kierownictwo.

REKLAMA 009495546

Wg rozpiszki GPMK 6845.65.2019.BN

Burmistrz Tuchowa informuje, że w siedzibie Urzędu Miejskiego w Tuchowie, ul. Rynek 1, został wywieszony do publicznej wiadomości następujący wykaz:

- wykaz nieruchomości przeznaczonych do wydzierżawienia na cele prowadzenia działalności gospodarczej, będącej we władaniu Gminy Tuchów, położonych w miejscowości Tuchów, ul. Rynek, oznaczonych jako działki 2/21 nr 155/5 o powierzchni 70,00 m². Na powyższej nieruchomości posiadany jest ksiąg stanowiący własność osoby fizycznej.

Wykazem można zapoznać się w godzinach pracy urzędu, § 7.30 - 15.30.

Odniesienie wylicza ustawa z dnia 7.01.2020 r.

Oznaczenia:

1. Takson ogólny: miasta i gminy Tuchów.
2. Strona internetowa Gminy.
3. a.a

OGŁOSZENIE O SPRZEDAŻY

w przetargu pisemnym nieograniczonym

Spółka TAURON Dystrybucja S.A. Oddział w Tarnowie

ul. Lwowska 72-96 b, 33-100 Tarnów

NIP 6110202860, REGON 2300179216, wpisana do rejestru przedsiębiorców Krajowego Rejestru Sądowego pod nr KRS 0000073321

przez Sąd Rejonowy dla Krakowa Śródmieścia

XI Wydział Gospodarczy Krajowego Rejestru Sądowego, kapitał zakładowy (wplacony) 560 575 920,52 PLN

ZAPRASZA

do pisemnego nieograniczonego przetargu

na zbycie prawa użytkowania wieczystego działek nr: 67/1 o pow. 1042 m², 67/2 o pow. 136 m² wraz z prawem własności budynków i budowli posadowionych na przedmiotowych działkach położonych w Dąbrowie Tarnowskiej przy ul. Grunwaldzkiej 18, stanowiących własność Skarbu Państwa w użytkowaniu wieczystym TAURON Dystrybucja S.A., objętej księgą wieczystą nr TR1D/00051848/9 prowadzoną przez Sąd Rejonowy w Dąbrowie Tarnowskiej IV Wydział Ksiąg Wieczystych. Zbycie nieruchomości nastąpi z równoczesnym ustanowieniem przez nabywcę nieodpłatnej służebności przesyłu dla urządzeń elektroenergetycznych na rzecz TAURON Dystrybucja S.A. oraz odpłatnej służebności przesyłu na rzecz TAURON Dystrybucja S.A.

Cena wywoławcza za nieruchomość wynosi **510 000,00 zł netto**.

Termin i miejsce składania ofert: **o 9.01.2020 r. do godziny 10.00** w siedzibie TAURON Dystrybucja S.A. Oddział w Tarnowie, ul. Lwowska 72-96b, 33-100 Tarnów, parter, pok. 015 - Biuro Obsługi Kancelaryjnej.

Termin i miejsce przeprowadzenia Przetargu: **9.01.2020 r. o godzinie 13.00** w TAURON Dystrybucja S.A. Oddział w Tarnowie przy ul. Lwowskiej 72-96b, III piętro, sala 301.

Termin i miejsce, w którym można uzyskać informacje dotyczące przedmiotu Przetargu: TAURON Dystrybucja S.A. Oddział w Tarnowie, ul. Lwowska 72-96b, Wydział Organizacji i Administracji w godz. od 7.00 do 15.00, tel. 14 631 12 75, 14 631 12 48.

Szczegółowe warunki Przetargu udostępnione są na stronie internetowej spółki www.tauron-nieruchomosci.pl.

Złożenie oferty jest równoznaczne z oświadczeniem oferenta, iż zapoznał się z treścią Klauzuli informacyjnej TAURON Dystrybucja S.A. stanowiącej załącznik do ogłoszenia zamieszczonego na stronie internetowej.

