

ENVIRONMENTAL MANAGEMENT PLAN

FINAL

for

ODRA RIVER BASIN FLOOD PROTECTION PROJECT

Component B

Modernization of Wroclaw Floodway System

WORKS CONTRACT

***Section: Odra - Widawa Weir - to the railway bridge
(Krzywoustego Street)***

B3-1

ENVIRONMENTAL CATEGORY **A - ACCORDING TO
OP 4.01 WB**

ODRA RIVER BASIN FLOOD PROTECTION PROJECT

Co-financed by:

World Bank, Loan No. 7436-POL

Council of Europe Development Bank, Framework Loan Agreement F/P 1535 (2005)

Grant from the EU Cohesion Fund

Project Coordination Unit
Odra River Basin
Flood Protection Project

Regional Authorities
for Water Management
in Wroclaw

Regional Authorities
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Lower Silesia Board of Amelioration
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Wroclaw – December 2012

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Works Contract: B3-1 Section: Odra - Widawa Weir - to the railway bridge (Krzywoustego Street)

Environmental Management Plan is prepared for Works Contract B3-1 implemented by Lower Silesia Board of Amelioration and Water Structures in Wroclaw (*Dolnoslaski Zarzad Melioracji i Urzadzen Wodnych we Wroclawiu*). EMP is prepared by the Technical Support Consultant Joint Venture Grontmij Polska Sp z o.o./Grontmij Nederland B.V./Sogreah Consultants SAS/Sogreah Polska Sp. z o.o./Ekocentrum Sp. z o.o. It concerns the activities related to the modernization of Wroclaw Floodway System in scope of flood relief through the Widawa Transfer (Component B3).

Prepared by:

Joint Venture: Grontmij Polska Sp z o.o./Grontmij Nederland B.V./Sogreah Consultants SAS/Sogreah Polska Sp. z o.o./Ekocentrum Sp. z o.o.

Project Implementation Unit of Odra River Flood Protection Project in Lower Silesia Board of Amelioration and Water Structures in Wroclaw

Wroclaw - December 2012.

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Definitions and abbreviations used in EMP

Abbreviation	Full name
Beneficiary/Investor / Employer	Lower Silesia Board of Amelioration and Water Structures in Wroclaw
World Bank (WB)	International Bank for Reconstruction and Development (IBRD)
PCU	ORFP Project Coordination Unit
Environmental Decision	Environmental Decision
DZMiUW	Lower Silesia Board of Amelioration and Water Structures in Wroclaw
GDOS	General Director for Environmental Protection
Contractor	Person(s) named as contractor in the Letter of Tender accepted by the Employer and the legal successors in title to this person(s)
Engineer	see <i>Consultant</i>
PIU	Project Implementation Unit
JV	Joint Venture
Consultant or Consultant DZMiUW Wroclaw/Engineer	Joint Venture consisting of: Grontmij Polska Sp. z o. o., Grontmij Nederland B. V., Sogreah Polska Sp. z o. o., Sogreah Consultants SAS, Ekocentrum Sp. z o. o.
EIA	Environmental Impact Assessment
OP	Operational Policy of World Bank
SAC	Special Area of Conservation (within Natura 2000 network)
PAD	Project Appraisal Document of World Bank
ORFPP	Odra River Basin Flood Protection Project
Project	Odra River Basin Flood Protection Project (ORFPP)
EIA Report for subcomponent B3	Construction of flood protection objects/facilities for City of Wroclaw as part of activities related to Modernization of Wroclaw Floodway System for flood relief through the Widawa Transfer as well as embankments located in the Widawa River valley together with bridges
Works contract	Works Contract B3-1 Section: Odra - Widawa Weir - to the railway bridge (Krzywoustego Street)
EMP	Environmental Management Plan
RAP	Resettlement Action Plan
RDOS	Regional Director for Environmental Protection in Wroclaw
RZGW	Regional Authorities for Water Management in Wroclaw
SPA	Special Protection Area (within Natura 2000 network)
EU	European Union
WFS	Wroclaw Floodway System

List of abbreviated names of the acts used in EMP

The

names of acts cited in this EMP are given in the abbreviated version.

Name used in text	Full name (including publication address)
EIA Directive	Directive 85/337/EEC of 27 June 1985 on the assessment of the effects of certain public and private projects on the environment (EU Official Journal L 175 of 05.07.1985, Page 40, as amended)
Flood Risk Directive	Directive 2007/60/WE of the European Parliament and the Council of 23 October 2007 on the assessment and management of flood risks (EU Official Journal L 288 of 06.11.2007, Page 27)
Birds Directive	Directive of the European Parliament and the Council 2009/147/WE of 30 November 2009 on the conservation of wild birds (EU Official Journal L 20 of 26.01.2010, Page 7)
Habitats Directive	Directive of the Council 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora (EU Official Journal L 206 of 22.07.1992, Page 7, as amended)
SEIA Directive	Directive 2001/42/WE of the European Parliament and the Council of 27 June 2001 on the assessment of the effects of certain plans and programmes on the environment (EU Official Journal L 197 of 21.07.2001, Page 30)
Damage Directive	Directive 2004/35/CE of the European Parliament and the Council of 21 April 2004 on environmental liability with regard to the prevention and remedying of environmental damage (EU Official Journal L 143 of 30.04.2004, Page 56, as amended)
Waste Framework Directive	Directive 2008/98/WE of the European Parliament and the Council of 19 November 2008 on waste (EU Official Journal L 312 of 22.11.2008, Page 3)
Water Framework Directive	Directive 2000/60/WE of the European Parliament and the Council of 23 October 2000 establishing a framework for the Community action in the field of water policy (EU Official Journal L 327 of 22.12.2000, Page 1, as amended)
Construction Law	Act of 7 July 1994 - Construction Law (Consolidated text: Journal of Laws of 2010, No. 243, Item 1623, as amended)
Environmental Protection Law	Act of 27 April 2001 - Environmental Protection Law (Consolidated text: Journal of Laws of 2008, No. 25, Item 150, as amended)
Water Law	Act of 18 July 2001 - Water Law (Consolidated text: Journal of Laws of 2012, No. 0, Item 145, as amended)
Special Flood Protection Act	Act of 8 July, 2010 on special rules concerning the preparation for realization of investments pertaining to flood structures (Journal of Laws of 2010, No. 143, item 963)
Nature Conservation Act	Act of 16 April 2004 on the conservation of nature (Consolidation act: Journal of Laws of 2009, No. 151, Item 1220, as amended)
Regulation on the projects likely to significantly affect the environment	Regulation of the Council of Ministers of 9 November 2010 on projects likely to significantly affect the environment (Journal of Laws of 2010 No. 213, Item 1397).

Name used in text	Full name (including publication address)
Monument Protection Act	Act of 23 July 2003 on historic monument protection and care (Journal of Laws of 2010, No. 130, Item 871, as amended)
Waste Act	Act of 27 April 2001 on waste (Consolidation act: Journal of Laws of 2010, No. 185, Item 1243, as amended)
EIA Act	Act of 3 October 2008 on provision of information on environment and its protection, public participation in environmental protection and the environmental impact assessment (Journal of Laws of 2012, No. 36, Item 908, as amended)

SUMMARY

This document presents the Environmental Management Plan (EMP) for the Works Contract B3-1 Section: Odra - Widawa Weir - to the railway bridge (Krzywoustego Street) which is realized in the frame of the Odra River Basin Flood Protection Project (ORFPP), co-financed by the International Bank for Reconstruction and Development (World Bank), Council of Europe Development Bank (CEB) as well as State.

This EMP included the following elements:

- Policy, legal and administrative framework with listed national (Polish) legislation, main steps of EIA procedure, World Bank policies and requirements as well as description of EIA procedure for this works contract,
- Baseline conditions assessed during alignment survey in scope of landscape, climate, air quality, soil, surface and ground water, noise, ecosystems (flora and fauna) and immovable cultural assets,
- Summary of environmental impacts included in EIA Report for all above mentioned environmental elements,
- Description of mitigation measures for realization by the Contractor and Beneficiary on stage of construction and operation of this works contract with reference to soil, surface and ground water, air, noise, flora and fauna. Compensation measures of negative impact on the ecosystems (flora and fauna) have also been presented. Mitigation measures plan in form of a checklist is attached in Appendix 1 hereto,
- Description of monitoring program during phase of construction and operations of works contract for individual environmental elements. Monitoring program in form of checklist is attached in Appendix 2 hereto,
- Course and results of public consultation on stage of general EIA (initial phase), EIA of works contract and on stage of preparation this EMP,
- Institutional arrangements of EMP implementation, implementation schedule and reporting procedures.

The appendices to EMP are the checklists of mitigation measures plan and monitoring program, the Environmental Decision as well as a graphic appendix - location map of the planned Works Contract. The main ground for this EMP for Works Contract B3-1 "Section: Odra - Widawa Weir - to the railway bridge (Krzywoustego Street)" is the EIA Report named: *"Construction of flood protection objects/facilities for City of Wrocław as part of activities related to Modernization of Wrocław Floodway System for flood relief through the Widawa Transfer as well as embankments located in the Widawa River valley together with bridges"* and the Environmental Decision issued by RDOS in Wrocław.

Need of implementation of the Works Contract

The Works Contract, which is a part of Wrocław Floodway System Project (WFS), is aimed at the provision of flood protection for a densely populated area of Wrocław in the valley of the middle Odra River. As a result of the project, reduction of the frequency and extent of floods in the area is expected.

Localization and scope of the Works Contract

Works Contract B3-1 will be realized in the Lower Silesian Province within the administrative boundaries of Wrocław as well as the area of the municipality of Długoleka in the location of Wilczyce within the district of Wrocław. The area covered by the Works Contract (the B3-1 contract) together with the impact area is equal around 727.67 ha and covers 17 WFS tasks / structures with the following numbers: 40, 41.1, 41.2, 41.3, 42.1, 42.11, 44.1, 44.11, 44.12, 44.13, 44.2, 44.3, 45.5, 45.1, 45.2, 45.6 and 46.1, which are further described and shown at map - see Appendix No. 5.

The planned for modernization existing flood-protection embankments as well as the new ones will play the role of the shafts of the Odra - Widawa Channel (at km 0+000 – 2+600) with its length of 2.6 km (the inlet at the Odra River at 244+400) and the Widawa River at km 16+880 - 22+150. The Works Contract will involve the construction of new embankments as well as local reconstruction and modernization consisting in strengthening the embankment body, widening, local raising and leveling as well as the modernization of the bridges located at the section: the Odra - Widawa Transfer up to the railway bridge (Krzywoustego Street).

Current state of the environment

At the stage of EIA Report¹ preparation the valorization of the natural environment in the area of planned works was done. At the valorization of the natural environment and the threats caused by the planned Works Contract onto the fauna and flora, both direct area mapping as well as existing archived materials and available publications were used. The method of "further steps" derived among others from the above literature was used in the valorization proceedings of particular environmental elements which are required for projecting the potential impact:

- Identification of valuable (including protected) objects and natural sites on the basis of in-house works and existing research and planning materials;
- Field inspections to perform the verification and inventory of the quantity and coverage of selected objects and areas as well as specific natural-landscape characteristics.

¹ Environmental Impact Assessment Report "*Construction of flood protection objects/facilities for City of Wrocław as part of activities related to Modernization of Wrocław Floodway System for flood relief through the Widawa Transfer as well as embankments located in the Widawa River valley together with bridges*" - prepared by the team of specialist hired by the Consultant.

- Assessment of the scope of preservation and conversion of individual components of natural environment, i.e. assessment of the scope of compatibility or incompatibility with natural character of the environment (valuation);
- Projecting the risk for particular fragments of land and natural components / elements within the investment as well as its immediate vicinity is conditioned by the value of previously inventoried environmental features.

The assessment of the relevance of the impact onto fauna and flora, Natura 2000 sites was conducted in line with the concept as set out in the following document: *Reference Guide - Determining Whether A Project is Likely to Cause Significant Adverse Environmental Effects** Canadian Environmental Assessment Agency.

As a result of the works related to the identification of values of the natural environment and the cultural heritage, in immediate surroundings of the existing embankment, it has been found (by the team of environmental specialists during the EIA procedure) that this area is characterized by the following local and supra-local conditions:

- The area in the immediate surroundings of the Works Contract is an area of special natural values and of great importance for the formation of high biodiversity. The field research and review of related national technical and legal documentation performed by the independent team of experts as a part of EIA Report preparation confirmed presence of protected and rare species of plants and rare species of animals was recorded. The team of experts also noted presence of protected natural habitats and locally and regionally valuable plant communities. The planned Works Contract in the period of implementation is likely to affect the existing natural habitats which have a relatively high potential for flora and fauna.
- Within the planned project, i.e. within the scope of their potential direct impacts, there are areas under a special form of nature conservation as well as valuable conservation objects. The existing route of the embankments goes through or in vicinity two Natura 2000 sites "Grady w dolinie Odry" SAC PHL020017 and "Grady Odrzańskie" SPA PLB020002:
 - "Grady w dolinie Odry" SAC - it is planned Special Protection Area (within Natura 2000 network). The area was accepted by European Union's decision - Commission Implementing Decision of 10 January 2011 (in the matter of establishment by virtue of the Directive of the Council 92/43/EEC) a fourth updated list of sites of Community importance for the Continental biogeographical region (notified under document C(2010) 9669). The WFS tasks / structures are partially located within the area, then the other tasks / structures - at a distance of more than 450 m from the boundaries of the area.

- "Grady Odrzańskie" SPA - it is Special Area of Bird Conservation (within Natura 2000 network) mentioned in Regulation of the Ministry of the Environment of 12 January 2011 on area of birds special protection (Journal of Laws of 4 February 2011, No. 25, Item 133). All the WFS tasks / structures are located at least 250 m beyond the boundaries of the area.

- *Evaluation of the state of surface waters*

In line with the settlements of the Water Management Plan for the Odra River, the scope of works planned for implementation indicated in the **B 3-1** contract: Section: the Odra - Widawa Transfer up to the railway bridges (Krzywoustego Street) covers the following surface water bodies:

- **For the WFS structures no. 40, 45.5, Surface water bodies:** PLRW60002113399 - the Odra River within the boundaries of Wrocław, **Integrated surface water bodies:** SO 1106;
- For the WFS structures no. 41.1, 41.2, 41.3, 42.1, 42.1.1, 44.1, 44.11, 44.12, 44.13, 44.6, 44.2, 45.5, 45.2, 45.1, 46.1, 44.3, **Surface water bodies:** 60001913679 - the Widawa River from Olesnica to Dobra, **Integrated surface water bodies:** SO 0309.

Within the Works Contract the tasks were divided into two groups:

- a) The tasks the scope of which does not cover the interference within the river-bed of the Widawa as well as the Widawa Odra Relief Channel: **WFS no. 44.1, 44.11, 44.12, 44.13, 44.2, 45.5, 45.1, 46.1, 44.3**. The embankments projected for construction / reconstruction and modernization area located at a distance from 10 m to 850 m from the river-bed of the Widawa River or other surface water courses. In line with the results of the conducted assessment of the impact onto surface and underground waters, no such impact was stated under the conditions of application of mitigating and minimizing measures.
- b) The tasks the location and scope of works of which covers the interference into the river-bed - the actions can cause:
 - **deterioration in the ecological potential of waters: WFS no. 40,**
 - **deterioration in the ecological state of waters: WFS no. 41.1, 41.2, 41.3, 42.1, 42.1.1.**

The scope of the planned works covers regulation and expansion of the river-bed of the Odra - Widawa Relief Channel together with regulation of the river-bed of the Widawa River at 50 m - sections within the bridge structures at km of the Widawa River: WFS 42.1 - km 17+150; WFS 42.1.1 - km 16+880 and at the Widawa - Odra Relief Channel: WFS 41.1, WFS 41.2 - km 1+450; WFS 41.3.

Moreover, the reconstruction of the river-bed at the Weir (WFS 40 - km 2+600) and (WFS 41.3) of the channel section at km 1+450 - 2+600 with the river-bed width up to 50 m. The works are aimed to deepen the river-bed, increase its cross-sectional profile with simultaneous improvement of flow conditions. It will result in the increase of flow at the main river-bed. Within the regulation it shall lead to deepening and strengthening of the bottom within the road and railway bridges which currently cause adverse elevation of water surface and at flood - a risk of erosion of the bottom and banks.

For this reason, according to the operational policy OP 4.01 of the World Bank, the EMP has been prepared. The EMP includes the plan for implementation of mitigation measures that reduce negative impacts on the environment which may arise in the process of contract implementation. The EMP also includes the monitoring plan. Mitigation and monitoring plans are presented in Appendices No 1 and 2 hereto.

Summary of the main negative impacts in the course of implementation of the Works Contract

- *Impact on soil*

In the course of implementation, the negative impacts shall be related to the transformation of land as a result of the conducted earth works and cleaning works within the area. A potential threat can be imposed by local contamination of land surface with petroleum products in case of leaks from used machinery and equipment. In any case, within the scheduled mitigating activities, these negative impacts shall not be significant.

- *Acoustic impact*

The conducted analysis allows a conclusion that the acoustic nuisance shall only occur in a relatively short period of implementation. The performed calculations for selected situations allow a conclusion that the scope of occurrence of noise will remain on acceptable level for residential buildings and other structures protected against noise. Since no construction works are planned to be conducted at night, acoustic effects from 10 pm to 6 am will not occur at all. The acoustic impact of construction works will have short-term effects, lasting in most cases for several days, depending on particular locations of the works conducted, which was taken into account while designing the mitigation measures.

- *Impact on air quality*

Emissions of air pollutants will be produced by operating equipment and machinery used in construction and transportation works. However, the emissions shall be so low and short-term that they will not lead to significant negative effects, in relation to humans and neither to the quality of the entire local environment.

- *Impact on cultural heritage, archaeological sites*

In the course of implementation of the Works Contract, there will be no occurrences of negative impacts onto protected monuments under the laws and regulations on the conservation of monuments and care as the registered monuments are located at a distance of 400 m or more from building site. In Table 6-1 listed are the identified archaeological sites, all more than 300 m away from the planned works, although their actual boundaries are not known. Therefore, their existence is highlighted in this EMP for special attention vis-à-vis the potential for “chance finds”. In addition the works in progress will be discussed with relevant authorities for heritage conservation, and in case of finding historic structures or elements of cultural monuments while conducting these works, archaeological research and rescue will be carried out.

- *Impact on flora and fauna, protected areas, including Natura 2000 sites*

During the construction works there may occur negative impacts on animal habitats and potential loss of animal specimen, yet - with implementation of the mitigating measures - not large enough to cause significant negative environmental impacts. The adopted mitigation measures, including careful selection of embankment alignment or selection of new routes of embankments in such a way to avoid interfering with protected sites, will allow avoiding the significant negative impacts of the project onto protected species for which the Natura 2000 sites were designated, and thus allowing for the classification of these tasks as the project not exerting a significant negative impact on Natura 2000 sites.

At places where it was not possible to avoid negative impacts, in line with the Polish law, the mitigating actions shall be undertaken through compensation and shall be implemented in the course of the project. In some cases, small populations and/or important micro-sites for protected or vulnerable species (e.g. nesting grounds for birds; wintering grounds for amphibians) can be found outside the sensitive habitat areas. These have been identified through detailed biodiversity surveys of the project area, which were done earlier as required in order to get permits for the works. In these cases protective measures will be carried out in accordance with the detailed procedures set out for each species in the official nature protection handbook (the EMP summarizes the specified procedures in each case). This can involve moving individuals to new locations, stopping works during the breeding/nesting season, etc.

The evaluation of the natural consequences of the project implementation showed that the inclusion and implementation of the designed mitigation measures will lead to a significant reduction or complete elimination of all the major and foreseeable risks to the environment associated with the planned project.

- *Impact on landscape*

Construction of the new sections of embankments will permanently change the surrounding landscape. However, it will not violate it in a significant manner. In accordance with the methodology of construction, the new embankments shall be sown with a mixture of grass and such vegetation cover is shown to be the most desirable.

The rehabilitation (modernization) of the existing embankments will not change the surrounding landscape. In accordance with the methodology of construction, the embankments, after modernization, shall be sown with mixture of grass and such vegetation cover is the most desirable.

Planting trees weakens the structure of the embankment and it poses a threat to its sustainability in the future due to existing trees would be removed.

- *Impact on underground waters*

With regard to underground waters, direct but not significant impacts shall appear primarily in the investment period, when these changes are related to land transformations as a result of the conducted earth and cleaning works or possible land contamination with petroleum products in case of any leaks from used machinery and equipment. In any case, with application of the designed mitigating activities, these threats shall not be significant. In case of object-oriented trench drainage works and as a result of pumping, a periodic lowering of the level of underground water can occur at the distance up to 3-5 meters from the trench edge. This effect will be of temporary nature and will not cause any significant negative effect.

- *Impact on surface waters*

By choosing the implementation of the “environmental variant” of works, solutions which maximally reduce the negative impact onto the state of some waters were applied. In particular:

- the introduced adjustments of new embankments along the new route being more distant from the Widawa River and the Odra - Widawa Relief Channel expand the valley of the Odra River and thus increase the natural retention and flood-coverage areas in the valley of the river thus ensuring more space for high water flow and thus reduce possibility of increased pollution/contamination due to water entering the city, industrial areas, washing roads etc
- the location of the embankments at a distance of more than 10 m from the river bed (the bank of the Widawa River and the Odra - Widawa Relief Channel), modernization and reconstruction at the existing routes, introduction of mitigation measures as well as no interference within the beds of these watercourses limit their negative impact onto the objectives of water protection and the objectives of the Natura 2000 areas established within the region,

- actions related to the interference into the river-bed are only linked to the need to increase clear spans of the bridges and improve the safe pass of flood / raised waters (reducing erosion of the bottom and slopes),
- construction of the new embankments is linked only to the protection of built-up areas, the variant which is the least harmful to the environment was selected. The new embankments are to be located at the furthest possible distance from the river, with their convenient communication with the existing infrastructure (roads) and the least intrusive position within the natural habitat. In this manner the natural retention and flood-plain areas of the valley of the Widawa River have been not reduced.

- *Supervision of implementation of mitigation measures*

Implementation of all the biota- and cultural heritage-related mitigation measures will be supervised and controlled by suitable specialists hired by the Contractor as set out in Section 6.1.6, with regular oversight from the official inspectors and the DZMiUW/investor, via supervising engineer and his team as indicated in Section 6.1.5. Further details of these measures are presented in referenced Mitigation and Monitoring tables.

Impacts in the course of operation of the project

- *Impact on soil*

During the operation there will be no interventions on the surface of the embankment crest and slopes.

- *Acoustic impact*

During the operation of the planned flood protection infrastructure noise emissions will not occur. Minimal changes of the acoustic field distribution in the region of rebuilt sections of the embankments may be expected, yet these changes shall in most cases be completely irrelevant to the protection against noise. During the periodic mowing treatments of the embankments (twice a year) - minor noise emissions from equipment used for these works will occur.

- *Impact on air quality*

During the operational stage there will be no negative impacts on air quality.

During the periodic mowing treatments of the embankments (twice a year) - minor amount of exhaust gasses related to the use of power-driven equipment will be emitted. However, this shall be very low amount and shall not pose any threat to the air quality within the area.

- *Impact on cultural heritage*

The operation of the embankment is not relevant to historic constructions and structures, or the whole local cultural heritage. Just the opposite, it will have a positive impact (if there have been any undiscovered places located within the works), by protecting them against flood waters and any connected damage.

Impact on flora and fauna, protected areas, including Natura 2000 sites

Negative impacts onto habitats and protected areas, including Natura 2000 sites, are not expected to occur in the period of operation. Also, in relation to fauna, these impacts are not likely to occur.

- *Impact on the landscape*

The new and modernized embankments shall neither constitute the dominant landscape in terms of height, nor obscure the view of valuable elements of the landscape.

- *Impact on surface and underground waters*

In the operational stage there will be no negative effects on quality of the surface and underground water. This is further ensured by the design solutions related to in-take and discharge of rain-waters of the transport communication objects / premises.

Cumulative impacts

The implementation of the works contract B3-1 can overlap in time with Works Contracts B1-1, B1-2, B1-3, B1-11 and B3-2 located in the area and its neighborhood as well as realization of WFS structures, which will be realized by the Regional Authorities for Water Management in Wroclaw within the same project - Modernization of the Wroclaw Floodway System.

In this case, the cumulative impact of the accomplished investments onto the environment in the scope of gas emission and noise emission (in case of projects located in the proximity to each other) should be expected. The emission of air pollutants as a result of the operation of equipment and machinery at the same time will increase. The very convenient location of these investments in terms of wind rose causes however that pollution generated at the area (at the time of modernization works) will be largely dispersed and moved outside the city. The increased level of noise - in case of imposition of works - should be also expected. These effects will cease with the completion of the investment. The mitigation measures connected with cumulative impacts are described in App. 1 hereto.