REKLAMA 009252500

OBWIESZCZENIE

Zgodnie z wymogami 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 Krakowie (PGW WP RZGW w Krakowie), udostępnia do wglądu wszystkim zainteresowanym osobom i instytucjom **PROJEKT PLANU ZARZĄDZANIA ŚRODOWISKIEM** dla Komponentu 3 Ochrona przed powodzią Górną Wisłą. Podkomponentu 3D Bierna i czynna ochrona w zlewni Sanu, Kontraktu 3D 2/2 Rozbudowa lewego i prawego walu rz. Biała gm. Tarnów m. Tarnów (powiat Miasto Tarnów, gmina Miasto Tarnów, powiat tarnowski, gmina Tarnów, gmina Wierchosławice) w województwie małopolskim (nazywany dalej PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM).

Każdy zainteresowany może:

A) zapoznać się z PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM od dnia **19.12.2019 r.** do dnia **7.01.2020 r.** (10 dni roboczych), w siedzibie:

- Państwowego Gospodarstwa Wodnego Wody Polskie Regionalny Zarząd Gospodarki Wodnej w Krakowie, Jednostka Realizująca Projekt, ul. Piłsudskiego 22, 31-109 Kraków, pokój nr 208, w dniach roboczych od godziny 7.00 do 15.00;
- Państwowego Gospodarstwa Wodnego Wody Polskie Regionalny Zarząd Gospodarki Wodnej w Krakowie, Nadzór Wodny w Tarnowie, ul. Ostrogskich 5, 33-100 Tarnów w dniach roboczych od godziny 10.00 do 13.00;
- Biura Projektu OPDOW, AECOM Polska Sp. z o.o., Al. Pokoju 1 (budynek K1), 31-548 Kraków, w dniach roboczych od godziny 7.30 do 15.30;

lub poprzez stronę internetową:

- PGW WP RZGW w Krakowie pod adresem - krakow.wody.gov.pl/
- Urzędu Miasta Tarnowa pod adresem - bip.malopolska.pl/umtarnow.m.272582.pozostale-ogloszenia.html
- Biura Koordynacji Projektu Ochrony Przeciwpowodziowej w Dorzeczu 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 krakow@wody.gov.pl w dniach roboczych od **19.12.2019 r.** do dnia **7.01.2020 r.** (włącznie).

Instytucją właściwą do rozpatrzenia uwag i wniosków jest PGW WP RZGW w Krakowie (osoba do kontaktu: Monika Grzywacz i Małgorzata Myrta, tel. +12 62 84 208).

W dniu **9.01.2020 r. o godzinie 16.00**, w Sali Lustrzanej Urzędu Miasta Tarnowa, ul. Wałowa 10, 33-100 Tarnów, odbędzie się **spotkanie otwarte** dla wszystkich zainteresowanych, na którym zostaną przedstawione 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 Krakowska” - najpopularniejsza gazeta regionu Małopolski), wywieszenie na tablicach ogłoszeń w: PGW WP RZGW w Krakowie (Nadzór Wodny w Tarnowie), Urzędzie Miasta Tarnowa, jak również na stronach internetowych instytucji wskazanych powyżej.

Environmental Management Plan for Contract 3D.2/2 Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow.

Figure 6. Announcement on public hearings for the draft EMP placed on a notice board in the PGW WP RZGW in Cracow.