Reducing negative impacts and enhancing favorable impacts

The fundamental environmental impacts shall occur during the project implementation. A series of mitigation measures or activities eliminating its negative impacts (App. 1) are planned, aiming at:

- protection of water environment and ground against pollution (use of efficient mechanical equipment, adequate storage and transfer of fuel substances),
- protection against noise: work only during daylight, use of efficient building equipment,
- protection of the natural environment and landscape, through the implementation of the project according to the adopted “environmental variant”, which minimizes interference with the habitats of flora and fauna and points out solutions to minimize impacts on

Natura 2000 sites through, inter alia, actions such as: correction of the route of the embankment beyond natural valuable areas; depending on the location of existing trees growing around the embankment change of rebuilt technology; modernization of the existing embankment by the front method in order to minimize the impact area,

- in case of cutting down trees with a diameter at breast height above 50 cm - to control the occupancy of these trees with protected species of beetles, such as *Cerambyx cerdo*, hermit beetle *Osmoderma eremite* by entomologist and the presence of bats by chiropterologist,
- transfer the protected plant species under supervision of botanist,
- preservation of the herbaceous vegetation by removing the top layer of soil with herbaceous vegetation growing on before start of the work and storing it in a place protected from destruction - in order to use this layer afterwards, during the reclamation works,
- training and supervising persons performing work related to the elimination of invasive plants,
- using secure solutions for preservation of amphibian breeding places to prevent mortality (as a result of the work and traffic) of animal traveling to and from the breeding grounds. Technical solutions (e.g. fencing of construction sites or use of traps in the form of grooves in the ground) shall be performed along sections of embankments corresponding to the length of amphibians breeding site and on the length not less than 150 meters from the edges of those places. Detailed technology and location, and the rules for handling amphibians are to be agreed with a specialist in the field of herpetology,
- during the implementation phase of the project, within the periods indicated by a specialist - herpetologist, monitor daily barriers or traps and move animals according to directions in which they move,
- protection of the cultural heritage through consulting the manner of conducting the works with relevant authorities of heritage conservation and archaeological supervision on the building site.

Compensation measures

At the course of the conducted assessment, it was stated for the environmental variant (second (II) variant), the areas of the existing protected natural habitats are permanently occupied by the flood-protection structures (mainly embankments). The losses shall not be large enough to be considered significant, however, they require to be compensated - at least partially - under article 75 of the act - Environmental Protection Act [unified text: Journal of Laws dated 19.07.2006, no. 129, item 902]. The compensation solutions refer to the

protected species of invertebrates, amphibians and reptiles. The conduct of the following natural compensations are planned:

1. For the destruction of the habitats of butterflies: Dusky Large Blue *Maculinea nausitrus* and Scarce Large Blue *Maculinea teleius* with its total area of 1.04 ha - at the land plot no. 3, Precinct of Swiniary, AM-23 - restore meadows with their area not lower than 2 ha. The restored meadows should have appropriate species composition (for the above-specified species) similar to flora composition of the damaged habitats, considering flood plants both for caterpillars as well as nectar-giving plants for adults of the above-specified butterflies.
2. For the destruction of the habitats of amphibians with their total area of around 0.71 ha - at the land plots no. 7/2, 10 and 11, Precinct of Swojczyce, AM-24 - execute new water reservoirs with their total area of water surface not lower than 1 ha. The reservoirs should have favorable parameters for the breeding of amphibians: their depth - up to 1-1.5 meter at the deepest place, so that once per several years they get dry, tilt of their slopes - around 1:3 - 1:5 both over the water surface as well as under the water surface. There should be shallows made at one of the banks and the opposite bank(s) should be planted with shrubs.

Required monitoring

Monitoring program is attached in App. 2. The monitoring program includes all requirements from the Environmental decision issued by RDOS, which is shown in App. No. 4. The monitoring program allows constant control on proper realization of all mitigation and compensation measures.

Conclusions from the analysis of possible social conflicts

Such conflicts may arise due to the concern that deterioration of living conditions, environment state will follow, or harm will be caused to owners of land plots on which or within which the works will be carried out. In the analyzed case we are dealing with the implementation of a linear investment - for the most part existing for years - which in its course is partly located on valuable lands and partly in the vicinity of human settlements. The linear investment crosses plots belonging to private entities, agricultural lands, NATURA 2000 sites and others. The feelings which this investment may invoke in people living near the implemented project may be mainly on emotional grounds e.g. fears of destruction of the embankment (breach of the embankment), yet informing people living nearby about proper and safe technical and technological solutions should overcome these fears, reassuring at the same that the Works Contract will be protection and not threat.

However on completion of the EIA procedure people are aware of the placement of flood protection structures at the analyzed area and fulfillment of social needs and interests by the

project. The embankments' modernization and construction will improve flood protection of this area (protection of personal property and people's lives) hence the local community is positively disposed towards it and is awaiting the commencement of works as soon as possible. The aspects of the social impacts of the Works Contract B3-1 are described in detail in document entitled *Resettlement Action Plan* (RAP).

Legal context of the project

The present works contract is qualified to the so-called group no. II specified in the regulation of the Ministry of Environment. The Regional Director of the Environmental Protection in Wrocław - through the Resolution dated 20.09.2010 issued the resolution on obligation to perform environmental impact assessment for the project and specified the scope of the present report. After submission of EIA Report by the Beneficiary the Authority (RDOS) carried out EIA procedure with public consultation. For this works contract RDOS issued (31.01.2012) the environmental decision in which determined the conditions of its realization in aspect of environmental protection.

1. INTRODUCTION

This document presents the Environmental Management Plan (EMP) for the Works Contract B3-1 "Section: Odra - Widawa Weir - to the railway bridge (Krzywoustego Street)" realized in the frame of the Odra River Basin Flood Protection Project (ORFPP), co-financed by the International Bank for Reconstruction and Development (World Bank), Council of Europe Development Bank (CEB) as well as State. It should be emphasized that presented document is "site-specific" and is dedicated only and exclusively for Works Contract B3-1, not for all ORFP Project.

The main objective of ORFP Project is to protect the population of the flooded areas of the upper and middle Odra River Valley against the risk of extreme flooding. The Project consists of four components. Two of the most important components (investment components) include Modernization of Wrocław Floodway System (WFS) (Component B) and the Construction of Raciborz Flood Retention Reservoir (Component A). The entities directly responsible for the implementation of these project's components are:

1) Regional Authorities for Water Management Board in Wrocław

- for modernization of WFS, the part related to effort to increase the capacity Odra River basin (Subcomponent B2);

2) Lower Silesia Board of Amelioration and Water Structures in Wrocław

- for modernization of WFS, the part related to modernization of Odra River embankments (Subcomponent B1) and the adaptation of Widawa River Valley to serve as discharge canal for flood waters (Subcomponent B3);

3) Regional Authorities for Water Management Board in Gliwice

- for construction of Raciborz Flood Retention Reservoir (Component A).

According to the information contained in the Project Appraisal Document (PAD), ORFP Project is Category "A"¹ project, (among other Works Contract B3-1) that is likely to have significant negative impact on the environment and requiring an environmental impact assessment² and preparation of Environmental Management Plan³.

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

² According to the contents of Point 8(a) of operational policy OP 4.01 of World Bank.

³ According to the contents of Point 3 in Appendix A and Point 1 in Appendix C of operational policy OP 4.01 of World Bank.

According to the guidelines of the World Bank, the environment management plan is an instrument of determining: (a) a set of measures to eliminate or reduce negative impacts of the project on the environment to be taken at the stage of its implementation and after completion, and (b) the actions necessary for the effective implementation of these measures¹.

Environmental impact assessment for ORFPP has been carried out for the first time in 2003 (as part of a feasibility study for the project), then it was a subject to verification by team of foreign and national consultants. As a result of this work in 2005 a document was prepared *Flood Protection Project for the Odra River Basin - General Environmental Impact Study, Main Report*, containing among other issues Environmental Management Plan for ORFPP (Chapter 8 and 9 of the above document).

In recent years there have been many changes to legal and organizational context of the project in Poland, mainly due to gradual implementation of Community law (including *EIA Directive, Flood Directive, Birds Directive, habitats Directive, SEA Directive, Claim Directive, Waste Framework Directive, Water Framework Directive, etc.*) and to creating national network of Natura 2000. Due to the above mentioned circumstances, in the years 2009-2011, assessment of the impact of each element of the project² was once again prepared, taking into account the current legal and organizational condition of nature and environment protection in Poland.

The main objective of the updated EMP, prepared individually for any Works Contract, is to ensure an effective reduction, compensation and monitoring of adverse environmental impact of the Works Contract, identified at the stage of an environmental impact assessment and during the subsequent administrative procedures necessary for the implementation on stages of realization and exploitation.

It should be stressed that this EMP does not replace the contents of the administrative decisions, and is a separate document to coordinate and systematizes the actions. It also does not exempt from the implementation of specific recommendations contained in the decisions.

¹ According to the contents of Point 3 In Appendix A of operational policy OP 4.01 of World Bank.

² The evaluation ended with the issue of a decision on the environmental conditions for B1, B2 and B3.

2. PROJECT DESCRIPTION

The Works Contract B3-1 is a part of WFS modernization Project, the part related to the construction of flood protection objects/facilities for City of Wrocław as part of activities related to Modernization of Wrocław Floodway System for flood relief through the Widawa Transfer as well as embankments located in the Widawa River valley together with bridges (Subcomponent B3) falling within the competence of Lower Silesia Board of Amelioration and Water Structures in Wrocław.

Project of the modernization of Wrocław Floodway System (WFS) is the second - apart from the construction of Raciborz flood water retention reservoir - main element of Odra River Basin Flood Protection Project (ORFPP), created to support the implementation of governmental 'Program for the Odra 2006'. The aims of the Odra River Basin Flood Protection Project are: protection of lives and property of community living on the flooded areas of the upper and middle Odra River Valley against the risk of extreme flooding - such as the flood in 1997.

The purpose of WFS modernization Project is especially the improvement of Wrocław flood protection system, including enhancement of the flow capacity of the Odra River and its valley for the flood wave within the city and improvement of flood safety within areas adjacent to the river. At present, a flood wave carrying no more than 2 200m³/s can be safely managed through Wrocław, whereas the maximum flood flow in 1997 (recorded just above Wrocław, in Trestno) was equal to 3 640 m³/s. As the Raciborz reservoir shall provide only partial protection of Wrocław, there is the need for a wide range of modernization works and reconstruction of flood protection system and an increase of flow capacity of the river beds of the Odra and Widawa Rivers in and around the city of Wrocław. According to statements included in *"Feasibility Study for the Raciborz Flood Reservoir on the Odra River - Modernization of the Wrocław Floodway System (WFS)"* (Jacobs Gibb Ltd., Jacobs Gibb Polska, Hydroprojekt Sp. z o.o., 2004), the construction of Raciborz flood reservoir shall ensure effective reduction of the flood waves on the Odra River in the wide scope of occurrence probability and together with WFS modernization it is to ensure almost entire protection of Wrocław against a flood event comparable to the flood of 1997 (if such flood occurs again after implementation of both investments, the losses can be reduced by approximately 99%).

2.1. LOCATION AND AREA

Planned Works Contract B3-1 will be realized in Lower Silesia Voivodeship, administratively in the community of Długoleka, Wilczyce locality in the district of Wrocław.

Area of the Works Contract B3-1 together with impact area is ca. 727.67 ha and included the structures indicated in Table 2-1. The structures were presented on the map in Attach. No. 5.

Table 2-1. Structures realized in scope of Works Contract B3-1

Subcomponent B 3	Contract	Name of structure	Area of occupation together with impact area [ha]
B 3 Flood relief through the Widawa Transfer	B3 - 1 Section: Odra - Widawa Weir - to the railway bridge (Krzywoustego Street)	Odra-Widawa Transfer - Flap Weir (WFS structure No. 40)	16.88
		Embankment modernization (WFS structure No. 45.5)	74.9767
		Channel - new left-bank embankment (WFS structure No. 44.11)	76.1724
		Embankment demolition (WFS structure No. 46.1)	59.3778
		Redevelopment of the Road Bridge (WFS structure No. 41.1)	31.2727
		Redevelopment of the Railway Bridge (WFS structure No. WWW 41.2)	31.0521
		Redevelopment of the channel (WFS structure No. 41.3)	18.9577
		Channel - new right-bank embankment (WFS structure No. 44.1)	30.3432
		Embankment modernization (WFS structure No. 45.1)	49.1812
		Wilczyce - embankment modernization (WFS structure No. 45.2)	22.4837
		Wilczyce - new embankment (WFS structure No. 44.2)	40.7645
		Zgorzelisko (to B. Krzywoustego street)- new embankment (WFS structure No. 44.3)	106.0303
		Swojczyce - new embankment (WFS structure No. 44.12)	37.2593
		Kowale - embankment modernization (WFS structure No. 45.6)	28.5691
		Kowale - new embankment (WFS structure No. 44.13)	61.6073
		Redevelopment of the Road Bridge B. Krzywoustego (WFS structure No. 42.1)	11.3997
		Redevelopment of the Railway Bridge B. Krzywoustego (WFS structure No.42.1.1)	31.3456
		Total	727.6733

2.2. PROJECT CHARACTERIZATION

The embankments existing and planned for modernization as well as new will be the embankments of the Odra-Widawa Transfer channel at km 0+000 – 2+600 - length 2.6 km (inlet in km 244+400 of the Odra River and the Widawa River in km 16+880-22+150). Works Contract requires the construction of the new embankments and local reconstruction and modernization on the entire length of the existing embankments, consisting of strengthening of the body; widening, local heightening and smoothening of the crest. Below, in Table 2-2 is

presented information connected with localization of the structures and planned scope of works (see map in Appendix no. 5).

Table 2-2 Localization and scope of works for Contract B3-1 'Section: Odra - Widawa Weir - to the railway bridge (Krzywoustego Street)'

Works contract description		Location and scope of the works			
Works Contract	Location along km of the Widawa River/ Odra-Widawa transfer channel	Task (WFS structure)	The distance from the river bank / the Widawa River bed [m]		Scope and description of the planned works
			min	max	
B3 - 1 Section: Odra - Widawa Weir - to the railway bridge (Krzywoustego Street)	2+600 Odra-Widawa Transfer Channel	Odra - Widawa Transfer Channel - Flap weir (WFS structure No. 40)	450 (Odra)	500 (Odra)	The structure is located at the Odra - Widawa Relief Channel within the housing estates of Strachocin, in the city district of Psie Pole in Wrocław. This is an eastern part of Wrocław, at the right bank of the Odra River (around 400 m from the river-bed), above the Bartoszowice water locks. The scope of the task includes the following works: construction of the left part of the transfer with its width of 3x20 m as a flap weir, construction of the right part of the transfer with its width of 66.9 m as a permanent (fixed) weir with its high crest. The projected capacity of the transfer is equal to 300 m³/s. Regulation (expansion) of the Odra - Widawa Relief Channel
	1+400 Odra-Widawa Transfer Channel	Redevelopment of the Road Bridge (WFS structure No. 41.1)	Odra Widawa channel bed	Odra Widawa channel bed	The projected task shall consist in increasing horizontal spans of two high-water bridges: road and railway bridges. It is projected to increase the length of the railway bridge from 54 m up to 105.5 m and the road bridge from 53 m up to 92 m. The WFS structure no. 41.1 - reconstruction of the road bridge - refers to the Strachocinski bridge which is located between the Strachocin and Swojczyce housing estates at the route of Swojczycka Street. Then the WFS structure no. 41.2 - reconstruction of the railway bridge - refers to the bridge located parallel to the Strachocinski bridge at km 15.854 within the railway lines between Jelcz Laskowice - Wrocław Osobowice. Regulation of the river-bed of the Odra - Widawa Relief Channel
	1+450 Odra-Widawa Transfer Channel	Redevelopment of the Railway Bridge (WFS structure No. 41.2)	Odra Widawa channel bed	Odra Widawa channel bed	
	1+450- 2+600	Extension of the Channel (WFS structure No. 41.3)	Odra Widawa channel bed	Odra Widawa channel bed	Modernization of the existing right-bank embankment of the Relief Channel at the section being parallel to Strachocinska Street from the Strachocinski bridge up to Zamojskiego Street. The total length of the modernization is equal to around 410 m. The scope of the works at the structure also projects widening the river-bed of the drainage channel of the Relief Channel at the bottom up to 50.0 m at its width from the section from the Strachocinski bridge up to the transfer weir. Regulation (expansion) of the Odra - Widawa Relief Channel

Works contract description		Location and scope of the works			
Works Contract	Location along km of the Widawa River/ Odra-Widawa transfer channel	Task (WFS structure)	The distance from the river bank / the Widawa River bed [m]		Scope and description of the planned works
			min	max	
	17+150 Widawa 50m	Redevelopment of the Road Bridge B. Krzywoustego (WFS structure No. 42.1)	Widawa riverbed	Widawa riverbed	The task refers to the road bridge at the route of Krzywoustego Street in Wrocław. The length of the northern bridge will be increased from 61.8 m up to 113.82 m and the length of the southern bridge - from 62.3 m up to 113.82 m. Regulation of the Widawa River-bed at the section of 50 m.
	16+ 880 Widawa 50m	Redevelopment of the Railway Bridge B. Krzywoustego (WFS structure No. 42.1.1)	Widawa riverbed	Widawa riverbed	The works will cover securing the river-bed banks of the Widawa River within the area of the bridge abutments without the need to extend the bridge. The structure is located in the northern part of the city of Wrocław, below the road bridge at the route of Krzywoustego Street. Regulation of the Widawa River-bed at the section of 50 m.
	0+900 - 1+400	Channel - new right-bank embankment (WFS structure No. 44.1)	Odra Widawa channel 40	Odra Widawa channel 100	The task is aimed to shift the right-bank embankment within km 0.9 – 1.4 of the Odra - Widawa Relief Channel. The structure is located at the border of the following precincts: Strachocin and Swojczyce, parallel to Wilczycka Street in Wrocław. The length of the new embankment is equal to around 480 m. The scope of the works is projected to cover re-constructing the embankment crossing with Ludowa Street, widening the river-bed of the drainage channel of the Relief Channel at the bottom up to 35.0 at its width as well as demolition of the existing embankment at the length of 455 m.
	0+500 -2+050	Channel - new left-bank embankment (WFS structure No. 44.11)	Odra Widawa channel 40	Odra Widawa channel 100	The task concerns leading the left-bank embankment of the Relief Channel along the intermediate route between the high embankment (projected for demolition) and the low embankment thus increasing the area of the protected area up to the connection of the Relief Channel with the Widawa River. The beginning of the embankment is located below 1.0 km of the Channel, the end - within the area of the old waste dumping site at the level of Buczynska Street in Wrocław. The total length of the new embankment is equal to around 1810 m.
	from 20+000 of the Widawa River to 0+500 of Odra-Widawa Transfer Channel	Swojczyce - new embankment (WFS structure No. 44.12)	Odra Widawa channel 50	Widawa 430	The structure is located parallel to the Swojczycko-Kowalska Dyke. The task is a continuation of the new embankment at the Channel (the WFS no. 44.11). The end of the section is located at the level of km 2.1 within the Widawa River. The total length of the new embankment is equal to around 650 m. The scope of the works includes constructing the new embankment body and its sealing.
	Widawa 17+100 - 19+500	Kowale - new embankment (WFS structure No. 44.13)	30	450	The structure protects the housing estate of Kowale located along the projected Swojczycka Route and constitutes an extension of the WFS structure no. 45.6 with its end at Krzywoustego Street in Wrocław. The total length of the new embankment will be equal to around 1960 m. The scope of the

Works contract description		Location and scope of the works			
Works Contract	Location along km of the Widawa River/ Odra-Widawa transfer channel	Task (WFS structure)	The distance from the river bank / the Widawa River bed [m]		Scope and description of the planned works
			min	max	
					works includes constructing the new embankment body and its sealing with bentonite matting.
	Widawa 19+450 - 20+150	Kowale - embankment modernization (WFS structure No. 45.6)	180	240	The structure constitutes an extension of the new Swojczycki embankment (WFS no. 44.12) and runs parallel to the Swojczycko-Kowalska Dyke, at the section from km 19.45 up to km 20.1 within the Widawa River. The length of the modernized embankment is equal to around 650 m. The projected works shall involve expanding the embankment body in order to seal it (by means of bentonite matting) and to improve its stability together with all the required infrastructure.
	Widawa 22+150 - 23+100	Wilczyce - new embankment (WFS structure No. 44.2)	20	180	The structure is located within the municipality of Dlugoleka, at the location of Wilczyce at the right bank of the Widawa River. The scope of the works includes constructing the new embankment body at the section from the bridge at the Widawa River up to the existing embankment at the extension of Lakowa Street (with its length of around 1060 m) and its sealing.
	Shipping Channel of the Odra River 244+600 Odra-Widawa Transfer Channel 2+000 - 3+000	Embankment modernization (WFS structure No. 45.5)	20	80	The structure is located at the right bank of the Odra River (the area of the Bartoszowice water locks) and at the left bank of the Relief Channel in Wrocław - it protects the housing estate of Swojczyce. The scope of the works includes extending the embankment crest up to 5.0 m with simultaneous sealing of the embankment slopes and footing at the water-side by means of a shield made of bentonite matting. The length of the modernized embankment is equal to around 1350 m.
	Widawa 21+500 - 22+150	Wilczyce - embankment modernization (WFS structure No. 45.2)	20	80	The structure is located within the municipality of Dlugoleka, at the location of Wilczyce at the right bank of the Widawa River, below the road bridge. The scope of the works includes extending the embankment body in order to seal it with a shield made of bentonite matting and to improve its stability together with all the required infrastructure. The length of the modernized embankment is equal to around 610 m.
	Odra-Widawa Transfer Channel 0+950 Widawa 21+700	Embankment modernization (WFS structure No. 45.1)	40	180	The structure is located within the region of Swojczyce at the right bank of the Relief Channel along Wilczycka Street in Wrocław. The scope of the works includes raising the embankment body with its sealing by means of a shield made of bentonite matting. The scope of the works at the structure also projects widening the river-bed of the drainage channel of the Relief Channel at the bottom up to 35.0 at its width. The total length of the new embankment shall be equal to around 1100 m.
	Odra-Widawa Transfer Channel 0+600 -	Embankment demolition (WFS structure No. 46.1)	20	200	The scope of the planned works at the structure projects demolishing the existing embankment of the Relief Channel (left-bank) at the section from km 0.7 – 2.0 of the Odra -

Works contract description		Location and scope of the works			
Works Contract	Location along km of the Widawa River/ Odra-Widawa transfer channel	Task (WFS structure)	The distance from the river bank / the Widawa River bed [m]		Scope and description of the planned works
			min	max	
	1+950				Widawa channel within the region of Swojczyce. In reference to the construction of the new embankment (WFS structure no. 44.11). The total length of the demolished embankment is equal to around 1410 m.
	Widawa 17+100 - 21+500	Zgorzelisko (to B. Krzywoustego street) - new embankment (WFS structure No. 44.3)	40	450	The structure is located at the right bank of the Widawa River starting from the outlet of the Relief Channel up to Krzywoustego Street in Wrocław. The scope of the works includes constructing the new embankment body and its sealing with bentonite matting with its length of around 3750 m.

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3. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

3.1. RELEVANT INSTITUTIONS ENGAGED IN PROJECT REALIZATION

During the construction, modernization and operation of embankments in Poland the issue of environmental protection is managed by mutual cooperation of the following statutory government institutions:

On central level:

- Ministry of the Environment,
- Ministry of Agriculture and Rural Development,
- Ministry of Administration and Digitization,
- National Water Management Authority,
- Chief Inspector of Environmental Protection,
- General Director for Environmental Protection,
- Chief Sanitary Inspector.

On regional level:

- Regional Director for Environmental Protection in Wrocław ,
- Marshal of the Lower Silesia,
- Lower Silesian Sanitary Inspector,
- Lower Silesian Inspector for Environmental Protection.

In scope of monuments protection:

- Ministry of Culture,
- Monuments' Conservator for Lower Silesia.

Moreover, the following entities shall take part in the implementation of the project:

- Governor of the Lower Silesia ,
- Lower Silesia Board for Amelioration and Water Structures in Wrocław,
- Regional Authorities for Water Management in Wrocław,
- Regional Authorities for Water Management in Gliwice,
- Project Coordination Unit for Odra River Basin Flood Protection Project (PCU).

3.2. EXISTING POLISH LEGISLATION IN SCOPE OF ENVIRONMENTAL PROTECTION

According to Polish legislation the investment process in scope of environmental protection is regulated by several acts and regulations. The environmental legislation in force in Poland is summarized in Appendix 3.

3.3. MAIN STEPS OF NATIONAL PROCEDURE ON EIA IN POLAND

The EIA procedure for investment projects in Poland has been regulated in art. 59 - 130 of the EIA Act and covers in particular:

- verification of the report on the environmental impact of the project (EIA Report),
- obtaining all the opinions and arrangements required by law,
- providing opportunities for public participation in the proceedings.

Lack of the above elements in the proceedings in the scope of issuing an environmental decision leads to a conclusion that the EIA has not been conducted. The following planned projects likely to have significant effects on the environment, require conducting the EIA:

- planned projects/works contracts always likely to have significant effects on the environment. These are the so-called **group I works contracts (projects)**.
- planned works contracts potentially likely to have significant effects on the environment, if the obligation to conduct the EIA had been indicated through screening. These constitute the so-called **group II works contracts (projects)**.

The EIA is conducted in the first stage of obtaining the development consent, within the scope of the proceedings leading to issuing an environmental decision. An environmental decision specifies the terms of acceptance of the project for implementation in view of the environmental protection requirements. It is issued for projects which are likely to have significant effects on the environment and thus for the works contracts of group I and II. An environmental decision is issued prior to obtaining investment consents, including, among others:

- a construction permit, a decision on approval of the construction project and a permit to renew the construction works;
- a water permit to construct water structures;
- a decision settling the conditions of conducting works consisting in the regulation of waters and the construction of flood protection embankments as well as drainage works, construction drainages and other earth works changing water relations within the areas with specific natural values, especially areas with gatherings of greenery with their specific natural value, areas with landscape and ecological values, areas of mass bird nesting, settlements of protected species and spawning grounds, over-wintering areas, fish ladders and places of mass fish migration and other aquatic organisms.

Competent authorities

The authority competent to issue an environmental decision is as follows:

- 1) Regional Director for Environmental Protection - for the following projects: belonging to the group I, and to the group I and II accomplished within the 'closed areas' and marine areas,

- 2) governor of the region - in case of consolidation, exchange or division of land;
- 3) director of the Regional Directorate of State Forests - in case of change of forests owned by the Treasury into farmland;
- 4) mayor of a village, town or city - for other projects.

Requirements concerning the application for an environmental decision

An environmental decision is issued at the application of a business entity which plans to undertake a project/particular works contract (i.e. investor). It should meet the formal requirements of an application specified in the regulations of the national Administrative Proceedings Code.

The application must be accompanied by:

1. in case of the Group I works contracts - EIA report, and if the applicant applies for the specification of the report scope - Information Data Sheet (IDS) (a document which contains the basic data on the planned works contract);
2. in case of the Group II works contracts - IDS;
3. a copy of the cadastral map certified by the competent authority covering the area in where the works contract will be carried out and the area to be affected;
4. for the works contracts for which the Regional Director for Environmental Protection is the body conducting the proceedings - information and map extract from the local spatial management plan, if such plan has been adopted, or the statement that no such plan is in place;
5. extract from the register of property grounds covering the projected area in which the works contract will be run and the area affected by the project.

Qualification for the EIA proceedings and specification of the report scope

Group I works contracts

The obligation to conduct the EIA for the projected works contract from Group I derives from legal regulations (Act). By submitting the application for issuing an environmental decision for the works contracts from Group I instead of the report on the environmental impact of the project, the applicant is allowed to submit the IDS together with an application for specification of the report scope. The resolution on the specification of the report scope is adopted upon consulting the Regional Director for Environmental Protection and - where appropriate - the State Sanitary Inspection.

The body of the State Sanitary Inspection which is competent to issue opinions is as follows:

1. state provincial sanitary inspector for the Group I works contracts,
2. state regional sanitary inspector or state border sanitary inspector - with regard to other works contracts likely to have significant effects on the environment,

3. competent body of the Military Sanitary Inspection with regard to the projects likely to have significant effects on the environment implemented in the areas subject to the Minister of National Defense,
4. competent body of the State Sanitary Inspection of the Ministry of the Interior and Administration in case of projects likely to have significant effects on the environment implemented within the areas of organizational units subordinate and supervised by the competent Minister of the Interior.

Group II works contracts

The obligation to conduct the EIA for the projected works contract from Group I is specified - through a resolution - by the authority competent to issue an environmental decision, cumulatively considering the aspects indicated in the EIA regulation. The obligation to conduct the EIA is declared mandatory if the possibility for implementation of the group II works contract is subject to the establishment of an area of limited use. The resolution setting the obligation or no obligation to conduct the EIA is adopted upon consulting the body of sanitary inspection.

Public consultation, consultation with environment authorities and public health authorities

Before issuing an environmental decision, the competent body authorized for its issue, provides an opportunity for public participation in the proceedings in which an EIA is prepared. The competent body to issue an environmental decision prior to issuing or changing the decision in the proceedings in which the EIA Report is drawn up, makes the following information public:

1. entering the EIA and commencement of the proceedings;
2. subject of the decision which is to be delivered on the matter;
3. competent body to issue the decision and competent bodies to issue opinions and make arrangements;
4. procedures on getting acquainted with the documentation on the matter at the place where it is made available for inspection and on submitting comments and claims;
5. manner and place of submission of comments and claims, while pointing out 21-day time limit for their submission;
6. competent body for consideration of comments and claims;
7. time and place of administrative hearing open to the public, if it is to be conducted;
8. proceedings on cross-border impact on the environment if it is to be conducted.

Disclosure of the information to the public is performed by - cumulatively - providing the information on the internet site of the Public Information Bulletin of the competent body, publishing it in a customary manner at the registered office of the competent body, and publishing it through an announcement in a customary manner at the place of the projected

Works Contract. In case the registered office of the competent body is located in the area of other municipality than the locally competent municipality in terms of the subject of the proceedings, disclosure of the information to the public is also performed by an announcement in press or in a customary manner adopted at a particular location which is appropriate in terms of the subject of the proceedings. If the number of parties in the proceedings exceeds 20, the parties can be notified about decisions and other operations of the competent authorities through an announcement or in other customary manner adopted at a particular location.

Issue of an environmental decision

In the environmental decision issued upon conducting the EIA, the competent body:

1. specifies, among others: type and location of the undertaking of the works contract, conditions of making use of the land at the implementation phase and operational phase or making use of the works contract, requirements in the scope of environmental protection necessary to be considered in the documentation required to issue further investment decisions, including in particular the construction project,
2. imposes an obligation to prevent, reduce and to monitor the impact of the works contract onto the environment, or states there is a need to execute natural compensation - if such need derives from the EIA;
3. states there is a need to create an area of limited use - if such need derives from the EIA;
4. demands re-conducting the EIA, together with the justification of the demand;
5. is allowed to impose an obligation onto the applicant to provide post-implementation analysis, specifying its scope and deadline for submission.

In case if the EIA is not conducted within the proceedings, the authority states no need to conduct the EIA in the environmental decision. In this case, the justification of the decision, apart from the requirements under Administrative Proceedings Code, should include the information on the conditions considered along with the demand to conduct the EIA.

Regardless of the fact whether the EIA was conducted or not, the competent body to issue the environmental decision publishes the information on the issued decision and on the procedures of getting acquainted with its content and the documentation in the matter.

Assessment of the impact of the projects/works contracts on the Natura 2000 site network

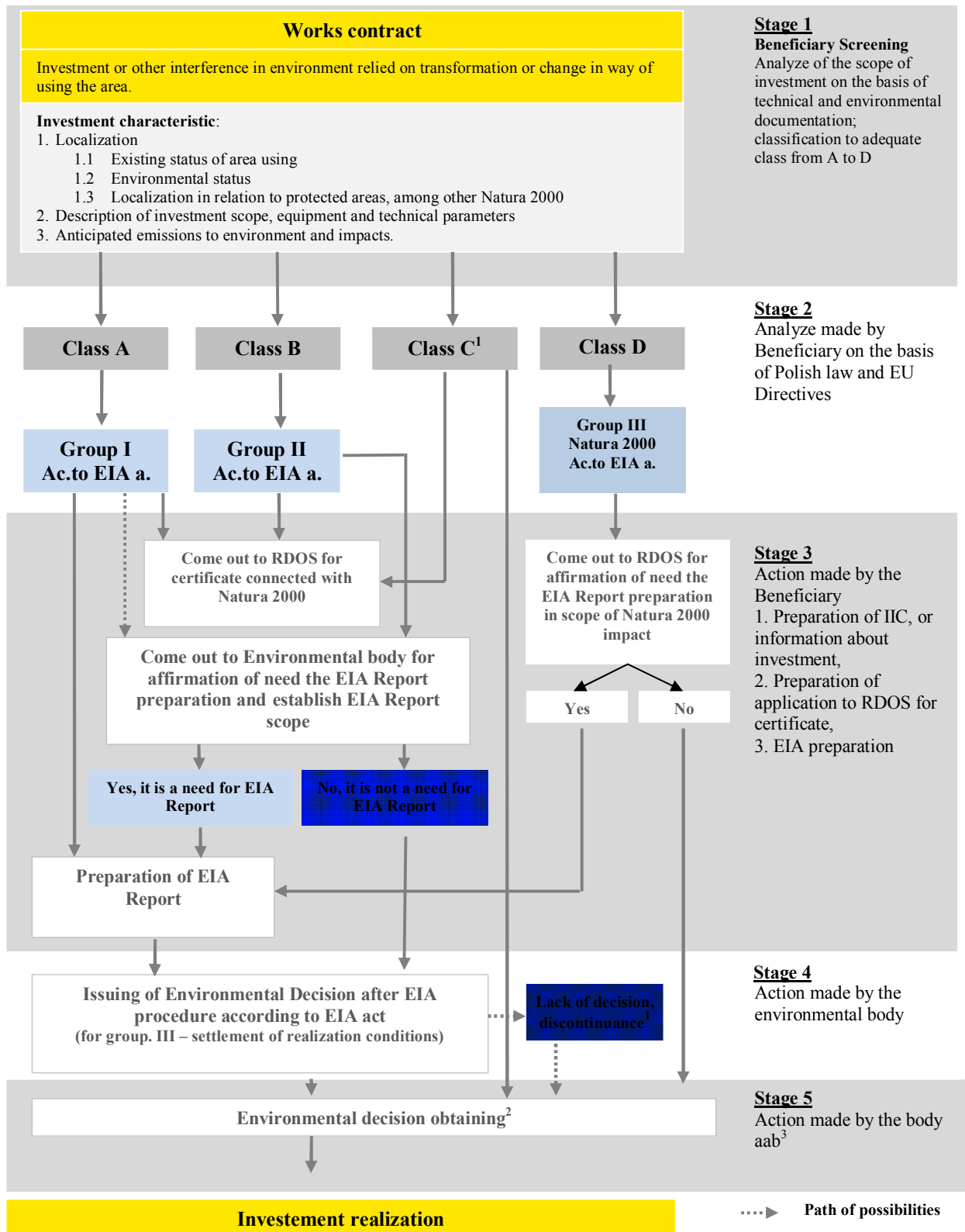
The subject of the impact assessment of the works contracts on the Natura 2000 site network is covered by the provisions of art. 59-112 of the Act on assessment of environmental impact and art. 33 -36 of the Nature Conservation Act.

Prior to launching the works contracts other than these likely to have significant effects on the environment (i.e. group I or II projects), not directly related to the protection of any Natura 2000 site or not requiring such protection, the body issuing the decision authorizing the implementation of the project is obliged to consider - prior to its issue - whether the projected works contract is potentially likely to have significant effects on any Natura 2000 site. These are so-called **works contracts (projects) of group III**. The assessment of the impact of the works contract of group III onto the Natura 2000 site is understood as the EIA limited to assessment of the works contract on Natura 2000 sites.

If the Regional Director for Environmental Protection considers the works contract to be likely to have significant effects on Natura 2000 sites, they issue a resolution on the obligation of conducting the impact assessment on Natura 2000 sites. In such resolution the body requires the applicant to submit a report on the impact of the works contract on the Natura 2000 sites and defines the scope of the report.

After having conducted the assessment of the impact of the works contract on the Natura 2000 sites, the Regional Director for Environmental Protection issues a resolution settling the terms and conditions of the works contract in the scope of the impact onto the Natura 2000 sites.

Below, in figure 3-1, particular stages of the procedure of obtaining the consent for the works contract/project are presented, taking into account environmental procedures.



- 1). At the C class there can be works contracts which - due to its parameters - do not require obtaining the environmental decision, do not belong to the Group II.
- 2). In the Decision on environmental conditions the body conducting the proceedings require re-conduct the EIA proceedings prior to issuing the decision authorizing the implementation of the project on the grounds of the Environmental Impact Report prepared on the basis of the construction project taking into consideration the environmental conditions included in the Environmental Decision.
- 3). AAB Body - Administration, architectural and construction body (Mayor of town or city, district, province) confirming the construction project and issuing the Decision on construction permit or decision authorizing the accomplishment of the works contract.

3.4. RELEVANT WORLD BANK POLICY

This Project is co-financed from the International Bank for Reconstruction and Development (World Bank) and the environmental component of this Project shall be in compliance with the following policies:

- Operational Policy OP 4.01 Environmental Assessment;
- OP 4.04 Natural Habitats,
- OP 4.12 Involuntary Resettlement and
- OP/BP 4.11 Physical Cultural Resources.

3.5. ACTUAL STATUS OF EIA PROCEDURE FOR CONTRACT

Environmental Impact Assessment (EIA) for this Works Contract B3-1 was carried out as part of activities relating to modernization of Wroclaw Floodway System namely *"Construction of flood protection objects/facilities for City of Wroclaw as part of activities related to Modernization of Wroclaw Floodway System for flood relief through the Widawa Transfer as well as embankments located in the Widawa River valley together with bridges"* (3/3).

Abridged EIA procedure was carried out according to the following steps:

1. The Engineer on 11.05.2010, acting on behalf of and for the Lower Silesia Board of Amelioration and Water Structures in Wroclaw, applied to the Regional Director for Environmental Protection in Wroclaw. The Regional Director is the competent authority for the issue of environmental decision. The Engineer attached also the Information Data Sheet (IDS).
2. After supplementing the documentation by the Engineer, RDOS through a letter of 27 August 2010, ref. no.: RDOS-02-WOOS-6613-1/44-5/10/lck addressed the State District Sanitary Inspectors and Military Sanitary Inspector (letter ref. no.: RDOS-02-WOOS-6613-1/44-4/10/lck), asking for an opinion as to the obligation to carry out environmental impact assessment and, and if deemed necessary, to determine the scope of the report on the impact of the project on the environment (*the project has been classified as group II project*). The project will be implemented within the city of Wroclaw and Trzebnica region, in an area where the local jurisdiction has more than one state district sanitary inspector, such as: State District Sanitary Inspector in Wroclaw and State District Sanitary Inspector in Trzebnica.
3. By the notice of 27 August 2010, the Regional Director for Environmental Protection in Wroclaw informed all parties on:

- the commencement of administrative proceedings concerning an environmental decision,
 - the authority competent for issuing this decision,
 - the competent bodies to issue an opinion on the need to assess the environmental impact and opinions before an environmental decision,
 - the rights to participate actively in every stage of the proceedings, under Art. 10 of the Administrative Proceedings Code.
4. In the course of the investigation, the Authority received opinions of:
- Voivodeship District Sanitary Inspector in Wroclaw of 31 August 2010, demanding the need to carry out the environmental impact assessment
 - From others State District Sanitary Inspectors in Wroclaw and Trzebnica, did not provide their opinions. Hence RDOS considered that the authorities did not object.
5. Regional Director of the Environmental Protection Wroclaw after careful examination of the collected documentation, considered that the proposed project may have significant negative effects on the environment and therefore there is a need to carry out the environmental impact assessment,
6. RDOS through the decision of 20 September 2010, ref. no. ROS-02-WOOS-6613-1/44-9/10/lck, imposed the obligation to carry out the environmental impact assessment and defined the scope of the EIA report,
7. During the ongoing procedure, the Regional Director for Environmental Protection in Wroclaw, at the request of the Foundation "WWF Poland - World Wide Fund for Nature"; through the decision of 22 September 2010 ref. no. RDOS-02-WOOS-6613-1/44-10/10/lck allowed the organization to participate as a party,
8. On 31 January 2011, the Engineer submitted the EIA Report (ROOS) to RDOS,
9. After supplementing the EIA Report by the Engineer, RDOS by a notice dated 17 June 2011 made public the information about the present project, i.e.:
- entering the procedure of environmental impact assessment,
 - commencement of the procedure,
 - subject of the decision which is to be given in this case,
 - the authority competent to issue the decision, and the bodies competent to issue opinions,
 - an opportunity to scrutinize the case and the documentation and of the place where it is open for inspection,
 - a possibility to submit comments and proposals,
 - how and where to submit comments and proposals, indicating the 21-day deadline for their submission,

- the competent authority to consider comments and proposals.
10. RDOS has requested opinions of the State Sanitary Inspectors before issuing the decision. Required opinions were issued by:
 - the State District Sanitary Inspector in Wrocław - issued positive opinion of 4 August 2011. This opinion was issued after the deadline set by the RDOS.
 - the State District Sanitary Inspector in Trzebnica did not give his opinion.
 11. RDOS applied for an opinion prior to issuing the decision to the Commandant of the Military Medical Centre (KWOM). KWOM expressed a positive opinion on implementation of the project (the opinion dated 22.06.2011).
 12. In the course of the proceedings, 4 motions were submitted: Mayor of the village of Paniowice, "My Paniowce" - Association for the Development of Paniowice, Mayor of the village of Kotowice, Mayor of the Municipality of Oborniki Śląskie. The applicant (the Lower Silesia Board of Amelioration and Water Structures in Wrocław) responded to the submitted motions and remarks supplementing the Environmental Impact Report and organized a meeting with inhabitants of the villages of Paniowice and Kotowice.
 13. The Regional Director of the Environmental Protection Wrocław through a notice of 30 December 2011 informed the society about having collected all the material evidence necessary to issue a decision on the environmental conditions for this project. The society were informed of the opportunity to become acquainted with all the material gathered in this matter and the possibility to make comments and conclusions as to the collected evidence. Before issuing this decision on the environmental conditions, none of the 4 motion authors as specified in point 12 above filed any comments or requests in the procedure.
 14. On 31 January 2012 RDOS issued the Environmental Decision (ref. no.: WOOS.4233.1.2011.LCK) for this Works Contract. Information about issuing the decision was announced through a notice.
 15. On 23.02.2012 "My Paniowce" - Association for the Development of Paniowice brought an appeal against the above-specified Decision to the General Director of Environmental Protection.
 16. The General Director of Environmental Protection, after examining the EIA procedure, issued a resolution on 17.04.2012 stating a lapse of the term to submit an appeal from the above-specified environmental decision. The resolution issued by the General Director of Environmental Protection is final, thus the decision has become final.

4. BASELINE CONDITIONS ASSESSED DURING ALIGNMENT SURVEY

4.1. SOILS AND GEOLOGICAL CONDITIONS

At the analyzed area located north off the city of Wrocław there are soils made of unevenly-aged alluvial forms (river accumulation) classified to be alluvial river mud. These soils occur in the form of dusty clays and clayey sands underlain with coarse sand. Medium and heavy alluvial soils consisting over 20% of float-able particles dominate here. At their soil profile there are variously-thick layers with different color and granulometric composition corresponding to subsequent raised waters which - while flooding the valley bottoms - deposited carried suspensions at them. Alluvial river mud within the above area has got their diverse composition of humus (1 - 8%).

At the area of the projected Works Contract the ground base is made of sediments derived from quaternary Holocene and Pleistocene layers. In the course of the glaciation period the present-day valley of the Odra River together with its over-floodplain terraces got eventually formed. The Holocene complex is made of sand- and gravel-based floodplain terraces sediments. Medium and coarse sands with admixtures of organic particles dominate here (occasionally layered with silt, fine or clayey sands). Minor hollows or patches of dusty clays can be found here subordinately. Their largest spread occurs at places where at the surface rests a layer of dusty, alluvial mud-based clays with its thickness of around 0.5 m. The thickness of Holocene layers within the area is equal to 4.6 up to 5.6 m. Pleistocene is represented by sandy sediments, river or glaciofluvial facies as well as morainic clays of the Central Polish glaciation. Medium and coarse sands (always with an admixture of gravel) prevail at sand layers. Occasionally, fine sands occur at deeper levels. Moraine-based sediments form a unified complex of ground moraine shaped in the form of sandy clays (often concise clays with additives of gravel). The deeper ground base is made of Tertiary forms represented by a series of clayey - sandy sediments (limnic or marshy) lying in the valley of the Odra River at the depth of several up to over 100 m.

4.2. SURFACE WATERS

Widawa is a right-hand tributary of the Odra River. The length of the river is equal to 103.2 km and its area - 1716 km². It flows out at the level of around 200 m above sea level within the area of the Twardogorskie Hills at Droltowice close to Miedzybórz. It flows into the Odra River at the level of around 100 m above sea level. Along the entire length of the river, the river-bed bottom is padded with alluvial deposits at clays which - at minor declines - causes swamping. At recent years there has been diagnostic monitoring conducted at 2 measurement and control points conducted at the basin of the river. In addition, the outlets of

the Olesnica and Dobra Rivers have been monitored. At the Widawa River there is a change of water quality along its course. Third (III)¹ class of water quality has been recorded at one point below Bierutow and fourth (IV) class - at the outlet. The change in classification has been forced by increased levels of the following indicators: phosphate (fifth (V) class), color, lead, mercury and a number of faecal coli-forms. The change in classification has been influenced by both its tributaries, especially the Dobra River as well as the infiltration of water from irrigated fields at Osobowice in Wroclaw. In addition, average annual values which characterize the process of eutrophication have been exceeded, at the profile below Bierutow - for nitrates and at the outlet to the Odra River - for nitrates and general phosphorus. In 2004, only concentrations of general nitrogen and nitrates increased significantly. The bacteriological state has been under improvement.

4.3. UNDERGROUND WATERS

At the section of the Odra River at km 231+700 to km 249+000 (the section within which the analyzed structures of works contract are located) there is Quaternary aquifer which is formed by fluvio-glacial and river sediments, with very good permeability, with their thickness ranging from 5.0 to 10.0 m, even to 30.0 m at some places. These are composed of sands, clayey sand-mix gravels and gravels which are characterized by a high filtration ratio (from 10.0 up to 60 m / 24 hours). Locally there are also compositions with medium permeability - silt sands, clay sands, sandy dusts and dusts. The surface of water with its free character is located at the depth of 0.7-5.0 m above terrain level. Supply of underground waters goes through infiltration of precipitation and inflow of underground waters from high lands. The Odra River provides the grounds of drainage of the Quaternary aquifer. The Quaternary aquifer within the forms of the Odra pro-glacial valley and its current valley is a continuous aquifer within which the Main Reservoir of Underground Waters no. 320 was designated.

In the embankment base there is only one aquifer which was drilled locally in non-coherent forms - gravels, sandy gravels, coarse and medium sands. It appears in the middle of the embankment, below its direct impermeable (for most of the length) base. The surface of water with is of free character. Only locally the surface of water is a little under pressure confined by clays, clay sands and aggregate clays located at a depth of 2m from the ground surface.

¹ Water quality classes are described in Regulation of the Ministry of the Environment dated 9th November 2011 on the classification of the status of surface waters and environmental quality standards for priority substances

4.4. METEOROLOGICAL CONDITIONS

The area covered by the planned Works Contract is located on the terrain above the city of Wrocław and its adjacent terrain along the valley of the Odra River. The climate in the region is marked by the characteristics typical to intermediate climate of temperate latitudes. Mixing oceanic and continental air masses cause great climate variability, characterized by frequent changes of weather conditions. Moreover, there occur climatic phenomena such as urban heat and precipitation islands as well as bioclimatic diversification, typical for large urban and industrial agglomerations. These generate from physical alterations resulting from the manner of management and use of urban lands.

Temperature. The average annual air temperature in Wrocław is 9.0 °C. The average monthly temperature of the coldest month (January) is - 4.0°C, the warmest month (July) - 18.8°C. The growing season lasts 226 days on the average and it is among the longest in Poland.

Atmospheric precipitation. Wrocław is characterized by low atmospheric precipitation. Atmospheric precipitation occurs on 167 days a year, while its average annual precipitation of the period of 1901-2000 is 583 mm. Similar levels of average long-term precipitation have also been recorded in the vicinity of Wrocław (Jelcz-Laskowice 568 mm, Olawa 594 mm).

4.5. AIR QUALITY

On the grounds of the air quality measurements conducted within the territory of Wrocław in 2008, the following was found:

- low level of air pollution with sulphur dioxide, carbon monoxide, benzene and heavy metals (lead, arsenic, cadmium, nickel),
- exceeded average annual standards of nitrogen dioxide - within the area of the cross-roads of Powstancow Slaskich Street, Wisniowa Alley and Hallera Street,
- high levels of dust the air - occurrence of abnormally high average daily values of suspended dust (PM10) throughout the year, with an increased frequency of recorded exceeded values in the heating season,
- high levels of benzo(a)pyrene which is used as a marker of carcinogenic risk related to the presence of polycyclic aromatic hydrocarbons in the air.

While within the municipality of Siechnice, measurements of concentrations of sulphur dioxide and nitrogen dioxide in the period of 2003-2007 showed a low level of air pollution with sulphur dioxide and no exceeded average annual standards of nitrogen dioxide. The maximum average annual concentration occurred in 2006, characterized by very low temperatures in winter (below the standard, based on the long-term period). Average

concentration of SO₂ occurred at low levels, and in 2007 it oscillated between the values of 4.3 µg/m³ to 9.1 µg/m³.

The classification of zones performed in 2008 classifies the Sredzko-Wroclawska Zone with the district of Wroclaw to class A, a zone not requiring corrective actions and preparation of air quality protection program.

4.6. ACOUSTIC CLIMATE

All the works related to the modernization of the Wroclaw Floodway System (WFS) will go through very diversified areas in terms of the level of noise. Mostly they will be terrains which are remote from any built-up areas at which the level of noise is made mainly by traffic sounds coming from road networks as well as natural sounds originating from rustling of plants, animal sounds and accidental noises made by human operation.

The most burdensome scale of **communication noise** within the area of the Wroclaw Floodway System is related to Wroclaw and - in particular - with main through-routes as well as with main communication routes burden with traffic at the most. There are 3 national roads (no. 8, 5 and 94), 15 provincial roads and a dense network of municipal (local) roads running through the city. Intensive transit traffic running through Wroclaw also goes by the following municipalities (communities): Siechnice (the national road no. 94), Dlugoleka (the national road no. 8), Czernica (the provincial road no. 455), Wisznia Mala (the national road no. 5) and Oborniki Slaskie (the provincial road no. 342). All the above-specified communication (traffic) routes as well as the provincial (the provincial road no. 320 and 336), district and municipal (local) roads running in the proximity of the Wroclaw Floodway System have an impact on the level of noise within the areas of the planned investments.