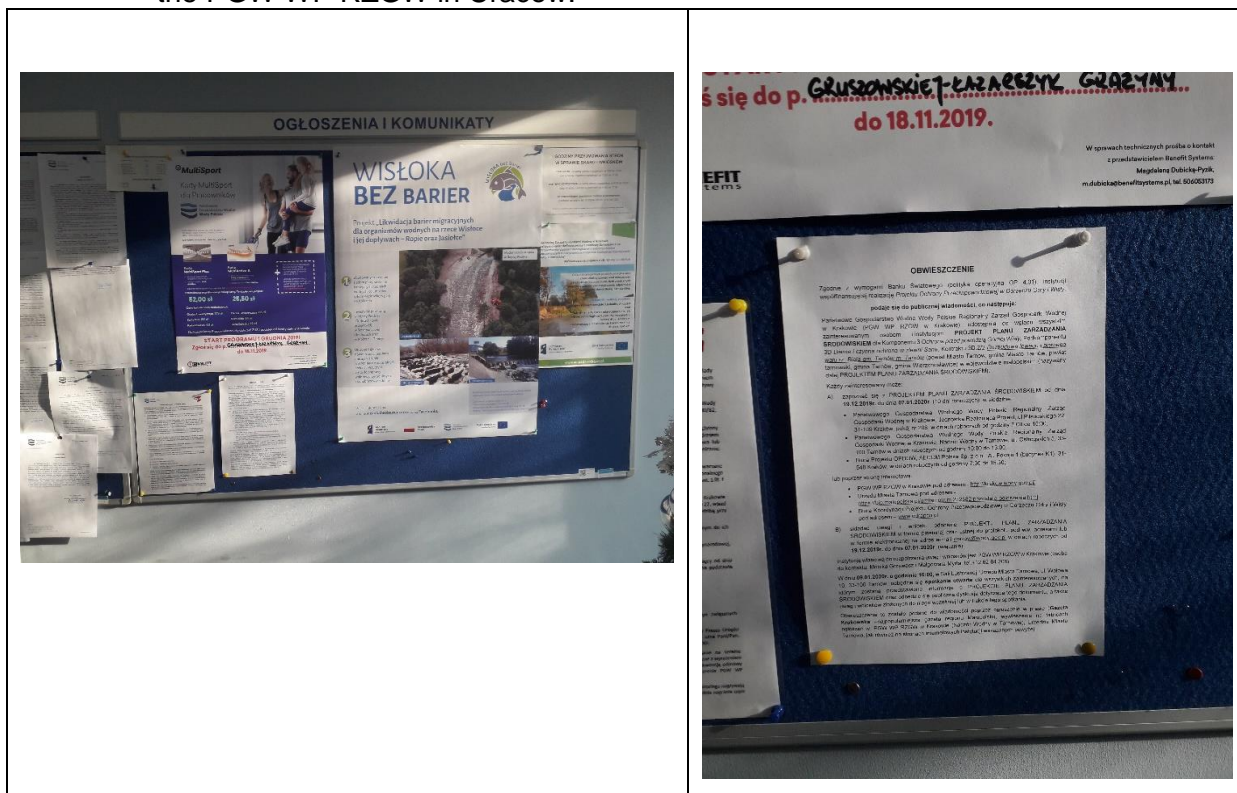
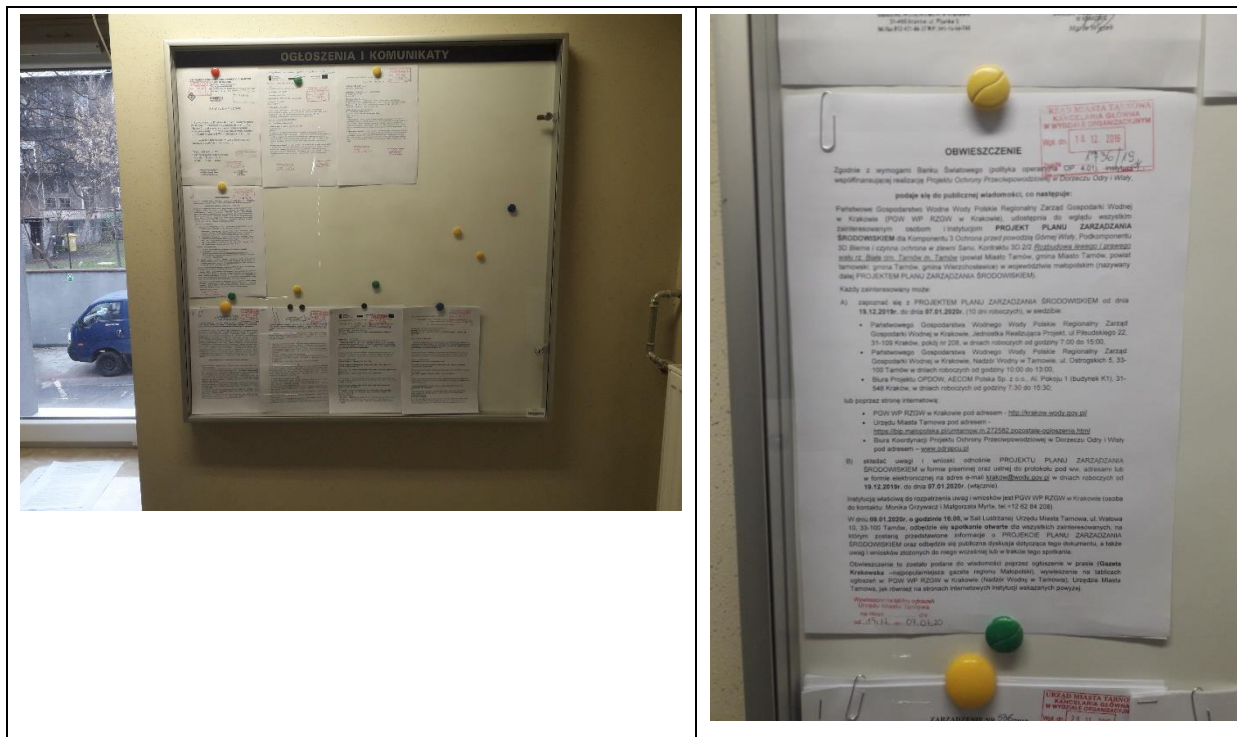