The acoustic climate is also influenced by **railway traffic**. The main railway junction is located in Wroclaw from which railway lines spread out in all directions, including through the area of the Wroclaw and Trzebnica districts. The busiest routes running in the vicinity of the Wroclaw Floodway System are as follows: Wroclaw - Olawa (through the municipality of Siechnice), Wroclaw - Olesnica (through the municipality of Dlugoleka), Wroclaw - Poznan through the municipality of Oborniki Slaskie), Wroclaw - Glogow.

Noise generated by **industrial plants** is of local range concerning inhabitants living nearby, then a relatively minor group of people. But this is a significant problem for people directly exposed to this type of impact, especially at night.

Summing up, all the works related to the construction and modernization of the embankments at the area of the planned works contract will go through diversified areas in terms of the level of noise. Mostly these are regions which are remote from any built-up areas at which the level of noise is made mainly by traffic sounds coming from road network

as well as natural sounds originating from plant rustling, animal sounds and accidental noises made by people.

4.7. NATURAL CONDITIONS (FLORA AND FAUNA)

The planned works within the B3-1 contract are partially located at the protected area - SAC "Grady w Dolinie Odry" (PLH020017) and at a distance of over 250 m from the boundaries of the protected area - SPA "Grady Odrzańskie" (PLB020002). The location of the structures in respect to the protected areas is presented in the table 4-1.

Table 4-1: Location of the WFS structures in respect to the protected areas

No.	Natura 2000 area	Location of project
1	SAC "Grady w Dolinie Odry" (PLH020017)	<p>Structures: The WFS structures no. 40 and 45.4 are located at the north-western side, partially within the protected area.</p> <p>The other WFS structures are located outside of the boundaries of the Natura 2000 areas:</p> <ul style="list-style-type: none"> • the WFS structure no. 44.11 - at the north and northern east off the protected area at a distance of over 450 m and the WFS structure no. 44.1 - at a distance of over 600 m, • the other WFS structures are located at a distance of over 0.9 km.
2	SPA "Grady Odrzańskie" (PLB020002)	<p>All the WFS structures are located outside the boundaries of the Natura 2000 areas:</p> <ul style="list-style-type: none"> • the WFS structures no. 40 and 45.5 at a distance of over 250 m at the southern east, • the other WFS structures are located at a distance of over 0.8 km.

The detailed description of the structures together with their location, specification and determination of their significance is provided in the Appendix no. 6. Maps with graphic presentation of the location of particular natural objects at their corresponding mileage of the embankments are provided below.

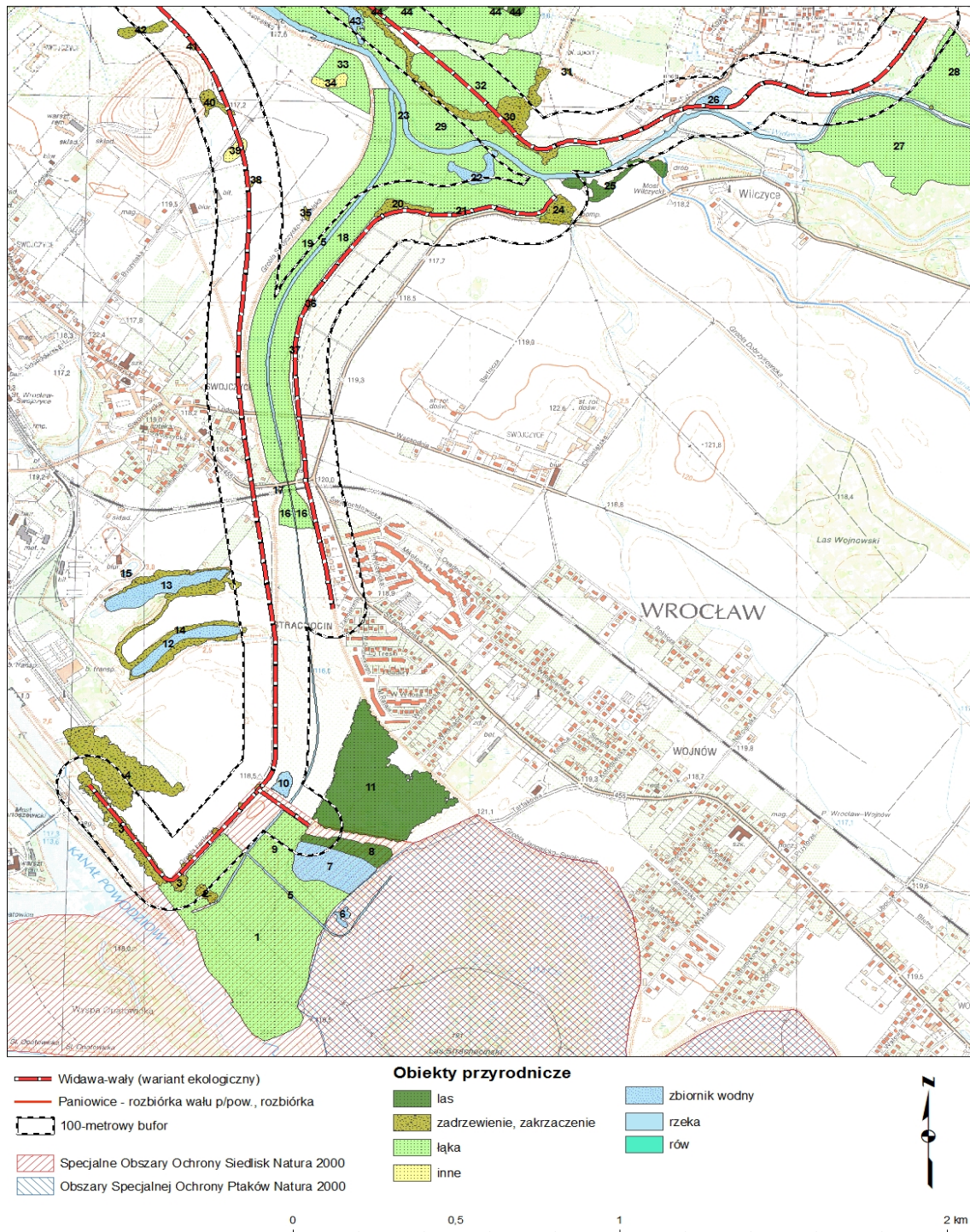


Fig. 4-1. Inlet to the Channel and Odra-Widawa Channel.

Legend on the map:

Las – forest

Zadrzewienie, zakrzaczenie -

Trees, shrubs

Zadrzewienia - trees

Łąka - meadow

Inne - others

Zbiornik Wodny – water tank

Rzeka – river

Rów - ditch

Widawa wały (variant ekologiczny)- Widawa embankments (ecological variant)

100-metrowy bufor - 100 meters buffer

Paniowice – rozbiórka – Paniowice - demolition

Specjalny Obszar Ochrony Siedlisk Natura 2000 - Special Area for Habitat Protection Natura 2000 network

Obszar Specjalnej Ochrony Ptaków Natura 2000 - Bird Special Protection Area Natura 2000 network

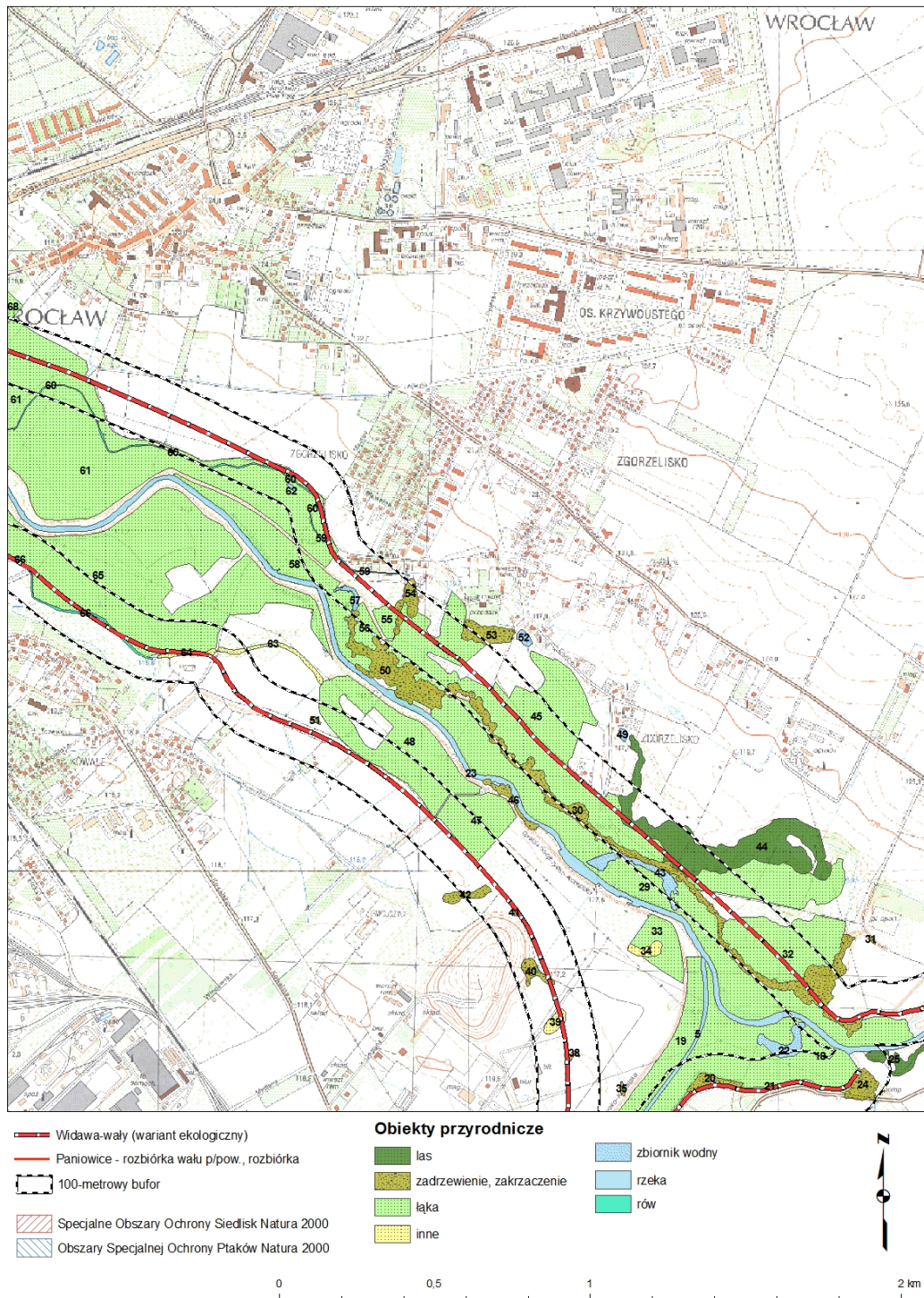


Fig. 4-2. Junction of the channel with the Widawa River and Widawa valley.

Legend on the map:

Las – forest

Zadrzewienie, zakrzaczenie -
Trees, shrubs

Zadrzewienia - trees

Laka - meadow

Inne - others

Zbiornik Wodny – water tank

Rzeka – river

Row - ditch

Widawa waly (variant ekologiczny)- Widawa embankments
(ecological variant)

100-metrowy bufor - 100 meters buffer

Paniowice – rozbiórka – Paniowice - demolition

Specjalny Obszar Ochrony Siedlisk Natura 2000 - Special Area for
Habitat Protection Natura 2000 network

Obszar Specjalnej Ochrony Ptaków Natura 2000 - Bird Special
Protection Area Natura 2000 network

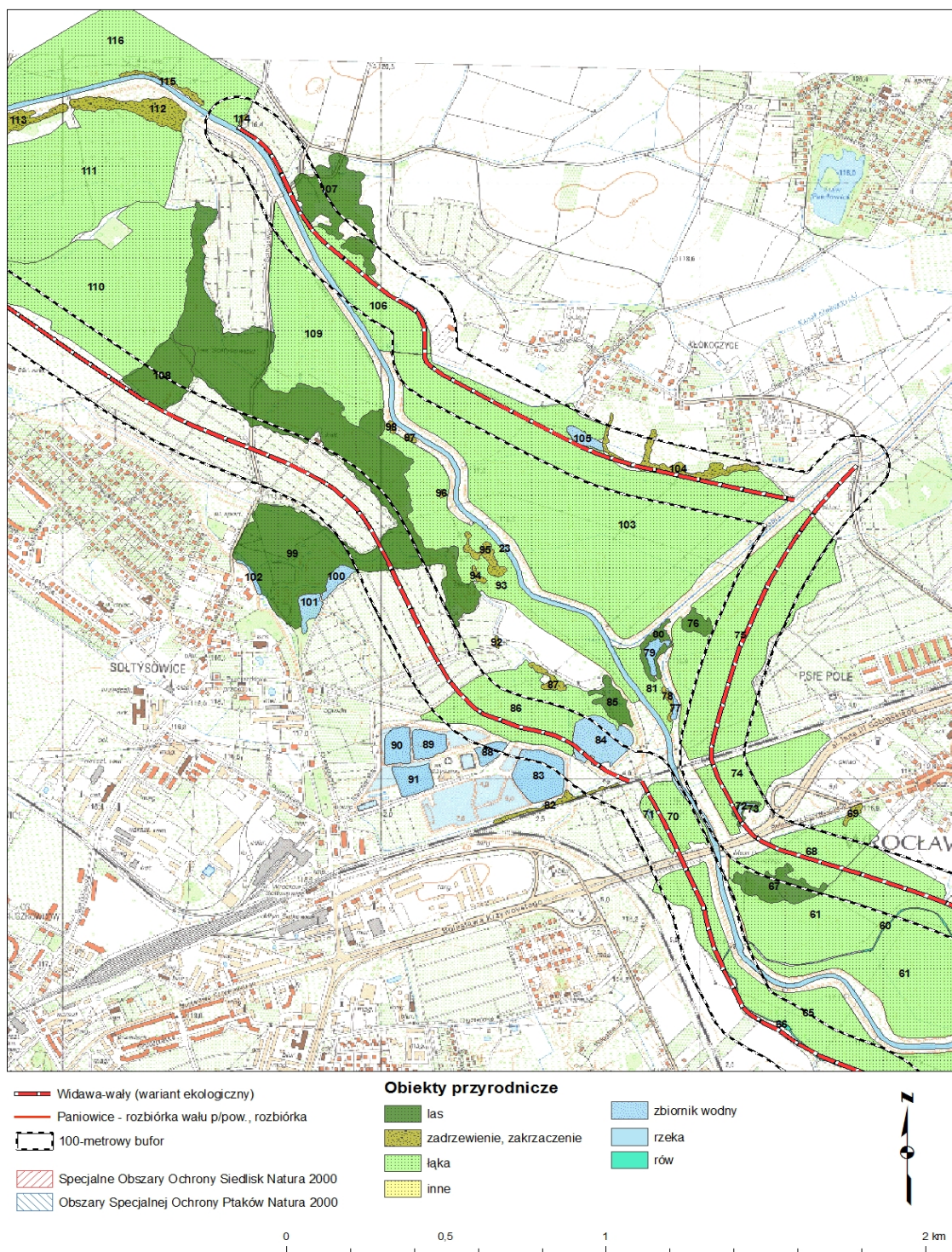


Fig. 4-3. Widawa valley, area of the road bridge along Krzywoustego Street.

Legend on the map:

Las – forest

Zadrzewienie, zakrzaczenie -

Trees, shrubs

Zadrzewienia - trees

Łąka - meadow

Inne - others

Zbiornik Wodny – water tank

Rzeka – river

Row - ditch

Widawa wały (wariant ekologiczny)- Widawa embankments (ecological variant)

100-metrowy bufor - 100 meters buffer

Paniowice – rozbiórka – Paniowice - demolition

Specjalny Obszar Ochrony Siedlisk Natura 2000 - Special Area for Habitat Protection Natura 2000 network

Obszar Specjalnej Ochrony Ptaków Natura 2000 - Bird Special Protection Area Natura 2000 network

4.7.1. Natura 2000 Areas

SPA Special Protection Area, "Grady w Dolinie Odry", PHL020017

The Natura 2000 site called "Grady w Dolinie Odry" (code: PLH020017, residence type: K) is the SPA Special Protection Area with its area of 7673.65 ha. It is located in the valley of the Odra River at the section from the borders of the Province up to the water-bearing areas of the city of Wrocław.

It is planned Special Protection Area within Natura 2000 network. The area was accepted by European Union's decision i.e. Commission Implementing Decision of 10 January 2011 (in the matter of establishment by virtue of the Directive of the Council 92/43/EEG) a fourth updated list of sites of Community importance for the Continental biogeographical region (notified under document C(2010) 9669).

The Natura 2000 site "Grady w Dolinie Odry" area covers several forest complexes in the valley of the Odra River between Wrocław and Olawa. The area also includes parts of the river valley. This is the land with a wide diversity of habitats - from dry grasslands and parts of wild-woods at sandy dunes up to aquatic vegetation and reed beds of oxbow lakes and ponds. A large part of riverine phytocoenoses is transformed as a result of being cut off from floods upon embankment of the Odra River bed, however, they are flooded at large floods. Mid-forest glades are characterized by rich flora, and their most valuable parts were preserved in the water-bearing areas of Wrocław.

At the area there is one of the largest forest complexes (hornbeam forests and riverine forests) in the valley of the Odra River, together with meadow areas, characterized by a wide variety of wetland habitats. There is rich meadow flora here, as well as water and marsh vegetation among others - one of the best preserved positions of Water caltrop *Trapa natans* in the valley of the Odra River.

At the area there are 11 kinds of habitats listed in Annex I of the Regulation of the Ministry of Environment of 16 May 2005 on types of natural habitats and species of plants and animals requiring protection in the form of designation of the Natura 2000 sites (Journal of Laws No. 94, item 795):

- 2330 inland dunes with open *Corynephorus* and *Agrostis* grasslands (0.03% of the surface of Natura 2000 site),
- 3150 natural eutrophic lakes with Magnopotamion or Hydrocharitiontype vegetation (2.71% of the surface of Natura 2000 site),
- 6120 xeric sand calcareous grasslands (*Koelerion glaucae*) (0.23% of the surface of Natura 2000 site),
- 6410 molinia meadows on calcareous, peaty or clayey-silt-laden soils (*Molinion*) (4.27% of the surface of Natura 2000 site),

- 6430 hydrophilous tall herb fringe communities of plains and of the montane to alpine levels (*Adenostylion alliariae*, *Convolvuletalia sepium*) (0.21% of the surface of Natura 2000 site),
- 6440 alluvial meadows of river valleys of the *Cnidion dubii* (*Cnidion dubii*) (0.87% of the surface of Natura 2000 site),
- 6510 low-land and mountain fresh meadows used extensively (*Arrhenatherion elatioris*) (6.64% of the surface of Natura 2000 site),
- 7230 alkaline fens (2.00% of the surface of Natura 2000 Site)
- 9170 oak-hornbeam forests (*Galio-Carpinetum*, *Tilio-Carpinetum*) (0.50% of the surface of Natura 2000 site),
- 91E0 alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Salicetum albo-fragilis*, *Populetum albae*, *Alnenion*) (1.80% of the surface of Natura 2000 site),
- 91F0 riparian mixed forests of *Quercus robur*, *Ulmus laevis* and *Ulmus minor*, *Fraxinus excelsior* or *Fraxinus angustifolia*, along the great rivers (*Ficario-Ulmetum*) (26.63% of the surface coverage of Natura 2000 site).

SPA Special Protection Area, "Grady Odrzanskie", PLB020002

The Natura 2000 site called "Grady Odrzanskie" (code: PLB020002, residence type: J) is the SPA Special Protection Area with its area of 19999.28 hectares.

It is Special Area of Conservation within Natura 2000 network mentioned in Regulation of the Ministry of the Environment of 12 January 2011 on area of birds special protection (Journal of Laws of 4 February 2011, No. 25, Item 133).

This area is located in the valley of the Odra River, covering its 70 kilometer-long section between Narok and Wroclaw. The valley is covered with forests, meadows, pastures and farmland. The forests consist mainly of oak-hornbeam stands; however, small patches of ash-elm and willow-poplar woodlands are preserved as well. There are numerous watercourses, old riverbeds, residues of swamps and ponds. The area is heavily drained.

Within the "Grady Odrzanskie" site there are 22 species of birds listed in Annex I of the Council Directive 79/409/EEC of 2 April 1979 *on protection of wild birds* and 11 species of migratory birds not listed in Annex I, 1 species of fish listed in Annex II of the Council Directive 92/43/EEC.

In the breeding period, the site is populated by at least 1% of the domestic population (C3 and C6) of the following species of birds: Grey-headed Woodpecker, Black Kite (PCK), Collared Flycatcher, Grey Heron; of a relatively high density: White Stork, Black Stork, Red Kite (PCK), European Honey Buzzard, White-tailed Eagle (PCK), Little Ringed Plover, Great Grey Shrike and Middle Spotted Woodpecker (C7).

The Works Contract B3-1 does not require the EU endorsement according to the legal authority's opinion (RDOS) - see Environmental Decision (31st January 2012), attached as Appendix no. 4.

4.8. POPULATION

The Contract B3-1 is a linear investment which in its course is located partially on valuable areas in environmental terms and partly in the vicinity of small human settlements. However, taking into account the whole project and its influence, it affects the protection of the area where more than 600 000 inhabitants live.

The planned investment crosses the plots of private entities, agricultural lands, Natura 2000 sites and others. In social awareness, there exists the knowledge that the embankments are situated in this area and that this project serves public interest. As already noted, the social issues have been dealt with separately, through the Resettlement Action Plan (RAP).

4.9. CULTURAL MONUMENTS

Most of the works related to the construction and modernization of the embankment are located at the non-urban areas or areas with low density of development. Such manner of management of the land results from specific area conditions which are strictly related to direct impacts of the Odra River and the Olawa River, forming both the topographic profile and ground and water relations. These difficult conditions, having an impact onto the layout and character of settlements of the area, were the reason for scarcity of monument objects under legal protection in the immediate vicinity of the modernized objects and within minor towns and villages.

The works contract is located north of the city of Wrocław and covers green areas (forests, natural meadows, marshes, agricultural areas), for which there are various types of infrastructure facilities such as energy lines, elements of underground facilities etc. Investment area and its relation to known historical monuments is presented below, in table 4-3.

Table. 4-3. Immovable monuments covered by legal protection and entered in the register of monuments in the area of the planned investment

Locality	Commune	Monument	Distance from the monument to closest WFS structure [m]	Monuments Register
WROCLAW	Wrocław	The Parish Church of St. Jack, former evangelic church, 20 Miłoszycka Street	1500	242/132 dated 15.02.62
WROCLAW	Wrocław	The Parish Church of St. James and Christopher, 291 Krzywoustego Street	800	296/199 dated 30.12.70
WROCLAW	Wrocław	The Parish Church of St. Anne, 8 Zdunska Street	1500	1818 dated 22.08.66
WROCLAW	Wrocław	The hospital and monastery complex, 8	1200	451/Wm dated

Locality	Commune	Monument	Distance from the monument to closest WFS structure [m]	Monuments Register
		Poswiecka Street, 20 Lekarska Street: <ul style="list-style-type: none"> - Children's Rehabilitation Hospital Complex - Church of the Hospitaller Knights (Bonifratrzy) under the invocation of the Holy Family - Garage, former coach-house - Hospital buildings complex - Park and access path 		24.06.91
WROCLAW	Wroclaw	Monastery complex of the Franciscan Fathers (Franciszkanie), 26, 28, 28a Kasprowicza Street: <ul style="list-style-type: none"> - The monastery and parish church of St. Anthony - Monastery 	more than 2000	238/472/Wm dated 10.03.92
WROCLAW	Wroclaw	Monastery of the Ursuline Sisters (Urszulanki), currently Franciscan Sisters (Franciszkanki) as well as Hospital for Sick Children with a park, 62b, 64-66 Kasprowicza Street	more than 2000	478/Wm dated 16.06.92
WROCLAW	Wroclaw	Sepolno, housing estates within the following streets: 9-go Maja, Mickiewicza, Monte Cassino and Dembowskiego	more than 2000	679/399/Wm dated 9.02.79

4.10. LAND SURFACE AND LANDSCAPE

The existing embankments are located at parcels owned by the State Treasury which currently remain in the possession of the Lower Silesia Board of Amelioration and Water Structures in Wroclaw.

The works related to the realization of new embankments go beyond the area administered by the Lower Silesia Board of Amelioration and Water Structures and cover lands owned by private individuals and legal entities.

New areas used for the implementation of the above-mentioned investments cover forests, natural meadows, wetlands, agricultural lands, interfere with anthropogenically transformed areas (infrastructure structures such as roads, power lines and other underground infrastructure items). The current manner of using these areas is consistent with their classification. Finally, as a result of the implementation of the investment some of these grounds will require changes in their classification.

5. SUMMARY OF ENVIRONMENTAL IMPACTS ASSESMENT

5.1. IMPACT ON SOIL

Implementation phase

Preparatory works consisting in the following activities are projected in the technology of the works:

- geodetic field elevation measurements and stabilization of all the structural elements of the project which are relevant for its implementation,
- removal of trees and shrubs in accordance with dendrological report, clearing tree logs and transport of wood and tree trunks to the place indicated by the Investor,
- demolition works,
- development and strengthening of the existing access roads,
- removing humus and piling it along the sections projected for construction of the embankment and in places of its incorporation,
- preparation of the construction site.

Prior to commencement of the earth works, it is necessary to take off a layer of fertile soil and to store it beyond the boundary of the works for further use in land management. Removing humus is assumed to take place in all places where it would otherwise be destroyed or buried (back filled).

The predominant part of the route of the planned embankments goes at the path of the existing embankments, the area already anthropogenically changed; thus there will be no interference with natural grounds. At the reconstruction of the existing objects they will be subject to extra compaction and local sealing by means of bento-matting only.

At the time of construction of the embankment body, a lane for transport and assembly works area as well as earth works area with its width up to 50 m at a maximum will be occupied. However, the lane for assembly and construction works area will be much narrower, at numerous naturally valuable sections even only and exclusively up to the embankment base. Earth works conducted in the course of construction of the new embankments will cause interference with shallow layers of ground surface up to 0.5 m above terrain level. Humus as well as soil taken from excavations will be stored at places designated for that purpose, while humus will be stored in piles separately, so as not to be mixed with indigenous rock.

Humus and soil from excavations will be used in construction of the embankments if they have got appropriate geo-technical parameters, or they will be transported and used in another place.

In order to maximize the protection of organic substances in the ground (protection against humidity changes, radical temperature changes or weathering - which secure valuable micro-

organisms and soil structures) - humus layers should be gathered in piles. Removing and storing humus layers at the areas of valuable habitats should be made with particular care and attention.

Distortions of the structure of soils will also follow as a result of mechanical compaction of soils, at the lane of transport and assembly area caused by moving around of heavy mechanical equipment (cars, bulldozers etc.) and as a result of storing equipment and materials (mainly ground). Heavy compaction of deeper ground layers in some places (below arable layers) can be the reason for some deterioration of soil structure and at the same time degradation of its biological activity. Distortions of the structure of soils which occur during the construction in connection to mechanical or manual soil compaction and through possible storage of equipment and materials can contribute to its degradation to a small extent.

At the transport and assembly area some soil contamination with oil substances (spillages of fuel from the engine) can occur. Potential soil contamination with oil substances should be eliminated immediately through removing contaminated layers of soil and transportation outside the construction site for disposal. Neither repairs of mechanic equipment nor fuel filling should be made at the area of the construction of the embankment. Wastes should be collected at designated places only.

Changes of the structure of humus soil layers are easy to reclaim at agricultural areas thanks to horticultural treatments. Irreversible changes of the level of humus will take place at the line of the land occupied by rocky material (ground parent rock) coming from trenches. The change of the composition of humus will follow there as a result of the increase of contents of rock material from the ground, which will decrease the biological activity of soil and as a result will lead to local periodic drops of productivity of soils within the area.

Operational phase

At the operational phase no negative impact onto the ground environment is projected. Grounds located at the outer embankment will be secured against floods, so at the area rational farming can be conducted.

5.2. IMPACT ONTO AIR QUALITY

Implementation phase

At the duration of construction and assembly works atmospheric pollution will occur - it will be caused by non-organized emission, related mainly to the operation of assembly machinery and means of transport powered by internal combustion engines emitting gaseous pollutants as well as by earth works (transport, storage and incorporation of grounds). The operation of assembly equipment and means of transport as well as power generators powered by internal combustion engines will cause emissions of carbon monoxide, nitrogen oxides,

sulphur oxides, aldehydes and hydrocarbon mixtures. They will be local and periodic in their character. After completion of the construction they shall cease entirely.

In the course of the construction, emissions of pollutants in the form of dusts will be related to the movement of grounds - both during loading and re-loading of grounds and their incorporation. They will be local and periodic in their character. After completion of the construction it will be completely ceased.

During the construction the investment supervisor as well as direct contractor(s) of the works should ensure to minimize pollution of ambient air through proper organization of the construction site, selection of appropriate equipment and vehicles as well as their adequate operation.

Operational phase

The embankments will be regularly mowed during the operation of the investment (twice a year). Organized emissions to the air will not occur in the course of these activities. Potential non-organized emissions will occur during the operation of internal combustion mowers, however they will be limited in terms of area and time, not being subject to any norms or standards included in the legal regulations.

5.3. ACOUSTIC CLIMATE

Implementation phase

Noise emissions at their significant (high) level may occur during the construction only. At this stage, the impact will be conditioned mainly on the intensity of conducted earth works. Ground works are the basic works to be performed in case of construction and development of the flood protection embankments.

At the implementation of the investment, the most significant sources of noise include:

- works related to the preparation of the construction site (e.g. development of temporary access roads storage sites, equipment bases, etc.),
- works related to the disposal of medium and high vegetation (most often in relation to self-seeding plants),
- earth works related to the removal of ground layers at the site which will be occupied by the flood protection embankments, with the use of e.g. caterpillar bulldozers, wheeled loaders or excavators, heavy goods vehicles,
- works related to the temporary storage and formation of ground piles at selected locations,
- works related to the formation of the flood protection embankments including fertilization of raw materials, arranging of geo-synthetic layers compaction, etc.,

- works related to the provision of embankment supports (e.g. through construction of retaining walls made of reinforced concrete),
- works related to the placement of hardened surfaces (e.g. biking paths), they can be connected with - for example - the operation of equipment for cutting concrete cubes,
- works related to the demolition of the existing infrastructure which will involve the usage of pneumatic equipment for the demolition of concrete elements,
- works related to concreting (e.g. culverts, stairs, etc.) connected with the operation of pumps for concrete, vehicles delivering concrete,
- transportation of materials using heavy goods vehicles.

The performed calculations for selected calculation situations allow concluding that the scope of occurrence of noise with the acceptable level for residential buildings and other structures protected against noise will be variable and will vary from tens to hundreds of meters depending on the type of the conducted works. The acoustic impact of construction works will have short-term effects lasting mostly for several days depending on particular locations of the works conducted.

Since construction works are not planned to be conducted at night, acoustic effects from 10:00 pm - 6:00 am will not occur at all.

Operational phase

The Works Contract operation does not cause any deterioration of the acoustic climate in the surrounding environment (without conducting periodic works on maintaining good technical state of the embankments, e.g. mowing considered). Mowers do not generate noise exceeding standard values.

In case of the bridges, the application of "quiet" surfaces will lead to the reduction of the level of noise.

5.4. WILDLIFE

At the valorization of the natural environment and the project of threats caused by the planned Works Contract onto the fauna and flora, both direct area mapping as well as existing archived materials and available publications were used. The method of "further steps" derived among others from the above literature was used in the valorization proceedings of particular environmental elements, which is required for projecting the potential impact:

- Identification of valuable (including protected) objects and natural sites on the basis of

in-house works and existing research and planning materials;

- Field inspections to perform the verification and inventory of the quantity and coverage of selected objects and areas as well as specific natural-landscape characteristics.
- Assessment of the scope of preservation and conversion of individual components natural environment, i.e. assessment of the scope of compatibility or incompatibility with natural character of the environment (valuation);
- Projecting the risk for particular fragments of land and natural components / elements within the investment as well as its immediate vicinity is conditioned by the value of previously inventoried environmental features.

The assessment of the relevance of the impact onto fauna and flora, Natura 2000 site was conducted in line with the concept as set out in the following document: *Reference Guide - Determining Whether A Project is Likely to Cause Significant Adverse Environmental Effects** Canadian Environmental Assessment Agency (1994).

5.4.1. Protected natural habitats and protected species of plants, fungi and animals

The list of natural habitats and the protected plants located in area of building works is presented in App. 7.

In this Appendix described is also the location of the natural habitats' and protected species' resources as well as their number and potential loss in the impact area of works contract. The scale of impacts is indicated in Tables 6.1 and 6.2. In these tables described are the mitigation measures of negative impacts.

5.4.2. Impact onto the habitats and protected species and the Natura 2000 areas

Implementation phase

The conducted analysis showed that the implementation of the Works Contract - in line with the settlements of variant no. 1 - may lead to the occurrence of major adverse effects in respect to 2 types of natural habitats and 14 animal species which are protected within Natura 2000 site called "Grady w dolinie Odry". In case of application of recommendations for minimizing, being the element of variant no 2, which has been adopted for implementation, for natural objects within the area there will be no significant negative impacts.

Operational phase - negative impact is not expected.

5.5. IMPACT ON SURFACE AND UNDERGROUND WATERS

Implementation phase

In line with the settlements of the Water Management Plan in the Basin of the Odra River, the planned-to-be-implemented scope of works indicated in the EIA Report entitled: "Construction of structures / facilities in the scope of flood protection of the city of Wrocław within the activities related to modernization of the Wrocław Floodway System for the Odra - Widawa transfer channel and flood protection embankments located in the valley of the Widawa River together with bridges", for contract: **B 3-1**: Section: the Odra - Widawa transfer up to the railway bridge (Krzywoustego Street) covers the following surface water bodies¹:

- **tasks / WFS structures no. 40, 45.5:**
- **Surface water bodies:** PLRW60002113399 - the Odra River within the boundaries of Wrocław
 - **Integrated surface water bodies:** SO 1106
 - **Status:** heavily modified water parts
 - **Assessment** of their state: poor
 - **Assessment of the risk of failure to achieve the environmental objectives:** threatened²
 - **Derogations:** New modifications, transforming physical characteristics. Because of the planned activities in the scope of implementation of the investment resulting in changes of the characteristics of surface water bodies aimed at the higher social objectives such as flood protection, environmental objectives assumed for the surface water bodies cannot be reached³⁴.
 - **Purpose of water protection:** for waters designated as heavily modified, it is required to fulfill the conditions which correspond to **good or more-than-good potential of waters**⁵. Surface water bodies are threatened with failure to achieve the environmental objectives.
- **tasks / WFS structures no. 41.1, 41.2, 41.3, 42.1, 42.1.1, 44.1, 44.11, 44.12, 44.13, 44.6, 44.2, 45.5, 45.2, 45.1, 46.1, 44.3:**

¹ As defined in Article 2, item 10 of DIRECTIVE 2000/60/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 23 October 2000 establishing a framework for Community action in the field of water policy. Official Journal of the European Communities No. L327 / 1 of 22.12.2000.

² This is the real possibility of failure to achieve the environmental objectives

³ In accordance with Article 4, item 5d it was developed the Water management plan for the Odra River basin (Polish Monitor No. 40/2011 item 451), the reader will find detailed description of this topic in this document.

⁴ There are derogations from the the prohibition of the further transformation of physical characteristics the area due to the planned modernization and construction of embankments (WFS Project)

⁵ Environmental objectives set out in Article 4 mentioned above Directive

- **Surface water bodies:** PLRW60001913679 - the Widawa River from Olesnica to Dobra
- **Integrated surface water bodies:** SO 0309
- **Status:** natural water body
- **Assessment of their state:** poor
- **Assessment of the risk of failure to achieve the environmental objectives:** not threatened¹
- **Derogations:** none²
- **Purpose of water protection:** for designated waters as natural water bodies, it is required to fulfill the conditions which correspond to **good ecological state of waters**. Surface water bodies are not threatened with failure to achieve the environmental objectives³.

Within the Works Contract the tasks were divided into two groups:

- a) The tasks the scope of works of which does not cover any interference within the river-bed of the Widawa as well as the Widawa Odra Relief Channel,
- b) The tasks the location and the scope of works of which cover the interference into the river-bed - the actions can cause **deterioration of potential or ecological state of waters**.

In reference to point a) - **the tasks the scope of works of which does not cover any interference within the river-bed of the Widawa as well as the Widawa Odra Relief Channel: WFS no. 44.1, 44.11, 44.12, 44.13, 44.2, 45.5, 45.1, 46.1, 44.3.**

The embankments projected for construction / reconstruction and modernization area located at a distance from 10 m to 850 m from the river-bed of the Widawa River or other surface water courses. In line with the results of the conducted assessment of the impact onto surface and underground waters, no such impact was stated under the conditions of application of mitigation measures (see Appendix no. 1).

The works connected with construction and modernization of embankments will be realized behind the river bed of the Widawa River and Odra-Widawa Transfer channel for this reason in normal hydrology conditions (flow of water fitting in the riverbed) it is the lack of influence on the fish and other water species.

Summarizing the analyzed Works Contract do not affect the environmental objectives specified in the "Water management plan for the Odra River basin", do not cause the

¹ Environmental objectives set out in Water Framework Directive will be achieved..

² There are no derogations from regulations set out in Water Framework Directive

³ There are no derogations from regulations set out in Water Framework Directive

deterioration of potential / state of waters and do not affect the shape of the river-bed as well as the morphological continuity of water courses.

The conducted analysis of their impacts onto the protection objectives of the Natura 2000 areas has indicated that these impacts shall be minimized and limited under the condition of application of mitigation and compensation measures contained in the Environmental Impact Report for the analyzed project.

In reference to point b)

The tasks the location and the scope of works of which cover the interference into the river-bed - the actions can cause:

- deterioration in the ecological potential of waters: WFS no. 40,
- deterioration in the ecological state of waters: WFS no. 41.1, 41.2, 41.3, 42.1, 42.1.1,

The scope of the planned works covers regulation and expansion of the river-bed of the Odra - Widawa Relief Channel together with regulation of the river-bed of the Widawa River at 50 m - sections within the bridge structures at km of the Widawa River: WFS 42.1 - km 17+150; WFS 42.1.1 - km 16+880 and at the Widawa - Odra Relief Channel: WFS 41.1, WFS 41.2 - km 1+450; WFS 41.3.

Moreover, the reconstruction of the river-bed at the Weir (WFS 40 - km 2+600) and (WFS 41.3) of the channel section approximately at km 1+450 - 2+600 with the river-bed width up to 50 m.

The projected solutions to minimize the impact onto surface waters:

WFS structure no. 40 (flap weir) - For the stabilization of the area in front of the flap weir, it is projected to secure its apron at the length of 10 m in the form of Mesh-stone baskets arranged at the layer of filtration geo-textile. The securing element will be biologically built-up at its surface by means of top-soiling and sowing with a mixture of meadow grasses. Due to high speed of waters (at the course of flood waters going through the city) which will flow through the weir, massive securing elements of the apron are projected. Mesh-stone baskets with their thickness of 1.0 m placed at mattresses made of geo-textile shall be the basic securing elements. All banks of the water pond shall be secured by means of a massive heap of stones not to prevent their wash-out. The surface securing elements (mesh-stone baskets) will be covered with sand, top-soiled and then sown with a mixture of meadows grasses.

WFS structure no. 41.3 - In order to increase the capacity of the Odra - Widawa transfer channel, it is also projected to execute the following works:

- widening the channel bed at the bottom to the width of 50 m at the section from the weir at the inlet to the Strachocinskie bridges and below the bridges to 35 m up to joining the Widawa River,
- potential minor deepening of the river-bed,
- seasonal cutting of shrubs, reeds and individual trees,
- cutting of vegetation at the mid-embankment as well as at the embankment slopes.

Regulation of the main channel in the vicinity of the bridge structures: The works are aimed to deepen the river-bed, increase its cross-sectional profile with simultaneous improvement of flow conditions. It will result in the increase of flow at the main river-bed. Within the regulation it shall lead to significant deepening and strengthening of the bottom within the road and railway bridges which currently cause adverse elevation of water surface and at flood - a risk of erosion of the bottom and banks.

The EIA covers the variant analysis of the projected solutions of the flood-protection of the agglomeration of the city of Wrocław. The technical variant considered in the EIA has been the result of previous studies / analyses at the time of development of the Feasibility Study of Project of Flood Protection of the Odra River Basin. According to the provisions included in the *"Feasibility Study of the Raciborz flood protection reservoir at the Odra River and modernization of the Wrocław Floodway System"* (prepared in 2004), the construction of the Raciborz reservoir provide effective reduction of flood waters at the Odra River and - together with the modernization of the Wrocław Floodway System, is to provide almost complete protection of Wrocław in case of flooding with its extent being comparable with the flooding which took place in 1997.

The technical variant required adjustments due to changing the manner of land usage within the projected routes of the embankments; the conducted natural inventory identified the need for solutions reducing interference (especially) into naturally valuable areas in the valley of the Odra River. Thus, the second (environmental) variant was proposed for implementation. The positive features of this variant include mainly:

- elimination of material losses within the impact area of the project,
- possibility of conduct "safe" agricultural activities at the area of the behind-embankment,
- minimum interference within flora and fauna habitats, solutions minimizing the impact onto the Natura 2000 areas.

The analysis also included the zero variant at which it was indicated that failure to implement the analyzed Works Contract will lead to:

- deepening public dissatisfaction: lack of security and possibility of occurrence of health and psychological consequences of flooding,

- occurrence of life- and human health-threatening situations (floods which took place within the last years strengthen such risk),
- occurrence of material losses (floods which took place within the last years strengthen such risk).

Moreover, in order to justify the selection of such variant of the project more precisely, a detailed analysis was made to compare variants of the project using the characteristics of the environment in the vicinity of the planned investment, and to define the fundamental impacts of the project on the environment. The analysis was presented in the form of a check-list within which the following impact characteristics were identified: favorable and adverse, significant and insignificant, long-term and short-term, local, regional, and reversible and irreversible. The analysis was conducted in such environmental categories as: under-ground waters, surface waters, air, land, flora and fauna, people, land use and population at the construction and operation of this Works Contract. Based on the above criteria, a cumulative level of the impact of the planned Works Contract onto particular natural habitats as well as onto particular species of plants and animals for the protection of which a particular Natura 2000 area was assigned was specified. Also the purpose of the planned Works Contract such as securing the valley of the Odra River against flooding was considered. The analysis showed that the solutions according to the second (environmental) variant, taking into account the suggestions of environmentalists (consultations in preparation), minimize the negative impact onto the environment, thus the cumulative impacts at the construction stage will be the least.

Introducing the implementation of the environmental variant, solutions which maximally reduce the negative impact onto the state of some waters were applied. In particular:

- the analyzed Works Contract within its scope primarily covers the construction of new embankments as well as the reconstruction of the existing ones as well as the increase of clear span of the existing communication structures at the Widawa - Odra Relief Channel as well as at the Widawa River from km 0+000 up to 2+100 in order to passing flood / raised waters safely. As shown in the Feasibility Study and EIA, these Works Contracts are aimed to protect the built-up area of the Wroclaw agglomeration with its 600 thousand inhabitants so then they can be perceived from the economic and social perspective,
- the introduced adjustments of new embankments along the new route being more distant from the Widawa River and the Odra - Widawa Relief Channel expand the valley of the Odra River and thus increase the natural retention and flood-coverage areas in the valley of the river,
- the location of the embankments at a distance of more than 10 m from the river bed (the bank of the Widawa River and the Odra - Widawa Relief Channel), modernization and

reconstruction at the existing routes, introduction of mitigation measures as well as no interference within the beds of these watercourses limit their negative impact onto the objectives of water protection and the objectives of the Natura 2000 areas established within the region,

- actions related to the interference into the river-bed are only linked to the need to increase clear spans of the bridges and improve the safe pass of flood / raised waters (reducing erosion of the bottom and slopes),
- construction of the new embankments is linked only to the protection of built-up areas, the variant which is the least harmful to the environment was selected. The new embankments have been to be located at the furthest possible distance from the river, with their convenient communication with the existing infrastructure (roads) and the least intrusive within the natural habitat. In this manner the natural retention and flood-coverage areas of the valley of the Widawa River have been not reduced.

Their mapping and characteristics of surface water bodies within the planned works are presented in the table 5-1.

Table 5-1 Characteristics of surface water bodies located within the planned works

Body of surface water		Location (Regional Authority for Water Management in Wrocław)					Type of the body of surface water	Status	Con diti on ass ess me nt	Risk assessme nt of failure to reach the environm ental objective s	Derogations
European Code (Body of surface water)	Name of Body of surface water	Integr ated Body of Water	Water region	River basin district		Eco-region according to Kondracki according to Illies					
				Code	Name						
A. Surface water bodies within which there are the considered WFS structures located											
PLRW60001913699	Widawa from Dobra to Odra	SO 0309	Water region of the Middle Odra	6000	Catchme nt area of the Odra River	Central Plains (14)	Lowland river sand- loam (19)	Heavily modified water body	Poor	Unthreate ned	None
PLRW60001913679	Widawa from Olesnica to Dobra	SO 0309	Water region of the Middle Odra	6000	Catchme nt area of the Odra River	Central Plains (14)	Lowland river sand - loam (19)	Natural water body	Poor	Unthreate ned	None
PLRW60002113399	Odra within the limits of Wrocław	SO1106	Water region of the Middle Odra	6000	Catchme nt area of the Odra River	Central Plains (14)	Great lowland river (21)	Heavily modified water body	Poor	Threatene d	New modifications, transforming physical characteristics. Because of the planned activities in the scope of implementation of the investment resulting in changes of the characteristics of Surface water bodies aimed at the higher social objectives such as flood protection, environmental objectives assumed for the Surface water bodies cannot be reached.

Operational phase

In the operational stage of the embankments there will be no threat to surface, ground or underground waters.

The new and modernized embankments will be located at a distance of more than 30 m from the Widawa River-bed, hence during maintenance works there will be no impact on fish and other aquatic organisms of the Widawa River.

5.6. SOCIAL AND CULTURAL MONUMENTS IMPACTS**5.6.1. Social impact**

The feelings which the investment may invoke in people living near the implemented project may be mainly on emotional grounds e.g. fears of destruction of the embankment (breach of the embankment), yet securing adequate information for people living near the Works Contract about proper, safe, technical and technological solutions should help them overcome these fears. In addition, people are aware of the poor conditions of existing embankments and that their property is not safe. Hence the Works Contract connected with modernization of embankment that shall increase the flood protection is commonly accepted. Public participation is the only possible way to mitigate conflicts over the location of the planned investment. Enabling the participation of concerned private entities or ecologically-oriented social organizations in making decisions gives the opportunity of making a statement by people who are directly interested in the effects of the projected investment plan. Mutual negotiations can lead to amicable settlement of the conflict. It should be borne in mind that the compliance with the following rules will be required for the effectiveness of negotiations run with local communities:

- ➡ all the information contained in EIA Report and the present Environmental Management Plan (EMP) should be made available to all residents and representatives from the organizations concerned;
- ➡ people responsible for public consultation must take effective actions, with a view to reaching the broadest possible circle of recipients with the information and enabling to express free opinions by all the concerned people;
- ➡ the people concerned should have sufficient time to become acquainted with the information and to submit their opinions.

The implementation of the present Works Contract will not bring so significant social effects as other tasks performed within the WFS (with construction of the new embankment section); The contract-related activities will lead to the expropriation of land for the expansion of the existing embankments.

The comprehensive analysis of this issue was made and is described in document named RAP (Resettlement Action Plan, prepared by JV Grontmij, 2011).

5.6.2. Land area for the investment

The area physically covered by the infrastructure together with its direct impact area analyzed during EIA (in borders of impact during works implementation) is equal to approximately 727.67 ha.

5.6.3. Impact onto cultural heritage

The planned works are located in non-urban areas or the areas with low density of development.

In view of the nature of the conducted works and their considerable remoteness from the monument under legal protection there will be no adverse effects to known cultural heritage sites (distance exceeding 300 m). However, in case of "chance finds" during the works in progress will be discussed with relevant authorities of heritage conservation, and in case of finding historic structures or elements of cultural monuments while conducting these works, archaeological research will be carried out.

5.6.4. Impact on natural resources

Given the location, spatial extent and type of the works related to the Works Contract B3-1, it was found that its implementation is likely to affect the conservation status of the following habitats and / or species being the subject of the protection within the Natura 2000 sites: SAC "Grady w dolinie Odry" (see App. No. 7), thus minimizing and mitigating measures are required, as shown in App. No. 1.

The planned works contract does not affect other elements of natural resources, including underground waters and surface waters.

5.7. BACKGROUND FACILITIES OF THE CONSTRUCTION SITE

In case of background facilities of construction sites and storage places, the admission on their temporary occupation was preceded by the analysis of the impact onto various elements of the environment. At the selection of territory for background facilities of construction sites the following aspects are taken under consideration:

- recognition of territory in relation to its ground base, vegetation cover and ground water levels: construction sites are located at the areas which are free from trees, shrubs and at places where the level of ground water is at least 1,5 m below the terrain level,

- geological structure of any selected area effectively protects groundwater resources (GZWP 320 area),
- location of construction sites ensures convenient entry / exit and access to energy and water supply for social purposes. The access road does not impede access to any nearby buildings,
- location of construction sites needs to be outside the protected natural habitats.

Moreover, at the stage of the construction project, it is recommended to draw up the organizational draft project of the construction site in which - apart from the location of construction background facilities - the terms and conditions of their use and management are specified, including: location of parking lots for construction equipment and other vehicles, manner of protection against oil contamination of soils and underground waters, manner of discharge of rain waters, location of storage places of building materials and places of storage of municipal waste.

The properties of the State Treasury (Agricultural Property Agency) were selected for the background facilities of the construction.