Figure 7. Announcement on public hearings for the draft EMP placed on a notice board in the City Office of Tarnów



Environmental Management Plan for Contract 3D.2/2 *Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow.*

Figure 8. Announcement on public hearings for the draft EMP placed on a notice board in the PGW WP RZGW in Cracow, Water Inspectorate in Tarnów

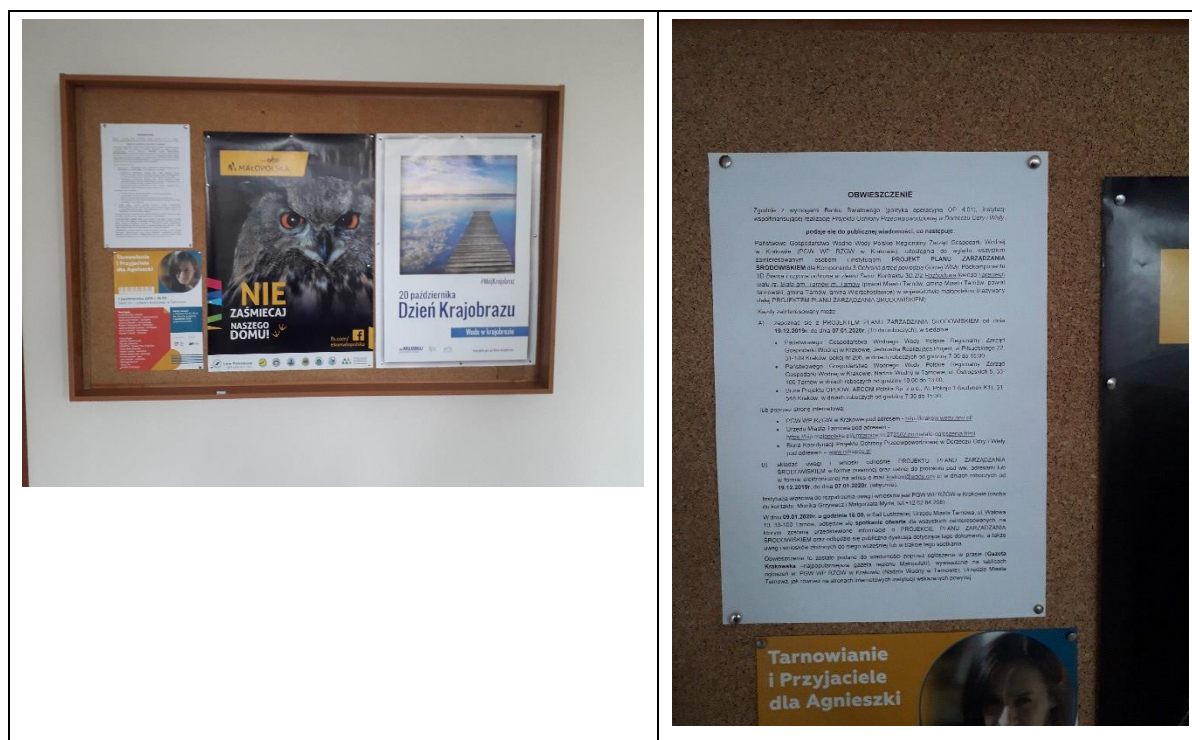


Figure 9 Public hearings for the draft EMP held in the Mirror Hall of the City Office of Tarnów, 10. Wałowa Str., 33-100 Tarnów, January 9, 2020



Environmental Management Plan for Contract 3D.2/2 *Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow.*