Additionally, the locations which - due to natural reasons - were not completely excluded and the ones which can be used upon meeting certain conditions were chosen. Traffic made by heavy machines and vehicles as well as storage of construction components, used materials and post-construction waste should be limited only to the areas covered by direct earth works and to the existing roads. Unjustified damage to surface ground layers, e.g. in case of machines and vehicles moving beyond the construction site, should be minimized or prevented. It will enable to avoid physical transformation of soil cover of areas in direct vicinity of the location of the works contract as well as within the investment itself.

In view of environmental and social aspects, background facilities of the construction site generate potential negative impacts (risks) due to: potential earth pollution, storage and use of hazardous materials, fuels and oils, demand for water and wastewater, demand for electricity and waste generation. The proximity of housing development may be a source of potential disturbances of co-operation with local communities as a result of the presence of a considerable number of workers, particularly migrant staff who can be a source of sexually transmitted infections.

The most effective manner of countering potential adverse effects is that the Works Contractor should draw up the Organizational Project at the Construction Site which should also cover manners and procedures on organization and operation of the Construction Site in order to secure local communities. The construction sites must comply with health and safety conditions being in force in Poland and the European Union and be equipped with sanitary equipment for collection of wastes and their disposal. Wastes should be transported to the

wastewater treatment plant in Janowek (or any other place meeting the conditions of environmental protection). The waste management should be run in accordance with the Law on waste (separation and storage in appropriate containers and collection by licensed companies). The Works Contractor should have appropriate financial means guaranteed to ensure proper organization of the construction site and its operation in the course of the investment.

5.8. CUMULATIVE IMPACTS

The implementation of the Works Contract B3-1 can overlap other planned contracts on works to be performed within the area and its vicinity of public works contracts, such as:

B1-1 Modernization of Blizanowice -Trestno embankment

B1-2 Modernization of Kotowice - Siedlce embankment

B1-3 Construction and modernization of other embankments above the city of Wrocław

B1-11 Construction and modernization of other embankments below the city of Wrocław

as well as the works contracts:

1. Construction of structures/facilities of floodway protection of Wrocław city in scope of activities connected with WFS modernization for transfer channel Odra-Widawa and embankments located in the Widawa River valley together with the bridges - **Works contract B3-2** (the part of WFS Project in scope of structures realized by Lower Silesia Board of Amelioration and Water Structures in Wrocław.
2. Wrocław Floodway System Modernization in scope of structures realized by the Regional Authorities for Water Management in Wrocław.

Land surface

At the current state there is a considerable extent of transformations of land surface and - consequently - natural components connected with it, such soil, land shape, geological surface structures within and in the immediate vicinity of the investment area. The planned project will result in further transformations within the considered environmental components, while the positive fact is that the investment will be implemented mainly at the line of the existing embankments, i.e. the area which has been already converted. Routes of transportation of earth masses will have a more considerable impact on the conversion of land. However, the impact will be significantly reduced thanks to minimizing actions to be applied there.

The total effect onto the land surface was assessed as minimal, especially due to no

exceptional or distinctive environmental features in this respect (no soil of high usable value, no soil of organic origin, monotonous flat topographic profile and no locally valuable land elements) covered by the investment, therefore finally there is no significant cumulative impact projected.

Landscape

New and modernized sections of the embankments will be visually distinguished within the local landscape, but will not cause changes in particularly valuable natural vegetable elements. Changes in the landscape will be made by infrastructure objects such as roads, bridges, redeveloped energy lines. They will be the mark of visible urbanization of the land, but when located at such little distance from Wrocław it will not be surprising or unacceptable. Thus it is not stated that there are any significant adverse cumulative risks for landscape from the perspective of the investment in relation to its existing and proposed functions.

Cultural heritage

Since the planned Works Contract is not connected with any negative threat for monuments protected on the grounds of regulations on the protection of the monuments and care, there will be no possibility for cumulative threats to historic heritage.

5.9. IMPACT ONTO LOCAL CLIMATE

The planned works contract due to the specificity of the works carried out as well as lack of any negative emissions at the operational phase will have no effect on climate changes.

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6. DESCRIPTION OF MITIGATION MEASURES

6.1. DESCRIPTION OF MITIGATION MEASURES

This chapter presents the mitigation measures described in the following documents:

- EIA Report - "Construction of flood protection objects/facilities for City of Wroclaw as part of activities related to Modernization of Wroclaw Floodway System for flood relief through the Widawa Transfer as well as embankments located in the Widawa River valley together with bridges" (3/3), prepared by Joint Venture GRONTMIJ POLSKA Sp. z o.o./SOGREAH Polska Sp. z o.o./EKOCENTRUM Sp. z o.o (May 2011),
- DECISION which determined environmental conditions for the project namely: "Construction of flood protection objects/facilities for City of Wroclaw as part of activities related to Modernization of Wroclaw Floodway System for flood relief through the Widawa Transfer as well as embankments located in the Widawa River valley together with bridges" dated 31 January 2012 (Ref. No. WOOS.4233.1.2011.LCK) issued by Regional Director for the Environment Protection in Wroclaw.

The mitigation measures include such elements of environment as: soil, surface and ground waters, air quality, noise, cultural heritage, flora and fauna. They are connected with particular recommendations for the Contractor, Engineer and DZMiUW which must be implemented before, during and after the works contract execution.

6.1.1. Soil

Implementation phase

Primarily, in reference to the land surface, including land shape and soil, there will be some direct impacts in the period of the investment when the changes will be associated with land transformations as a result of conducted earth works and land clearing operations, and possible contaminations of land with oil substances in case of any leakages from used machinery and equipment. In any case, within the scheduled mitigating activities, the threats will not be significant.

The most important mitigation measures are the following:

- prior to the essential work of leveling off remove the top soil layer (average depth of 30 cm) and store in the vicinity of the construction area, in separate piles protected from drying and mixing with the native rock;
- after completion of earthworks use removed soil for making flood banks slopes which are to be turfed: on a width of 5-10 m on one side or both sides of the dike spread and align previously removed hummus along the dike and within reconstructed objects, remove any roots. In the technology lane and places for storage of building materials in addition

perform tillage: disking, harrowing and fertilizing and seeding grass mixtures and aleguminosae;

- in the event of any occurrence of petroleum products spill, soil contaminated by the accident must be removed immediately and given to the appropriate entities holding authorizations for its further treatment and use.

The mitigation measures and monitoring plan connected with soil protection are described in detail in Appendix 1 and in Appendix 2.

Operation phase

At the operational phase no negative impact onto the ground environment is projected. Grounds located at the outer embankment will be secured against floods, so in the area rational farming can be conducted.

6.1.2. Surface and ground water

Implementation phase

During works contract realization due to the distance of embankments from the Odra and Widawa rivers-bed (more than 30 m), there will be no impact on fish and other aquatic organisms of these rivers.

The impact of the planned investment onto underground waters is mainly related to the construction period.

Pollution of the underground water with oil substances caused by accidental leakages of fuels from engines of construction machinery or means of transport moving within the transport and assembly area is a very significant threat (particularly in the areas where there are close correlations of surface water and all quaternary levels of underground waters and there is a phenomenon of infiltration of land pollutants into underground waters and surface aquifers are supplied with infiltrative precipitation).

The most important mitigation measures are the following:

- it should be checked in real working condition of construction machinery and transportation, to eliminate the spillage of petroleum hydrocarbons to the surface;
- any place designated for handling cars and machines must be periodically (until completion) lined with insulating materials. Vehicle parking should not take place: on the area of MGWB 320, the area between the flood banks and immediately by the bank;
- in open areas do not store any hazardous materials that could be a source of contamination of surface and ground waters.

The mitigation measures and monitoring plan connected with surface and underground water protection are described in detail in Appendix 1 and in Appendix 2.

Operational phase

In the operational stage of the embankments there will be no threat to surface, ground or underground waters.

6.1.3. Air quality**Implementation phase**

At the duration of construction and assembly works atmospheric pollution will occur - it will be caused by non-organized emission, related mainly to the operation of assembly machinery and means of transport powered by internal combustion engines emitting gaseous pollutants as well as by earth works (transport, storage and incorporation of grounds).

The mitigation measures and monitoring plan connected with air quality protection are described in detail in Appendix 1 and in Appendix 2.

The most important mitigation measures:

- Protect storing space of soil mass to reduce the dusting.
- Do not allow long-term operation of internal combustion engines of machinery and construction vehicles at a standstill (limit emissions of so-called phase of idle speed).
- Organization of works should take into account possibility to perform works synchronously in several locations spaced approximately 300 - 500 m, in a way that minimizes the sum of concentration of pollutants.
- In the immediate vicinity of residential buildings the number of machines working simultaneously on the same section should be limited in order to minimize the direct impact of emission. In these areas, car parks should not be located.

Operational phase

During the operation stage there will be no negative impacts on air quality.

At conducted periodic mowing treatments of the embankments (twice a year) - minor amount of exhaust gasses related to the use of power-driven equipment will occur. However, it is a very low amount and does not impose any threat to the air quality in the area.

6.1.4. Noise**Implementation phase**

The distribution of noise level around the projected investments will change together with the movement of construction works. Within the assessment of the impact of the planned works onto the acoustic climate, calculations and measurements were conducted for the case that works are in progress at all sites, within the areas covered by protection against noise. This approach allows assessing the acoustic impact in the least favorable situation from acoustic point of view. In fact it cannot be excluded that the works will be carried out

with less intensity, i.e. they not will take place at the same time at all sites. In case of staging the works, the impact of the investment onto the acoustic climate will be less arduous for local residents. Noise emissions at their significant (high) levels can occur during the construction period only. It will be mainly conditioned by the intensity of the conducted earth works. Earth works are the basic works to be performed in case of construction and development of the flood protection embankments.

The mitigation measures and monitoring plan connected with noise protection are described in detail in Appendix 1 and in Appendix 2.

The most important mitigation measures:

- Work in areas protected from acoustic nuisance should be performed only in the day, i.e. between 6:00 and 22:00.
- Construction site, access roads and storage of soil mass should be organized and main-tained so as to minimize dusting and be located possibly away from residential areas (in case of work in areas near residential development, such works should be limited to daytime).

Operational Phase

During the operation of the planned flood protection infrastructure noise emissions will not occur. Minimal changes of the acoustic field distribution in the region of rebuilt sections of the embankments may be expected, but these changes will often be completely irrelevant to the protection against noise.

6.1.5. Cultural heritage

The works will be carried out in the distance of more than 300 m from any monuments. In view of the nature of the conducted works and their considerable remoteness from the monuments covered by legal protection, there will be no adverse effects.

However, at the area of the planned construction works, uncovering still unknown or unrecognized (yet) archaeological sites is possible. The table 6-1 below includes a list of archaeological sites in the distance of more than 300 m from the planned investment.

Table 6-1. A list of archaeological posts related to the implementation of the investment or within it immediate vicinity

No	Place, commune, region	Area no (AZP)	Stand no.	Function	Culture	Chronology	Comments/in register	Distance from the planned works, [m]
1	Wilczyce, municipality of Długoleka,	79-29	5/69	Settlement traces	-	Stone age	At the regulation of the Widawa River	300

No	Place, commune, region	Area no (AZP)	Stand no.	Function	Culture	Chronology	Comments/in register	Distance from the planned works, [m]
	district of Wrocław							
2	Wilczyce, municipality of Długoleka, district of Wrocław	79-30	7/3	Settlement traces	Lusatian culture	Bronze age Early Middle Ages Early Middle Ages IX-XI century		300
3	Wilczyce, municipality of Długoleka, district of Wrocław	79-30	6/2	Settlement traces	-	Neolithic period		300
4	Wilczyce, municipality of Długoleka, district of Wrocław	79-30	21/11	Settlement traces	-	Prehistory Late Middle Ages		300
5	Wrocław-Kowale	79-29	14/100	Settlement traces	-	Neolithic period	At the construction of the channel - a pile of sand	400
6	Wrocław-Kowale	79-29	15/101	Settlement traces	-	Neolithic period	At the construction of water locks	400
7	Wrocław-Kowale	79-29	16/102	Settlement traces	-	Neolithic period	At the construction of the channel	400
8	Wrocław-Kowale	79-29	17/103	Settlement traces	Corded-ware culture	Neolithic period		400-
9	Wrocław-Kowale	79-29	3/89	Settlement	-	Stone age	From the Widawa River-bed	500
10	Wrocław-Kowale	79-29	9/95	Settlement Settlement traces	-	Early Middle Ages XI-XII century Late Middle Ages		500
11	Wrocław-Kowale	79-29	8/94	Settlement Settlement traces	-	Early Middle Ages XI-XII century Late Middle Ages XIV century		500
12	Wrocław-Kowale	79-29	10/96	Settlement traces	-	Late Middle Ages		500
13	Wrocław-Kowale	79-29	18/104	Settlement traces	-	Neolithic period	Shipping channel	300
14	Wrocław-Kowale	79-29	12/98	Settlement traces	-	Neolithic period		300
15	Wrocław-Psie Pole	79-29	7/7	Settlement	Pomeranian culture period	Hallstatt period		400
16	Wrocław-Psie Pole	79-29	10/10	Settlement	-	Early Middle Ages	Relics - not found	400
17	Wrocław-Psie Pole	79-29	11/11	Settlement traces	-	No specified	At the bridge over the Widawa River	300
18	Wrocław-Psie Pole	79-29	24/24	Settlement	Przeworsk-based	Roman Period Prehistory Early Middle		300

No	Place, commune, region	Area no (AZP)	Stand no.	Function	Culture	Chronology	Comments/in register	Distance from the planned works, [m]
					period	Ages Late Middle Ages		
19	Wrocław-Psie Pole	79-29	23/23	Settlement traces Settlement	-	Prehistory Early Middle Ages X-XII century		300
20	Wrocław-Psie Pole	79-29	5/5	Settlement traces Settlement	-	IV period of the Bronze Age? No specified	From the Widawa River-bed	300
21	Wrocław-Psie Pole	79-29	4/4	Settlement	-	IV period of the Bronze Age - Hallstatt period Late La Tène period Early Middle Ages		300
22	Wrocław-Soltysowice	79-29	8/113	Settlement traces	-	Late Middle Ages		300-
23	Wrocław-Swojczyce	80-29	24/14	Settlement	-	Early Middle Ages	Destroyed in the 60s. XIX century	400
24	Wrocław-Swojczyce	80-29	8/4	Settlement traces	-	Mesolithic period Prehistory		400
25	Wrocław-Swojczyce	79-29	16/84	Settlement	Przeworsk-based period	Roman Period Prehistory		400
26	Wrocław-Swojczyce	79-29	5/80	Settlement traces	-	Stone age	At the regulation of the Widawa River	400
27	Wrocław-Swojczyce	80-29	6/3	Settlement traces	-	Prehistory	-	400
28	Wrocław-Swojczyce	80-29	12/6	Settlement	-	Prehistory Early Middle Ages X-XIII century Late Middle Ages	-	300
29	Wrocław-Swojczyce	80-29	25/15	Settlement	-	Bronze Age - Hallstatt period Prehistory Early Middle Ages Late Middle Ages	197/1279/714/Arch./1993 15/02/1993	500

Therefore, it is highlighted in this EMP for special attention vis-à-vis the potential for “chance finds”. In addition the works in progress will be discussed with relevant authorities for heritage conservation, and in case of finding historic structures or elements of cultural monuments while conducting these works, archaeological research will be carried out.

6.1.6. Flora and fauna

The conducted analysis showed that the implementation of the works contract **may** cause adverse effects in respect of the types of natural habitats and species of animals which are

protected within the Natura 2000 site "Grady w dolinie Odry". Thus it was necessary to indicate relevant actions aimed at their minimization. These methods of minimization of such effects are listed in Table 1 in Appendix 8. Below we present summary of such measures:

- in some cases the embankment superstructure should be executed only from the embankment crest with an absolute prohibition on occupation of the inter and outer embankment area,
-
- ban on felling of trees and shrubs within the inter embankment at the specific sections,
- on indicated sections of the embankment the year before the commencement of works in the period from June to September every month, regular low mowing of the embankment surface should be performed. The following year (after the commencement) regular mowing should be repeated in front of the works line to prevent the re-population of the already abandoned area,
- minimization of cutting blackthorn and hawthorn shrubs,
- works in some places should be carried out at day, with natural lighting,
- during felling of trees with their perimeter at breast height of more than 50 cm within specified sections of the embankments, the supervision of an entomologist is required to determine whether and which fragments of a particular tree are the place of residence of a particular species. In case of stating the presence of beetles at felling, adequately-cut tree fragments should be transported - in accordance with the arrangements carried out with a specialist - entomologist (present on the spot) - to the place specified by the specialist in order to enable the species to complete its life-circle and leave the tree.
- in case of some sections of the embankment trees (indicated to be left untouched) should be secured for the duration of the works against accidental damage,
- resignation from back-filling local depressions in the ground at the inter embankment area.

The implementation of the proposed mitigation measures will require engagement of environmental specialists (botanist, entomologist, herpetologist, chiropterologist, etc.) by the Contractor during the works execution. The work load of adequate environmental specialists results from the requirements presented in the Mitigation Plan. The engagement of an entomologist and a chiropterologist will be required if there is the intention of cutting down trees with their perimeter at breast height of above 50 cm resulting from technical reasons. At that time it should be done with the participation of specialists:

- entomologist - to control the occupancy of the trees with protected species of beetles, such as *Cerambyx cerdo*, *Osmoderma eremite*,
- chiropterologist - to control of the presence of bats (see EMP table 1).

If the removal of such trees is not necessary, engagement of specialists shall not be necessary.

In case that trees need to be cut down and species of beetles and bats are present, the recommendations of specialists should be implemented. During the transfer of species, the environmental specialist will control the correctness of realization.

According to planned measures as shown in Table 1 in Appendix 1 before works commencement, additional floristic inventory should be performed in order to determine the current distribution of protected plant species in the areas to be permanently and temporarily occupied for the purposes of implementation of this contract. In case of finding specimens of protected plants (according to Art. 56 of *Nature Conservation Act of 16 April 2004*), after obtaining an appropriate permit by relevant Nature Conservation Department, they should be transferred to the habitat suitable to this plant.

Additionally, in places designated as places of potential presence of protected plant species, before the works begin, the top layer of soil with herbaceous vegetation should be removed and put in a place protected from destruction - in order to use this layer later, during the reclamation works. Detailed rules for the conduct with the individuals of identified plant species (including choice of technology and target replanting sites), as well as technological and location details of dealing with a layer of soil should be agreed with a specialist in the field of botany.

Prior to commencement of works, a site visit of the works implementation areas by the Contractor with the assistance of botanist or phytosociologist should be carried out in order to locate places of occurrence and abundance of invasive plants. After location and marking visibly places covered with invasive plants, preventive measures during the implementation of the investment should be taken, which will reduce the spread of those plants, including:

- taking off of humus patch with invasive plants and removal from the investment site to the composting facility or disposal in any other effective manner. It is unacceptable to mix humus with the native vegetated humus,
- people performing the work related to the elimination of invasive plants should be trained and supervised.

The specialist in the field of herpetology will be engaged in connection with mating season of amphibians. The person will not directly do tasks such as monitoring daily barriers or traps and moving animals, but will prepare recommendations to follow.

On the sections of flood banks, at which amphibians breeding places were inventoried, security solutions should be used to prevent mortality (as a result of the work and traffic) of animal traveling to and from the breeding grounds. Technical solutions (e.g. fencing of construction sites or use of traps in the form of grooves in the ground) are to be performed along sections corresponding to the length of amphibians breeding places and on the length not less than 150 meters from the edges of those places. Detailed technology and location, and the rules for handling amphibians are to be agreed with a specialist in the field of herpetology. During the implementation phase of the project, within the periods indicated by a specialist-herpetologist, daily barriers or traps shall be monitored and animals should be moved according to directions in which they move.

This scope of work will not be connected with full time engagement of environmental specialists (listed below) and is included in B3-1 Works Contract time-frame.

The following specialists are required for EMP implementation for this Works Contract: (i) entomologist, (ii) chiropterologist, (iii) botanist (or phytosociologist), (iv) herpetologist, (v) zoologist. They will be engaged during implementation of the mitigation measures and compensation among others: I.2.1.16, I.2.1.19, I.2.22, I.2.23, I.2.24, I.2.25, I.2.27, I.2.28, I.2.33, I.2.34 (Appendix no. 1).

6.2. COMPENSATION MEASURES OF THE ENVIRONMENTAL NEGATIVE IMPACT

Compensation of the species and protected habitats within the Natura 2000 areas:

Given no significant adverse impact as well as the projected measures to minimize natural losses, there are no prerequisites to propose compensatory measures within the Natura 2000 areas. All the losses within the natural habitats and protected species which are possible to be avoided have been offset by a wide scope of eliminating and minimizing actions, in line with the second (environmental) variant proposed for implementation.

Compensations of the natural habitats beyond the Natura 2000 areas

At the course of the conducted assessment, it was stated for the environmental variant (second (II) variant), the areas of the existing protected natural habitats are permanently occupied by the flood-protection structures (mainly embankments). The losses shall not be large enough to be considered significant, however, they require to be compensated - at least partially - under article 75 of the act - Environmental Protection Act [unified text: Journal of Laws dated 19.07.2006, no. 129, item 902].

Table 8.3 (the appendix no. 8) presents the summary of compensation actions the need of implementation of which has been presented in the course of the conducted assessment of the environmental impact of the investment (the possibility of major negative impacts onto

the species has been demonstrated). The compensation solutions refer to the protected species of invertebrates, amphibians and reptiles.

In summary, the execution of the following natural compensations are planned:

- 1 For the destruction of the habitats of butterflies: Dusky Large Blue *Maculinea nausitous* and Scarce Large Blue *Maculinea teleius* with its total area of 1.04 ha - at the land plot no. 3, Precinct of Swiniary, AM-23 - restore meadows with their area not lower than 2 ha. The restored meadows should have appropriate species composition (for the above-specified species) similar to flora composition of the damaged habitats, considering flood plants both for caterpillars as well as nectar-giving plants for adults of the above-specified butterflies.
- 2 For the destruction of the habitats of amphibians with their total area of around 0.71 ha - at the land plots no. 7/2, 10 and 11, Precinct of Swojczyce, AM-24 - execute new water reservoirs with their total area of water surface not lower than 1 ha. The reservoirs should have favorable parameters for the breeding of amphibians: their depth - up to 1-1.5 meter at the deepest place, so that once per several years they get dry, tilt of their slopes - around 1:3 - 1:5 both over the water surface as well as under the water surface. There should be shallows made at one of the banks and the opposite bank(s) should be planted with shrubs. Do not fish the reservoirs.
- 3 Start the performance of the activities specified in point 1 (prepare the surface for the restoration of meadows, mow with a mixture of grasses and dicotyledonous plants, conduct at least one mowing with biomass collection and prepare the surface and plant with tree seedlings) prior to the start of commencement of the works specified in Contract B3-1.
- 4 Finish the performance of the activities specified in point 2 (execute the reservoirs together with managing their vegetation) prior to the commencement of the works specified in Contract B3-1.

Table 6-2. Preliminary Programme of compensation

No.	Actions	Implementation period Authority responsible for implementation	Implementation year/half-year													
			2011		2012		2013		2014		2015		2016		2017	
			I ¹	II ²	I	II	I	II	I	II	I	II	I	II	I	II
1	Determining the scope of expertise (survey) in order to design nature compensation	2 month Engineer-Consultant														

2	Preparing site work's programme	2 month Contractor																		
3	Performing nature survey	12 month/ nature specialist Contractor																		
3	Execution of works / tasks for the compensation program	12 month Contractor																		
4	Monitoring and maintenance works on the objects designated for compensation	Implementation period of contracts for works Contractor																		
5	Achieving projected outcomes of the compensation	Contractor																		
6	Monitoring of effectiveness of compensatory measures implemented	Once a year Beneficiary - DZMiUW in Wroclaw																		

¹ First half-year; ² Second half-year;

6.3. REQUIREMENTS OF SITE SPECIFIC IMPLEMENTATION PLANS DURING CONSTRUCTION PHASE

Contractor should build upon the mitigation measures described in the EIA and this EMP and should prepare his own site specific document necessary to construction works realization (these documents will have to be acceptable by the Engineer):

- Site management plan,
- Solid waste plan,
- Quality assurance plan,
- Specific implementation plan, including, inter alia, the measures of habitat protection described in this EMP,
- Safety and health protection plan, including, inter alia, such elements as:
 - *identification of elements of management of land plots or area which can impose threat to safety and health of people,*
 - *information on foreseeable risks occurring in the execution of works, specifying the scale and kinds of threats as well as places and time of their occurrence,*
 - *information about separating and labeling the place of conducting the construction works, in accordance with the type of hazard,*
 - *information on the manner of conducting the training to staff prior to launching the implementation of the works which are particularly dangerous,*
 - *specification of the manner of storage and placement of materials and products, substances and dangerous agents at the construction site,*

- *indication of technical and organizational measures preventing hazards resulting from the execution of construction works at the zones of specific health risks or in their vicinity, in order to ensure safe and efficient communication, allowing rapid evacuation in the event of fire, accident and other threats,*
- *indication of the place for keeping construction documents and papers required for the proper operation of machines and technical equipment.*

The abovementioned documents will be accepted and its realization will be monitored by the independent Engineer-Consultant.

NOTE

The Contractor, while preparing his site management plans, including the Operational Health and Safety Plan, will take into account relevant measures as indicated in the World Bank Group's Environmental Health and Safety Guidelines. Site management plans, which will be prepared by the Contractor, shall be reviewed and endorsed by the PIU and PCU.

6.4. MITIGATION MEASURES PLAN - CHECK LIST

Check list of the mitigation measures plan is covered in Appendix 1.

7. DESCRIPTION OF MONITORING PROGRAM

Proposed monitoring has two basic aims:

- monitoring of works of contractors during the implementation of the project in terms of consistency with agreed measures and remedial actions,
- assessment of the actual impact of the project on the environment in the years following project's completion.

7.1. MONITORING OF IMPACT ON THE ENVIRONMENT DURING CONSTRUCTION STAGE

Prior to Works commencement, the Contractor should develop his own monitoring programme, correlated with the monitoring programme of the Engineer and other institutions engaged in Project realization. The program should concentrate on potential soil, air and water contamination as well as noise emission.

Noise

It is considered that the best approach to control noise in the course of the construction is to require the usage of equipment which meets the noise standards and to monitor its status on a regular basis (at the same time to respond to any complaints from local communities).

If noise levels are exceeded, mitigating measures should be implemented through periodic inspection of operational positions. The responsibility is to be borne by the Contractor of the works.

During the construction, noise is emitted from means of transport and machinery. These sources of noise are provisional and will last to the completion of construction works. At this phase, the level of noise must be controlled only if necessary, (e.g. complaints of local community). There should be noise checking measurements done and in case of exceeded standards remedial actions are to be taken.

Within the monitoring of noise during the execution of the construction works, it is required that the Contractor of the works should:

- prior to starting the works - perform the measurement of background noise,
- report the maximum levels of noise in the course of construction works.

The Contractor of the works is responsible for all the consequences, which are the result of excessive noise levels at the construction phase. If the measurements show increased noise levels, the contractor of the works will be obliged to take appropriate mitigation measures (Chapter 6).

Air quality

At the duration of construction and assembly works atmospheric pollution will occur - it will be caused by non-organized emission, related mainly to the operation of assembly machinery and means of transport powered by internal combustion engines emitting gaseous pollutants, dusting at transport, storage and incorporation of soil masses.

Additional monitoring of the impact of the construction onto air quality will be performed in case of complaints from local communities.

The measures to mitigate emissions to air are listed in the mitigation action plan (chapter 6) and the monitoring plan (chapter 7).

Surface and underground waters

Monitoring any threats to underground and surface waters (in local trenches) at the construction phase is to determine the impact onto their quality. Parameters such as: pH, BOD₅, suspension, turbidity and concentration of petroleum compounds should be assessed. It is recommended that the Contractor of the works performs the monitoring of surface waters before the start of construction works. Moreover, in the course of the construction the monitoring of surface water quality should be done directly after long-term rainfall or in case of an emergency situation (e.g. oil spills, grease etc. from construction equipment).

In case the results of measurements and analyses indicate any increase of adverse effects, it is necessary to determine the reasons for such deteriorating situation and take necessary mitigation measures.

In case of underground waters, the measurements of basic indicating parameters of waters should be performed in case of their emergency contamination (e.g. leakage of oils, grease from construction equipment). This is especially vital in case of the works related to dehydration of foundation excavation for embankment culvert (reduction of the surface of ground water).

The mitigating measures related to the protection of waters are listed in the mitigation action plan (chapter 6) and the monitoring plan (chapter 7).

Soils

The area of construction works is located beyond extensive communication traffic. Thus, as shown in the EIA Report, concentrations of heavy metals in soils are at normal levels which are typical to the area. It is not suggested to conduct the monitoring of soils before and at the construction stage.

In case of an emergency situation (e.g. leakages of oils, greases from construction equipment to the ground) take measures to mitigate (to change soil as the last resort).

The mitigating measures related to the protection of soils are listed in the mitigation action plan (chapter 6) and the monitoring plan (chapter 7).

Flora/fauna

The Contractor must assure environmental monitoring of impacts on flora/fauna during the construction (project implementation) stage. Engagement of the following specialists by the Contractor is required for the implementation of site-specific EMP: (i) entomologist (ii) chiropterologist; (iii) botanist (or phytosociologist); (iv) specialist in the field of herpetology, (v) zoologist. They will be engaged in implementation of specific measures which will be monitored: I.2.1.16, I.2.1.19, I.2.22, I.2.23, I.2.24, I.2.25, I.2.27, I.2.28, I.2.33, I.2.34 (according to the numbers in the Tables - see Appendix 1 and 2 as well as see the extract from Environmental Decision- Appendix 4).

In the scope of the natural environment, the following monitoring has been projected prior to the implementation and at the time of execution of the works:

1. At the performance of the investment - conduct - with the participation of specialists - constant natural supervision considering the proper accomplishment of preventive and minimizing measures in reference to the protected natural habitats as well as the species of fauna and flora. The supervision should include:
 - Pre-implementation monitoring conducted by an entomologist in terms of the location of occurrence of (among others) places and populations of the protected species of insects,
 - Pre-implementation monitoring conducted by a chiropterologist in order to identify the potential living places of bats,
 - Monitoring (by specialists in the field of zoology and botany) of the occupation of the area and the correctness of the executed works within and in the direct vicinity of the protected natural habitats as well as the habitats of the species of plants and animals,
 - Supervision of an ichthyologist at the conduct of works at the section in the proximity of the habitat of occurrence of Ray-finned fish *Sabanejewia aurata* (1146),
 - Supervision of a zoologist or herpetologist covering the monitoring of occurrence of amphibians and reptiles at the area(s) of the conducted building / construction works,
 - In case of statement of low effectiveness of the introduced minimizing measures in the course of such supervision, immediately develop appropriate modifications with the participation of specialists and implement them.

Every year at the peaks of growing seasons of the species - within 2 years from the time of moving plants - with the participation of a botanist - examine the state of the protected plants moved from the area of the investment.

7.2. MONITORING OF ENVIRONMENTAL IMPACT DURING OPERATION STAGE

In the scope of **noise, ground water, surface water, air quality and soil**, there is a lack of impact during operation phase - monitoring is not necessary.

However, in the environmental scope (flora & fauna), the following types of monitoring are envisaged:

1. For a period of 5 years at least from the completion of works at particular WFS structures - with the involvement of a specialist - phyto-sociologist - conduct the monitoring of the natural habitats. The monitoring should include: spatial range of these habitats, extent of their structure formation, state of their preservation, forms of degeneration, presence of characteristic species and observed changes of these features.
2. For a period of at least 5 years from the completion of works at particular WFS structures - with the involvement of specialists in the field of botany and zoology - conduct the monitoring of the protected species of plants and animals covering the occurrence of the species and the conservation status of their populations. The monitoring should be conducted at growing seasons.
3. Over a period of at least 5 years after completion of works, on individual WFS Structures within the project area, performing - by trained persons - of annual monitoring of invasive plants, in particular thickets of *Reynoutria spp.* Should invasive plants appear (shoots and seedlings), the appropriate measures are to be taken to eliminate identified positions and to prevent its further spread.
4. Results of the monitoring including the evaluation and analysis carried out by the specialists to be submitted to Regional Director of Environmental Protection in Wroclaw by January 31st of each year following the year of observation (by 5 years from Contract completion) - under the responsibility of Lower Silesia Board for Amelioration and Water Structures.

7.3. ENVIRONMENTAL MONITORING PLAN - CHECK LIST

Check list of the monitoring plan is attached in Appendix 2.

8. PUBLIC CONSULTATION

8.1. PUBLIC CONSULTATION OF GENERAL EIA FOR ORFPP (2005)

General environmental impact assessment for ORFPP has been carried out for the first time in 2003 (as part of a feasibility study for the project), then it was a subject to verification by a team of foreign and national consultants. In 2005, as a result of these works a document was prepared *Flood Protection Project for the Odra River Basin - General Environmental Impact Study, Main Report*, containing among other issues the Environmental Management Plan for ORFPP (Chapter 8 and 9 of the document herein).

This document was subject to Public Consultations, described in the Project Appraisal Document (PAD). Please note the quotation from PAD hereunder:

'(...) Public consultations and disclosure

65. During Project Preparation. Polish law requires an elaborate procedure for public consultation and disclosure of any works and construction. This procedure was initiated in a systematic way at the level of a community / municipality through announcements and public hearings during 2002 as part of the preparation of feasibility studies, even though the Project had already been under consideration for a long time and the local population was aware of such plans. The consultations were undertaken on all project issues such as design, environmental impacts and social impacts of various project components. However, since resettlement was the major impact inside the Raciborz reservoir, whereas all people benefiting from flood protection were located on the downstream side, separate discussion and consultations were held with the people to be resettled during preparation of RAP.

66. During the EA study. During the preparation of the **EA** study there were two stages of consultations: (i) during the scoping stage of the study; and (ii) during presentation of the findings. During the scoping stage it was decided not to organize a separate public meeting on environmental issues, in view of earlier public meetings on resettlement. Instead of this the EA team had individual meetings with the various stakeholders, including, the Lubomia Gmina, the Archaeological Conservator in Wodzislaw Slaski, the Archaeological Department University of Wroclaw, the Forestry Department in Rudi, WWF Poland, WWF Auen Institute of Rastatt, Germany and various individual experts in nature conservation, geology, soils, ecology, fisheries, and forestry. In December 2004 the EA team attended a resettlement workshop in Raciborz discussing findings of RAP. Preliminary conclusions of the EA were discussed with RZGWGL, RZGWWL and DZMiUW on March 10 and April 28, 2005.

67. During the Presentation of Findings. After approval of the draft EA version PCU distributed about 40 printed copies of the EA to local authorities and relevant stakeholders in the Project. The draft EA was also published on the websites of RZGWGL, RZGWWL, and DZMiUW on June 15 for a period of 4 weeks. Advertisements in local newspapers in Wrocław and Raciborz were published with invitations to the public to participate in two public consultation meetings: (i) a Public Consultation meeting organized by RZGWWL, DZMiUW in Wrocław on 30 June 2005 discussing the impacts of WFS; in this meeting which was held in the Agricultural University 52 persons attended, mainly representing nature conservation organizations and the scientific community. Local authorities and press were not represented. Discussion mainly focused on legal issues, absence of adequate spatial plans and ecological concerns regarding natural habitats in the Widawa valley; (ii) a second Public consultation meeting organized by RZGWGL on July 1, 2005 in the Art Hall in Raciborz, discussing the impacts of the Raciborz dry polder. This meeting was attended by 51 persons, including 7 journalists, a large group of farmers with land in the dry polder, some representatives of the Defenses Committee and a few NGOs.

The discussions in this meeting focused mainly on the social impacts of the project and hardly on environmental issues.

8.2. PUBLIC CONSULTATION OF EIA REPORT (2010-2011)

During the stage of EIA procedure, the public consultation was conducted by the authority issuing the environmental decision, i.e. RDOS in Wrocław.

In this administrative procedure the number of parties exceeds 20. Pursuant to the provisions of Article 74. 3 of the Law on the provision of information about the environment and its protection, public participation in environmental protection and the environmental impact assessment, the parties were notified by the local authority about all activities of public administrations on the principle laid down in Article. 49 of the Administrative Proceedings Code, by announcements published in the following places:

- notice board in the Regional Directorate for Environmental Protection in Wrocław,
- Public Information Bulletin of the Regional Directorate for Environmental Protection in Wrocław (www.wroclaw.rdos.gov.pl),
- notice board in the City Hall in Wrocław,
- notice board in the Municipal Office Długoleka,
- notice board in the Municipal Office Wisznia Mała.

In addition, the announcement was placed on the website and notice board in the Lower Silesia Board of Amelioration and Water Structures in Wrocław. The above was also sent to be published in the place of the investment: Swojczyce, Strachocin, Wojnow, Psie Pole,

Kowale, Klokoczyce, Soltysowice, Polanowice, Swiniary, Widawa and Zgorzelisko as well as: Krzyżanowice, Paniowice, Psary, Szewce, Szymanow and Wilczyce.

Consultation with sanitary authorities:

RDOS came out to State Sanitary Inspections i.e. State Sanitary Inspector in Trzebnica and in Wroclaw as well as the commander of the Military Sanitary Inspector for opinion on EIA procedure and in case of a demand for carrying out procedure, for determination of the scope of EIA Report. RDOS received opinions of:

- Military Sanitary Inspector of 31 August 2010 demanding no need to carry out the environmental impact assessment,
- From others bodies: State Province Inspector in Wroclaw and State Province Inspector in Trzebnica did not provide their opinions. Hence RDOS considered that the authorities did not object.

Taking into account the scope of investment and its location, by decision of 20 September 2010, the RDOS imposed the obligation to assess the impact on the environment and defined the scope of the report. Neither party filed a complaint against the above decision of the Regional Director for Environmental Protection in Wroclaw.

During the procedure RDOS came out the opinions of the State Sanitary Inspectors. State Regional Sanitary Inspector in Wroclaw of 4 August 2011 gave positive opinion. State Regional Sanitary Inspector in Trzebnica - no position. Before the decision, RDOS asked also for opinion to the Commander of the Military Medical Center (KWOM). KWOM opined positively project implementation (opinion, dated 6 June 2011).

Reviews of the State Sanitary Inspectors were incorporated in the content of this decision.

Participation of ecological organizations:

During the ongoing procedure the Regional Director for Environmental Protection in Wroclaw at the request of the Foundation "WWF Poland - World Wide Fund for Nature"; decision of 22 September 2010, allowed the organization to participate as a party.

EIA procedure:

Based on the Article. 33 of the EIA Act, by an announcement dated 17 June 2011, the Authority made public the information about the present project, i.e.:

- entering the procedure of environmental impact assessment
- commencement of the procedure
- subject of the decision which is to be given in this case
- the authority competent to issue the decision, and the bodies competent to issue opinions,
- an opportunity to scrutinize the case and the documentation and of the place where it is open for inspection,

- a possibility to submit comments and proposals,
- how and where to submit comments and proposals, indicating the 21-day deadline for their submission,

for the competent authority to consider comments and proposals.

The announcement stated that Environmental Decision proceeding for this project is conducted for the Lower Silesia Board of Amelioration and Water Structures in Wrocław. The authority informed about the right to issue relevant opinions in accordance with Article 78. 1 point 2 of the EIA Act by: State Regional Inspector in Wrocław and State Regional Sanitary Inspector in Trzebnica. In the announcement the authority pointed out that anyone is invited to read the application and other documentation in this case (including the report on the environmental impact assessment of the project) from the date of public announcement, at the headquarters of the Regional Directorate of Environmental Protection in Wrocław, pl. Powstanców Warszawy 1, Room 3018 hours from 9:00 to 15:00. They also mentioned that anyone can submit comments and proposals regarding the proposed activity in writing at the above address, verbally to the protocol or in electronically to: sekretariat@rdos.wroclaw.pl from 24 June 2010 till July 14, 2011 (inclusive), and the authority competent to examine the comments and proposals is the Regional Director for Environmental Protection in Wrocław. Also, it has been announced that the comments and proposals submitted after the deadline would remain unexamined.

Pursuant to the provisions of the Article 3 paragraph 1, point 11 of the EIA Act, information about the planned operation has been made public through:

- notice board in the Regional Directorate for Environmental Protection in Wrocław,
- Public Information Bulletin of the Regional Directorate for Environmental Protection in Wrocław (www.wroclaw.rdos.gov.pl),
- notice board in the City Hall in Wrocław,
- notice board in the Municipal Office Długoleka,
- notice board and www page of the DZMiUW. Announcement at the place of the planned project by displaying the notice on the notice boards in: Swojczyce, Strachocin, Wojnow, Psie Pole, Kowale, Kłokoczyce, Soltysowice, Polanowice, Swiniary, Widawa and Zgorzelisko as well as: Krzyzanowice, Paniowice, Psary, Szewce, Szymanow and Wilczyce,
- through a notice in the press - in Lower Silesia supplement to *Gazeta Wyborcza* and also on the website and in the notice board in the Lower Silesia Board of Amelioration and Water Structures in Wrocław.

In the course of the proceedings, 4 motions were submitted: Mayor of the village of Paniowice, "My Paniowce" - Association for the Development of Paniowce, Mayor of the

village of Kotowice, Mayor of the Municipality of Oborniki Slaskie. The applicant (the Lower Silesia Board of Amelioration and Water Structures in Wroclaw) responded to the submitted motions and remarks supplementing the Environmental Impact Report and organized a meeting with inhabitants of the villages of Paniowice and Kotowice.

According to the stipulations of art. 10 § 1 of Administrative Proceedings Code, by the announcement on 30 December 2011 the Regional Directorate for Environmental Protection in Wroclaw informed the parties on collection of all the evidence material on issuing the decision on environmental conditions for the project under consideration. The parties were informed on the possibility to become acquainted with all the material gathered in this case and the possibility to make comments and conclusions as to the collected evidence. All the documents were available for inspection at the registered office of the Regional Directorate for Environmental Protection in Wroclaw, 1 Powstancow Warszawy Street, 50-951 Wroclaw. Based on the principle specified in article 36 § 2 of Administrative Proceedings Code, RDOS informed that - due to the need to obtain all the confirmations and information on the dates of placement and removal of notices issued in the present case at notice board, the case would not be processed within the statutory time limit - the decision will be issued immediately but no later than within 21 days from the date of delivery of information on the evidence material gathered in the case to the parties. On 31.02.2012 RDOS issued a decision on the environmental conditions for the Works Contract under consideration (the letter no. WOOS.4233.1.2011.LCK). The decision was also made public through its public announcement. On 23.02.2012 "My Paniowce" - Association for the Development of Paniowce brought an appeal against the above-specified Decision to the General Director of Environmental Protection. The General Director of Environmental Protection, after examining the EIA procedure, issued a resolution on 17.04.2012 stating a lapse of the term to submit an appeal from the above-specified environmental decision. The resolution issued by the General Director of Environmental Protection is final, thus the decision has become final.

8.3. PUBLIC CONSULTATION OF EMP (2012)

In accordance with the of the World Bank (OP 4.01) Operational Policy draft of present document shall be subjected to public consultation.

Electronic version of the draft of Environmental Management Plan should be posted on publicly accessible websites (www.dzmiuw.wroc.pl or www.programodra.pl), while the printed document should be made available to those who are interested.

Detailed information regarding the possibility of reading this document and the possibility of submitting requests and comments [including detailed contact data (e-mail, address of the

place where people can read the draft of EMP, operational hours, phone numbers)] should be published in local press as well as at the Project Implementation Unit's (PIU) website.

After the period of 21 days from EMP draft's publication a meeting is held for those interested (concerned). There is Project presentation and discussion regarding all environmental issues. During the meeting all questions and remarks previously sent via e-mail or asked by phone are to be read out and answered.

During the meeting new questions and comments are collected, and if the answer involves too much time, the answer is to be sent by mail or e-mail in 7 days' time to the contact data provided by the person asking. The minutes from the meeting are sent to the World Bank.

The relevant comments raised by the public, shall be incorporated into in the EMP document and the final version is then to be prepared. The final version of EMP is also sent to the World Bank for the "no objection" clause.

8.4. DOCUMENTATION

In accordance with OP/BP 4.01, the national disclosure of the draft of Environmental Management Plan (EMP) started on November 27th 2012, when public consultations were announced in daily newspaper "Gazeta Wroclawska".

A public announcement invited the public, authorities and relevant institutions to have an insight into the draft of EMP for the Works Contract B3-1. EMP was made public for 21 days (28.11.2012 - 18.12.2012) on web site the ODRA PROGRAMME - 2006 (www.programodra.pl) and also placed on DZMiUW web site (www.dzmiuw.wroc.pl). In addition, information about the EMP was sent to the Commons and the Council of Settlements located in the area of Project realization. Printed version of the EMP Draft was available for examination in the premises of Project Office Podwale 62 room 103, on working days from 8.30 a.m. to 3.30 p.m.

On the 19th December 2012 at 4:00 p.m. in the conference room of Lower Silesia Medical Association in Wrocław open public meeting was held on the public consultation on the Draft of Environmental Management Plan (EMP) for the Contract Works B3-1 "Section: Odra - Widawa Weir - to the railway bridge (Krzywoustego Street)" implemented within the Wrocław Floodway System Modernization as a part of the Odra River Basin Flood Protection Project.

The public debate was opened by Mrs. Anna Sieradzka Director of WFS Project Department, who is representing the Employer - Lower Silesia Board of Amelioration and Water Structures in Wrocław. After a brief greeting, Mrs. Anna Sieradzka presented the purpose and plan of the meeting. Furthermore Mrs. Anna Sieradzka encouraged to ask questions after the presentations and informed to take prepared forms for possible questions.

Presentation of the Draft of Environmental Management Plan (EMP) for the Contract Works B3-1 "Section: Odra - Widawa Weir - to the railway bridge (Krzywoustego Street)" was delivered by the Consultants representative - Mr. Adam Rak - Environmental expert. Mr. Adam Rak brought the audience the purpose and contents of the Environmental Management Plan prepared in accordance with the guidelines of the World Bank, as well as information on implemented Contract B3-1 i. e. among others its location, the project alternatives, environmental impact both during the implementation, as well as in exploitation time. During the presentation, Mr. Adam Rak paid special attention to the mitigation measures, the scope of monitoring and obligations arising from them during the execution of works contract to the Contractor, the Engineer (the Consultant of Technical Assistance) and the Beneficiary (also in the period after investment implementation). It was stressed that in the whole period from the publication of the notice of publicity of the Draft Environmental Management Plan (EMP) there was the opportunity to familiarize with this document. This document was opened for an inspection at the office of the Consultant from 28.11.2012 to 18.12.2012.

After the presentation, Mrs. Marta Rak (V-ce Project Manager), informed that within the applicable 21 days period which allows for the questions to the publicized Draft of Environmental Management Plan, no questions have been received. However, there is a great public interest in this document. Several people appeared in person at DZMiUW to review displayed printed EMP. The attention of those people was focused primarily on obtaining the information regarding the scope of the projects proposed for implementation.

At the same time Mrs. Marta Rak asked the audience for questions, concern and comments that need to be clarified, by writing them down on the prepared forms.

In response to this request one of the participants in the debate asked about the scope of the works which will be realized in the area of Wilczyce settlement (buildings situated on the left bank of the Widawa River – backwater area). Will there be refurbished weir on Mlynówka and whether the work will be carried out on Kanál Graniczny (connected with its patency). However, he has not formulated the question in writing.

In reply to this question it was explained that on the left bank of the Widawa River (in the backwater area) will be modernized the existing embankment (WFS structure no. 45.1). However, the scope of work of the Wrocław Floodway System does not include the repair of the said weir and the patency of Kanál Graniczny.

The issue raised during the debate does not cause changes to EMP.

DZMiUW **Inwestycje** **Przetargi** **Zatrudnienie** **Galeria** **Kontakt**

Szukaj...

Strona główna » Ogólne » Obwieszczenie o udostępnieniu do wglądu wszystkim zainteresowanym PROJEKTU PLANU ZARZĄDZANIA ŚRODOWISKIEM dla Kontraktu na roboty B3-1 "Odcinek: Przelew Odra-Widawa do mostu kolejowego (ul. Krzywoustego)"

DZMiUW

Strona główna

Dyrekcja

Oddziały

Działy

Inspektoraty

Informacje podstawowe

Schemat organizacyjny

Mapa obszaru działania

Elektroniczna Skrzynka Podawcza

Obwieszczenie o udostępnieniu do wglądu wszystkim zainteresowanym PROJEKTU PLANU ZARZĄDZANIA ŚRODOWISKIEM dla Kontraktu na roboty B3-1 "Odcinek: Przelew Odra-Widawa do mostu kolejowego (ul. Krzywoustego)"

Wpłany przez Andrzeja Piotrowski



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Wrocław, 27.11.2012r.

Informacje

Ogólne

Inwestycje

Informacja Publiczna

Treść ustawy

Wzór wniosku

Przetargi

Przetargi

Informacje

Pliki

OBWIESZCZENIE

Zgodnie z wymaganiami Banku Światowego (polityka operacyjna OP 4.01¹), instytucja współfinansującej realizację Projektu Ochrony Przeciwpowodziowej Dorzecza Odry

podaje się do publicznej informacji, co następuje:

Dolnośląski Zarząd Melioracji i Urządzeń Wodnych we Wrocławiu (DZMiUW we Wrocławiu) udostępnił do wglądu wszystkim zainteresowanym PROJEKT PLANU ZARZĄDZANIA ŚRODOWISKIEM dla Kontraktu na roboty B3-1 „Odcinek: Przelew Odra-Widawa do mostu kolejowego (ul. Krzywoustego)” realizowanego w ramach Projektu Modernizacji Wrocławskiego Węzła Wodnego (Komponent B3).

Każdy zainteresowany może:

A) zapoznać się z PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM przez 21 dni od dnia opublikowania niniejszego obwieszczenia: w siedzibie Biura Projektu ul. Podwale 62 lok. 103 – pokój 10 w dniach roboczych od godziny 8.30 do 15.30 lub poprzez stronę WWW pod adresem: www.dzmiuw.wroc.pl lub www.programodra.pl.

B) składać uwagi i wnioski odnośnie PROJEKTU PLANU ZARZĄDZANIA ŚRODOWISKIEM w formie pisemnej pod w/w adresem, ustnie do protokołu lub w formie elektronicznej na adres e-mail: wwwpiu@dzmiuw.wroc.pl w dniach od 28.11.2012 do 18.12.2012 (włącznie). Instytucją właściwą do rozpatrzenia uwag i wniosków jest DZMiUW we Wrocławiu.