Figure 10. Public hearings for the draft EMP held in the Mirror Hall of the City Office of Tarnów, 10. Wałowa Str., 33-100 Tarnów, January 9, 2020



Figure 11. Public hearings for the draft EMP held in the Mirror Hall of the City Office of Tarnów, 10. Wałowa Str., 33-100 Tarnów, January 9, 2020



Figure 12. Public hearings for the draft EMP held in the Mirror Hall of the City Office of Tarnów, 10. Wałowa Str., 33-100 Tarnów, January 9, 2020



9. Organizational structure of EMP implementation

The subject Contract remaining a part of Subcomponent 3D is a part of the Odra-Vistula Flood Management Project co-financed from the funds of the World Bank, the Council of Europe Development Bank, the European Union Cohesion Fund, and the State budget. Therefore, the structure of supervision over implementation of the EMP must correspond to both: regulations of the Polish law, as well as the requirements of the World Bank.

9.1 Odra-Vistula Flood Management Project Coordination Unit

The Project Coordination Unit (PCU) is responsible for the complete coordination of implementation of individual EMPs under the OVFMP.

The PCU assignments are as follows:

- coordination of activities of particular Project Implementation Units and supporting those units in EMP implementation;
- monitoring and assessment of the EMP implementation progress;
- ongoing cooperation with the World Bank, including development of quarterly progress reports on the Project implementation.

9.2 Project Implementation Unit

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

Due to implementation of the OVFM Project, 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 a part of EMP implementation supervision, the PIO fulfils the following assignments:

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

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

- managing, coordinating, and supervising the EMP implemented by the Designer, the Consultant, and the Contractor;
- direct supervision over the correct Contract implementation;
- cooperation with the PCU;

Environmental Management Plan for Contract 3D.2/2 *Expansion of the left and right embankment of the Biala River in the Tarnow Municipality and the City of Tarnow.*

- conducting an administrative and legal supervision over EMP implementation;
- verifying the Reports and studies on EMP implementation, as prepared by the Consultant and by the Contractor;
- conducting a financial supervision over EMP implementation;
- supervising the proper application of formal procedures during implementation of the EMP, as required by the Building Law, Works Contract, the Environmental Protection Law, and others.

9.3 Engineer - Consultant

The role of the Engineer is to support the PIU (PGW WP, RZGW in Cracow) in an effective conduction of the whole Works Contract process (from preparation of the Contract to its settlement).

The Consultant/Engineer shall be selected using 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/Consultant shall be obliged to perform e.g. the supervision over EMP implementation, comprising the following:

- monitoring of EMP implementation, as done 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 usage of building materials which are defective and not accepted for use in the construction industry;
- representing the Investor on site by performing the control of the compliance of the construction process with the design and with the construction permit/investment project implementation permit, and with regulations related to the environmental protection and technical know-how;
- supervision over all issues related to the environmental protection by specialists experienced in the field of environmental protection and by other Engineer's personnel;
- constant monitoring over proper implementation of measures mitigating the adverse environmental impact;
- conduction of additional tests, if it would be necessary to verify the reports of the Contractor;
- identifying problems resulting from harmful environmental impact caused by the construction works, and presentation of 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 preparation of and participation in performing the commissioning activities for finished engineering objects and handing them over for use;
- confirmation of the works factually completed and of the removal of defects, as well as, at the request of the Investor, verification of site's settlements.

9.4 Contractor

A Contractor shall be selected for the purpose of performance, and it shall be responsible for implementation of individual EMPs. The Contractor's liabilities in that scope are as follows:

- conducting construction works according to the rules specified in the EMP, in accordance with contract conditions and design documentation, pursuant to applicable legal provisions and requirements of administrative decisions issued for this Contract;
- ensuring the permanent environmental, sapper, and archeological supervision;
- ensuring the permanent H&S supervision;
- implementation of the Engineer's recommendations (including environmental supervising experts and the Investor's supervising inspector) concerning implementation of the EMP;
- ensuring – prior to the commencement of works – the preparation of: BIOZ Plan, Waste management plan, Quality assurance plan/plans, Flood protection plan for the site for the performance time, and Draft traffic plan for the construction site;
- if it will be necessary, the Contractor's environmental team would develop necessary materials and applications for the obtainment of permits/decisions for departures from bans to protect species of plants, fungi or animals based upon the rules of and in the mode specified by the NC Act (of April 16, 2004). The above-mentioned decisions issued by RDOŚ/GDOŚ are to be requested for by the Contractor. The Contractor's duty is to implement the provisions of obtained decisions for departure from the protection of species of plants, fungi or animals;
- keeping the construction site records;
- drafting the reports (e.g. monthly reports, quarterly reports, final report, report to the RDOŚ and/or GDOŚ only in the scope resulting from administrative decisions obtained on the implementation stage, if they would require reporting of measures in question),
- preparing reports concerning the environmental protection;
- applying to the Investor for modification of design solutions, if it is justified by a necessity of increasing safety for performance of the construction works or improving the construction process related to implementation of the EMP;
- repairing the potential faults/defects, which would be notified by the Engineer and/or by the Client (in case the notification period for defects, guarantee, and warranty would be supported by the Engineer) during the works and during the defects, guarantee, and warranty notification period. The Contractor is obliged to report any actions implemented to remove the faults/defects. The report shall be filed to the Engineer/Client;
- provision of the ESHS Proceeding Code and of ESHS Management Strategy and Implementation Plans - to be developed on the bid submission stage - for the Contract Engineer's acceptance, as described in the Bidding Documents, ItB 11.1 (h), and verification of those documents as a result of periodical CE guidelines.

10. EMP implementation schedule and reporting procedures

Implementation of the EMP shall allow the parties involved in the preparation, performance and supervision of the Works Contract, for:

- identifying different environmental aspects which have a considerable impact on the state of the environment, and therefore allow for controlling, correcting, and reducing them, but which consequently generate economic effects;
- rectifying adverse consequences of the works conducted during the implementation to the benefit of the environment and financial results;
- determining the aims and measures performed within the adopted environmental policy, covered by the EMP, which require expenditures and bring tangible effects;
- identifying and eliminating 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;
- using the natural resources reasonably, with minimum environmental loss and optimum generation of costs.

Furthermore, implementation of recommendations and measures required under the 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 measures by the Contractor;
- a risk of 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 damage 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;
- after obtaining a positive opinion of the World Bank, the draft EMP shall be consecutively subject to public consultations;
- after the public consultations (and supplementing the document with the consultations report), the EMP shall be updated and submitted in its final version for the approval by the World Bank;
- upon the approval of EMP by the World Bank, the 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 required, in English, in paper and in electronic versions, with reference to the obligations required by the EMP and other contractual documents. Those reports shall be subject to the approval of the Engineer and the Employer.

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Furthermore, relevant units involved in implementation of the Contract shall be obliged to fulfil additional obligations related to monitoring and reporting of issues associated with the environmental protection, as determined in administrative decisions issued for the subject Contract (see: Chapter 3.5) and given in Appendix 1 and Appendix 2 to this EMP for Contract 3D.2/2 (Plan of mitigation measures, Plan of monitoring measures).

Monitoring at the works execution stage involves the preparation of summary reports on 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 RDOŚ by the PIU. Detailed contents of the report shall be defined by the Engineer (commencement report, periodical reports – monthly, ad-hoc, closure); it shall also determine the due dates.

The progress reporting system under the Project shall also base on monthly reports submitted by Contractors 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 a part of monthly reports or as a separate document.

The PIU shall supply the PCU with quarterly reports in the part referring to measures implemented by them. They shall contain a required set of information and descriptions allowing for 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 summaries and data in the monthly periods.

1. Reporting:

- a. Reports (monthly, quarterly, ad-hoc, final) shall be developed by the Contractor,
- b. Report review by the Engineer,
- c. Submission of the report to the Employer (for information),
- d. Provision of a report to RDOŚ and / or GDOŚ (only in a range resulting from administrative decisions issued on the performance stage, if they would require reporting of measures in question),
- e. Submission of a PIU's quarterly report to the PCU,
- f. Final report on implementation of the EMP prepared by the Engineer (after verification by the PIU and by the PCU, submitted to the World Bank not later than 3 months after the completion of works).

2. Filing system:

- 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:

- a. ongoing assessment of the outcomes of the planned measures implementation which arise from the EMP;

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- b. ongoing analysis of documentation (Reports of the Contractor) by the Engineer;
- c. providing the Employer with reliable information on the course of the construction process, with special consideration of implementation of the measures limiting the adverse impact on the environment, and recommendations arising from environmental decisions;
- d. development and provision of quarterly reports to the World Bank by the PCU.

The following is planned:

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

11 Source materials

1. Environmental Impact Report with supplementation for the Contract titled: "Extension of the left embankment and of the right embankment of the Biała River in the City of Tarnów".
2. Decision on environmental conditions dated March 8, 2016 (ref. no.: ST-I.4233.2.2015.MB) for the subject Works Contract titled: "Extension of the left embankment and of the right embankment of the Biała River in the City of Tarnów".
3. MasterPlan for the Vistula River Basin. National Water Management Authority, Warsaw 2014.
4. Construction design for the Works Contract titled: "Extension of the left embankment and of the right embankment of the Biała River at local chainage km: 0+000 –3+134, 3+ 134 – 4+516, 4+516 – 5+995 of the left embankment, and at local chainage km: 0+000 – 3+234, 3+234 –4+651, 5+346 – 5+925, and 5+925 – 7+170 of the right embankment (register River Biała chainage km 0+000 - 7+769) in the City of Tarnów, Municipality of Tarnów, District of the City of Tarnów, and in: Biała, Commune of Tarnów, District of Tarnów; and Komorów, Commune of Wierzchosławice, District of Tarnów, Małopolskie Province, within the framework of Contract titled: >>Expansion of Flood Embankments and Construction of the Right Embankment of the River Biała in Tuchów, Tarnów, City of Tarnów<<".
5. Woś A. Regiony klimatyczne Polski w świetle częstości występowania różnych typów pogody; Zeszyty Instytutu Geografii i Przestrzennego Zagospodarowania PAN, no. 20, 1993.
6. Kondracki J., Geografia regionalna Polski, Wydawnictwa Naukowe PWN, Warsaw 2001.
7. Hydrogeologia regionalna Polski, Państwowy Instytut Geologiczny, 2007.
8. Environmental Protection Programme for the City of Tarnów for the years 2017-2024, including a short-term strategy for the years 2017-2020.
9. Report on the environment for Małopolskie Province in 2016, Provincial Inspectorate for Environmental Protection in Cracow, Cracow 2017.
10. Report on the environment for Małopolskie Province in 2017, Provincial Inspectorate for Environmental Protection in Cracow, Cracow 2018.
11. World Bank Operational Policy OP 4.01 – Environmental Impact Assessment (<http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTOPM ANAL/0,,contentMDK:20064724~pagePK:64141683~piPK:64141620~theSitePK:502184~isCURL:Y~isCURL:Y~isCURL:Y~isCURL:Y~isCURL:Y,00.html>).
12. 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).
13. 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>).

14. Odra-Vistula Flood Management Project – Project Operations Manual, Wrocław 2015 (http://www.odrapcu.pl/doc/POM_ENG.pdf).
15. Website: http://www.odrapcu.pl/popdow_dokumenty.html
16. Website: www.isok.gov.pl/
17. Website: www.natura2000.gdos.gov.pl
18. Geoportal for the City of Tarnów: www.zsip.umt.tarnow.pl
19. Małopolska Infrastructure of Spatial Information: <http://miip.geomalopolska.pl>
20. Website: <https://pl.climate-data.org>

12 Appendices

- Appendix 1. Plan of mitigation measures;
- Appendix 2. Plan of monitoring measures;
- Appendix 3. List of national legal acts related to environmental protection;
- Appendix 4. Decisions, resolutions, permits, notices:
 - Appendix 4a. Decision on environmental conditions dated March 8, 2016,
 - Appendix 4b. Opinion of the Provincial Heritage Conservator in Cracow;
 - Appendix 4c. Note of the RDOŚ on protective strips;
 - Appendix 4 d Note of the RDOŚ on replacement planting;
 - Appendix 4 e Note of the RDOŚ on redevelopment and protection of streams.
- Appendix 5. Map with location of the Works Contract;
- Appendix 6. Map with location of the Works Contract in reference to protected areas and to NATURA 2000 sites;
- Appendix 7. Map with location of the Works Contract in reference to areas of potential flood hazard;
- Appendix 8. Map with location of the Works Contract in reference to areas excluded from land of potential flood hazard.
- Appendix 9. Location of natural habitats and fauna occurrence sites within the Works Contract.
- Appendix 10. Map with location of the Works Contract's elements.

13 Summary of drawings

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