Po 21-dniowym okresie udostępnienia do wglądu PROJEKTU PLANU ZARZĄDZANIA ŚRODOWISKIEM tj. w dniu **19.12.2012 o godzinie 16.00** w Sali Konferencyjnej przy ulicy Matejki 6 (budynek Dolnośląskiej Izby Lekarskiej) odbędzie się spotkanie otwarte dla wszystkich zainteresowanych, na

Public Consultation announcement on the web site of DZMiUW

Oficjalna strona Pełnomocnika Rządu do Spraw Programu dla Odry ...

<http://www.programodra.pl/ramka.htm>

Informacje

Projekt Planu Zarządzania Środowiskiem dla kontraktu na roboty B3-1 w ramach modern. Wrocławskiego Węzła Wodnego

Aktualizacja Programu dla Odry-2006

System Informacji Przestrzennej Dorzecza Odry - system wspomagający pracę Pełnomocnika, pracowników oraz jednostek realizujących "Program dla Odry-2006"

SIPDO
System Informacji Przestrzennej Dorzecza Odry

Obszar działania Pełnomocnika



Projekt Planu Zarządzania Środowiskiem dla Kontraktu na roboty B3-1 realizowanego w ramach modernizacji WWW



DOLNOŚLĄSKI ZARZĄD MELIORACJI I URZĄDZEŃ WODNYCH
we WROCŁAWIU
50-333 Wrocław, al. Jana Matejki 5
Tel.: 071-322-66-81 do 83
Fax: 071-322-79-29
NIP: 898-20-33-668
www.dzmiuw.wroc.pl
dzmiuw@dzmiuw.wroc.pl
REGON: 932964788
Wrocław, 27.11.2012r.

OBWIESZCZENIE

Zgodnie z wymaganiami Banku Światowego (polityka operacyjna OP 4.01¹), instytucji współfinansującej realizację Projektu Ochrony Przeciwpowodziowej Dorzecza Odry

podaje się do publicznej informacji, co następuje:

Dolnośląski Zarząd Melioracji i Urządzeń Wodnych we Wrocławiu (DZMiUW we Wrocławiu) udostępnił do wglądu wszystkim zainteresowanym PROJEKT PLANU ZARZĄDZANIA ŚRODOWISKIEM dla Kontraktu na roboty B3-1 „Odcinek: Przebieg Odra-Widawa do mostu kolejowego (ul. Krzywoustego)” realizowanego w ramach Projektu Modernizacji Wrocławskiego Węzła Wodnego (Komponent B3).

Każdy zainteresowany może:

A) zapoznać się z PROJEKTEM PLANU ZARZĄDZANIA ŚRODOWISKIEM przez 21 dni od dnia opublikowania niniejszego obwieszczenia: w siedzibie Biura Projektu ul. Podwale 62 lok. 103 – pokój 10 w dniach roboczych od godziny 8.30 do 15.30 lub poprzez stronę WWW pod adresem: www.dzmiuw.wroc.pl lub www.programodra.pl

B) składać uwagi i wnioski odnośnie PROJEKTU PLANU ZARZĄDZANIA ŚRODOWISKIEM w formie pisemnej pod w/w adresem, ustnie do protokołu lub w formie elektronicznej na adres e-mail: wwwpiu@dzmiuw.wroc.pl w dniach od 28.11.2012 do 18.12.2012 (włącznie). Instytucją właściwą do rozpatrzenia uwag i wniosków jest DZMiUW we Wrocławiu.

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Wzrost: 170cm, waga: 70kg, data urodzenia: 1978-01-10, adres: 50-333 Wrocław, al. Jana Matejki 5, telefon: 071-322-66-81, e-mail: dzmiuw@dzmiuw.wroc.pl, REGON: 932964788

Dokumenty

Informacja i Sprawozdanie za 2011 r.

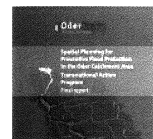
Inicjatywy Pełnomocnika

OdraRegion
Polska, 10.11.2012



Inne projekty

OderRegio
INTERREG IIB Cadmus



Public Consultation announcement on the web site of 'Program for Odra 2006'

REKLAMA

DOLNOŚLĄSKI ZARZĄD MELIORACJI I URZĄDZEŃ WODNYCH we WROCŁAWIU
50-333 Wrocław, al. Jana Matejki 5
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REGON: 932964788

OBWIESZCZENIE Z DNIA 27.11.2012

Zgodnie z wymaganiami Banku Światowego (polityka operacyjna OP 4.01¹), instytucji współfinansującej realizację Projektu Ochrony Przeciwpowodziowej Dorzecza Odry podaje się do publicznej informacji, co następuje:

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¹ treść dostępna pod adresem:
<http://web.worldbank.org/WS/EXTERNAL/PROJECTS/EXT/POPCIES/EXTOPMANUAL/0,contentMDK=20064724~menuPK=64701763~pagePK=6470086~piPK=64709108~theSitePK=502184,00.html>

Projekt Ochrony Przeciwpowodziowej Dorzecza Odry

LOWER SILESIA BOARD OF AMELIORATION AND WATER STRUCTURES IN WROCLAW
50-333 Wrocław, al. Jana Matejki 5
Tel.: 071-322-66-81 do 83
Fax: 071-322-79-29
NIP: 898-20-33-668
www.dzmiuw.wroc.pl
dzmiuw@dzmiuw.wroc.pl
REGON: 932964788

NOTICE DATED 27th NOVEMBER 2012

In accordance with the requirements of the World Bank (Operational Policy OP 4.01¹), co-financing institution of the Odra River Basin Flood Protection Project

shall be made public consultation as follows:

Lower Silesia Board of Amelioration and Water Structures in Wrocław (DZMiUW in Wrocław) made available for inspection by all interested DRAFT of ENVIRONMENTAL MANAGEMENT PLAN for the Works Contract B3-1 "Section: Odra – Widawa Weir – to the railway bridge (Krzywoustego Street)" Implemented in the frame of Modernization of Wrocław Floodway System Project (Component B3).

Any interested person/organization could

A) acquaint with the DRAFT of ENVIRONMENTAL MANAGEMENT PLAN during 21 days from the date of publication of this notice: in the premises of Project Office Podwale 62 No. 103 - room 10, on working days from 8.30 a.m. to 3.30 p.m., or on the Web page at: www.dzmiuw.wroc.pl or www.programodra.pl.

B) to apply comments and proposals regarding the DRAFT of ENVIRONMENTAL MANAGEMENT PLAN in writing, the address mentioned above, verbally to the record or in electronic form by e-mail: wwwpiu@dzmiuw.wroc.pl from 28.11.2012 to 18.12.2012 (inclusive). Competent to consider the comments and proposals is DZMiUW in Wrocław.

After a 21-day period of the public consultation to the DRAFT of ENVIRONMENTAL MANAGEMENT PLAN i.e. on 19.12.2012 at 4:00 p.m. in the Conference Room on the street Matejki 6 (building of Lower Silesia Chamber of Physicians) will take place a meeting open to all interested parties, on which will be presented information about DRAFT of ENVIRONMENTAL MANAGEMENT, will also take place a public discussion of the comments and proposals requested before or during this meeting connected with this document.

¹ See website:
<http://web.worldbank.org/WS/EXTERNAL/PROJECTS/EXT/POPCIES/EXTOPMANUAL/0,contentMDK=20064724~menuPK=64701763~pagePK=6470086~piPK=64709108~theSitePK=502184,00.html>

Odra River Basin Flood Protection Project

Public Consultation announcement in the daily newspaper Gazeta Wroclawska



Picture 1: Public Consultation in Conference Room in 6 Matejki Ave. (office of Lower Silesia Chamber of Physicians) December 19, 2012 (photo by Consultant)



Picture 2: Public Consultation in Conference Room in 6 Matejki Ave. (office of Lower Silesia Chamber of Physicians) December 19, 2012 (photo by Consultant).

9. INSTITUTIONAL ARRANGEMENTS OF EMP IMPLEMENTATION

The project comprising the Works Contract B3-1, which is a subject of this EMP, is a part of Odra River Basin Flood Protection Project co-financed by the World Bank (as Component B3 ORFPP) for the flood protection structures under management of DZMiUW in Wrocław. Therefore the structure of the supervision of EMP implementation must comply both with the requirements of the World Bank and the requirements of Polish legislation. This structure is shown in Diagram 9-1.

9.1. OFFICE FOR THE COORDINATION OF ODRA RIVER BASIN FLOOD PROTECTION PROJECT

Project Coordination Unit (PCU) is responsible for the overall coordination of the implementation of the various parts of EMP for ORFPP, and it is currently a unit budgeted and governed by the Head of the National Authorities for Water Management, and also supervised by the Ministry of the Interior and Administration (for implementation of the part of Project under the competence of DZMiUW in Wrocław). PCU is, among other tasks, responsible for:

- cooperation with the Ministry of Finance, Ministry of Administration and Digitization, Ministry of the Environment, National Authorities for Water Management and other government agencies and local governments related to the implementation of ORFP Project and operation of the Steering Committee;
- coordination between Project Implementation Units and support for those units in the implementation of EMP;
- monitoring and evaluation of progress in the implementation of EMP;
- ongoing cooperation with the World Bank and Council of Europe Development Bank, including the preparation of quarterly reports on the implementation of ORFP Project to these institutions.

9.2. M&E CONSULTANT

In order to monitor and evaluate the impact of the Project, including implementation and monitoring of environmental management plan and relocation plan, PCU appointed the Consultant for Monitoring and Evaluation (M&E Consultant). Their scope of activities includes:

- supervision over the management of natural environment and social environment protection activities;
- developing of environment management plans monitoring system;

- developing and ongoing support for IT Project Information and Monitoring System available via the Internet;
- monitoring of EMP implementation (taking care of implementation of a full scope of EMP procedures and actions, including the issue of dealing with incidental archaeological finds), Environmental Evaluations, Population Evaluations, Plan of Acquisition of Rights to Dispose of Properties for the Implementation of the Project;
- support for PCU in the implementation of the Components being under the responsibility of PCU.

M&E Consultant shall also evaluate the success in the implementation of the Project in terms of its objectives, as well as estimate physical, hydrological, environmental, social and economic impact of the Project.

9.3. PROJECT IMPLEMENTATION UNIT

Project Implementation Unit (PIU), as a separate organizational division of the entity (DZMiUW in Wroclaw), is directly responsible for implementation of EMP for the works contract and monitoring of progress in the implementation. The work and operation of the PIU are supervised under the authority of the Director of DZMiUW in Wroclaw by Measure Authorizing Officer (MAO).

Project Implementation Unit was established within the structure of DZMiUW in Wroclaw on 20.09.2007, by an Ordinance No. 114/2007 by the Director of DZMiUW in Wroclaw (under the name: Odra River Basin Flood Protection Project Implementation Unit). It is a separate organizational unit under the direct supervision of the Director. Such structure is very clear and has a very high level of decision making, which increases the efficiency of the implementation of the Project.

PIU performs the following tasks under the supervision of the EMP implementation:

- monitoring of EMP implementation progress;
- financial management and accounting;
- preparing the necessary reports to control EMP implementation and coordination of the implementation by all services involved in EMP;
- final implementation of EMP.

Under the supervision of EMP implementation, MAO performs the following tasks:

- administration, finance, technical and substantial management;
- monitoring of EMP implementation.

Responsibilities of PIU personnel supervising implementation of EMP are as follows:

- management, coordination and supervision of EMP monitoring implemented by the Consultant and the Works Contractors;

- direct supervision of proper execution of tasks;
- supervision of EMP reporting;
- cooperation with PCU, RZGW in Gliwice and RZGW in Wroclaw;
- cooperation with departments of DZMiUW in Wroclaw supporting PIU;
- creating the conditions for and general supervision of storage of all documents related to the implementation of EMP;
- risk management of the of Project implementation, in cooperation with the Consultant and the Contractors;
- administrative and legal supervision of EMP implementation;
- collecting and archiving of documents related to the implementation of EMP;
- preparation of legal analysis related to the implementation of EMP;
- review of Reports of implementation of EMP prepared by the Consultant and the Contractors;
- financial oversight of EMP implementation;
- financial monitoring of EMP implementation according to the Financial Schedule for the project and time schedules prepared by the Contractors;
- cooperation with other units of DZMiUW in Wroclaw which are participating in the implementation of EMP;
- technical supervision of EMP implementation;
- preparation and update of Project Implementation Schedule;
- development of Project Financial Schedule;
- supervision of the proper application of formal procedures in implementation of EMP, resulting from the provisions of Construction Law, Contracts for Works, Environmental Protection Law, and others;
- participation in coordination meetings in the course of implementation of EMP and particular projects, and participation in site meetings, including meetings with the designers and the holders of copyright;
- participation in partial and final handovers.

In order to ensure effective supervision of EMP implementation throughout the entire project, PIU will be supported in their actions by other organizational units of DZMiUW in Wroclaw and by the Consultant Engineer.

9.4. ENGINEER

Engineer's role is to support DZMiUW in Wroclaw in the successful completion of the entire investment process (from the preparation of the design to settlement of the accounts) of

Modernization of Wroclaw Floodway System implemented parting the scope of tasks to be implemented by DZMiUW in Wroclaw.

Engineer was selected by QCBS method (quality and cost based selection), in accordance with "Guidelines for Selection and Employment of Consultants by World Bank Borrowers".

The contract for consulting services shall be implemented from October 2010 until the end of April 2015. It obliges the Engineer to supervise the implementation of EMP. Scope of activities carried out under the supervision includes:

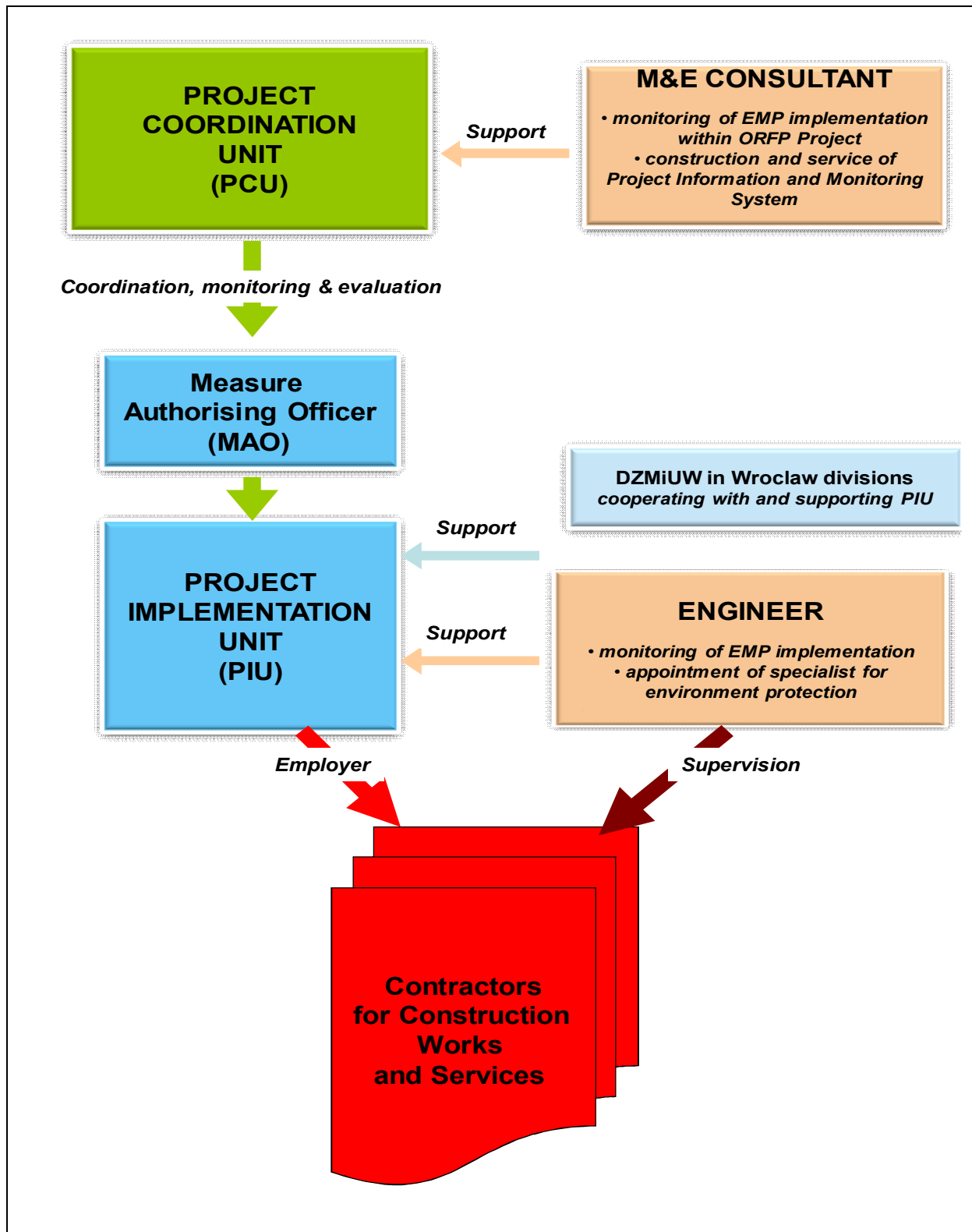
- monitoring of EMP accepted by the Contractor;
- monitoring of actions of the Contractor;
- quality check of the works performed by the Contractor of construction works and built-in construction elements, in particular the preventive action concerning the use of defective construction materials and products which are not authorized for use in the construction process;
- representing DZMiUW in Wroclaw at the construction site by exercising control of compliance of the project implementation with the building design and Construction Permit, regulations regarding environmental protection and the principal technical knowledge;
- supervision of all aspects related to environmental protection by experienced specialists in the field of environmental protection;
- continuous monitoring of the proper implementation of measures to minimize and compensate the negative impact on the environment;
- preparation of monitoring reports of the proper implementation of measures to minimize and compensate the negative impact on the environment by the end of each quarter of the year, and submission of the reports to Regional Director for the Environment Protection in Wroclaw;
- additional investigations in case of the necessity for verification of the reports of the Contractor;
- identification of the problems resulting from adverse environmental impact of construction works and submission of proposed solutions to these problems;
- checking and handover of construction works subject to covering or temporary works, taking part in testing and technical handovers of installations and technical equipment, and preparation and participation in activities related to handover of complete buildings structures;
- confirmation of works actually carried out and rectification of defects, and control over settlements of the construction works at the request of the Employer.

9.5. CONTRACTORS

In order to carry out construction works it is necessary to appoint the contractors for works. The responsibilities of the contractors in this area include:

- carrying out the construction works in compliance with the principles set out in the EMP, and in accordance with applicable law and requirements of the administrative decisions for the project;
- implementation of the Engineer's recommendations (including those of specialists in environmental protection and inspectors) regarding implementation of EMP;
- ensuring the preparation of Health and Safety Plan prior to commencement of construction works;
- taking over of the site from the Employer and appropriate protection of the construction site, including building structures located on site, technical equipment and site pegs, as well as natural environment and cultural heritage elements under protection;
- keeping records of construction;
- preparing minutes of the site inspections, monthly reports and reports on inspections;
- preparing forms for environmental reports;
- suspension of construction works in case of possible danger and immediate notifying the Engineer and state regional construction inspector;
- application to DZMiUW Wroclaw for changes to the design, if justified by the necessity for increase of safety of construction works or for improvement of the construction process in relation to the implementation of EMP;
- notifying the Employer of testing or handover or works subject to covering up, and ensuring the completion of tests and checking of the services required by regulations and the Contract, prior to reporting the readiness of any building structure for the handover;
- preparation of as-built documents and drawings;
- ensuring completion of rectification work.

Diagram 9-1. Diagram of the structure for EMP implementation (as part of ORFP Project).



10. IMPLEMENTATION SCHEDULE AND REPORTING PROCEDURES

Implementation of Environmental Management Plan will entail a number of benefits both in environmental and social terms. Long-term negative impacts will be significantly reduced thanks to the implementation of its objectives, and in return, a number of long term positive actions will emerge.

Benefits of the Plan implementation will be particularly evident in the improvement of the environment, achieved through the use of process modifications. The result of the action will be the improvement of functioning of ecological corridors connected with the river valley, very important for the functioning of ecological links and Natura 2000 sites. Compensatory measures and monitoring during the execution of the Works Contract and after its completion will encourage formation of diverse habitats typical for a river valley.

The actions taken in the scope of the Plan shall allow the realization of the hydrological objectives whose priority is to lower the levels of water within the range of bank-full stages, which shall enhance the safety of the inhabitants of the flood risk area, including the people who experienced the flood of 1997.

Implementation of the EMP shall enable those involved to prepare, implement and supervise the project:

- identification of various environmental aspects with significant impact on the environment, so that they can be controlled, corrected, decreased and as a result bearing economic impact;
- correction of adverse effects of works during the implementation with beneficial impact on the environment and financial performance;
- definition of objectives and tasks implemented as part of adopted environmental policy, subject of EMP, which require input and produce measurable results;
- identification and elimination of potential risks and failures, prevention and elimination of environmental impacts which could be associated with them and could lead to losses disproportionate to the cost of preventive measures;
- rational use of natural resources with minimal losses to the environment and optimum cost generation.

In addition, the implementation of recommendations and actions arising from the EMP can reduce and even eliminate the risk of the project, in particular:

- risk of omitting environmental protection concerns in the process of the implementation of tasks by the Contractor,
- risk of escalation of protests by the local residents due to non-compliance with the works technologies and environmental procedures approved by the Engineer,
- risk of additional environmental penalties,

- risk of additional environmental losses.

Having regard to the importance of the issues defining environmental and social conditions, the following procedures for implementation of the Environmental Management Plan (EMP) are provided for:

1. Prior to appointment of the Contractor of the Works, the Engineer-Consultant submits a draft of the present Environmental Management Plan (EMP) to the World Bank for its opinion,
2. Then Environmental Management Plan (EMP) is to be subject to social consultation,
3. After the social consultation (complement of the Environmental Management Plan with the consultation results), Environmental Management Plan is to be completed and passed in its final version for WB's no objection,
4. After the approval by the World Bank, the final document is to be transferred to the Contractor of the works in order to develop their own Environment Management Plan. The plan will be subjected to control and approval by an independent Engineer-Consultant.
5. All the actions of the Contractor of the Works are to be reported in regular intervals (monthly) both in Polish and English in paper and electronic form in respect of their obligations under the Environmental Management Plan (EMP) and other contract documents. These reports are to be approved by the Engineer and the Beneficiary Party.

Moreover the environmental conditions impose additional supervision and reporting:

II.2.1¹ At the performance of the investment - conduct - with the participation of specialists - constant natural supervision considering the proper accomplishment of preventive and minimizing measures in reference to the protected natural habitats as well as the species of fauna and flora. The supervision should include:

- 2.1.1 Pre-implementation monitoring conducted by an entomologist in terms of the location of occurrence of (among others) places and populations of the protected species of insects.
- 2.1.2 Pre-implementation monitoring conducted by a chiropterologist in order to identify the potential living places of bats.
- 2.1.3 Monitoring (by specialists in the field of zoology and botany) of the occupation of the area and the correctness of the executed works within and in the direct vicinity of the protected natural habitats as well as the habitats of the species of plants and animals.

¹ Number II.2.1 as described in the Environmental Decision WOOS.4233.1.2011.LCK

- 2.1.4 Supervision of an ichthyologist at the conduct of works at the section in the proximity of the habitat of occurrence of Ray-finned fish *Sabanejewia aurata* (1146).
 - 2.1.5 Supervision of a zoologist or herpetologist covering the monitoring of occurrence of amphibians and reptiles at the area(s) of the conducted building / construction works.
 - 2.1.6 In case of statement of low effectiveness of the introduced minimizing measures in the course of such supervision, immediately develop appropriate modifications with the participation of specialists and implement them.
 - 2.2 Every year at the peaks of growing seasons of the species - within 2 years from the time of moving plants - with the participation of a botanist - examine the state of the protected plants moved from the area of the investment.
 - 2.3 For a period of 5 years at least from the completion of works at particular WFS structures - with the involvement of a specialist - phyto-sociologist - conduct the monitoring of the natural habitats. The monitoring should include: spatial range of these habitats, extent of their structure formation, state of their preservation, forms of degeneration, presence of characteristic species and observed changes of these features.
 - 2.4 For a period of at least 5 years from the completion of works at particular WFS structures - with the involvement of specialists in the field of botany and zoology - conduct the monitoring of the protected species of plants and animals covering the occurrence of the species and the conservation status of their populations. The monitoring should be conducted at growing seasons.
 - 2.5 For a period of at least 5 years from the completion of works at particular WFS structures within the investment - conduct - by trained people - annual monitoring of the occurrence of invasive plants, including thickets of knot-weed (*Reynourtia* spp). In case of observing the occurrence of any positions of invasive plants (shoots and seedlings) - take appropriate remedial measures to eliminate the identified positions and to prevent its further spread.
- Submit the results of the monitoring with the assessment and analysis carried out by specialists to the Regional Director of the Environmental Protection in Wroclaw till 31 January of every year following the year of observation.

The scope of the report is specified by the Consultant upon positive acceptance of PCU and DZMiUW (the Lower Silesia Board of Amelioration and Water Structures in Wroclaw). The

Consultant will specify the types of reports (initial, periodic - monthly and quarterly, ad hoc, closure) and deadlines for their preparation.

The following reporting procedures are established:

1. Reporting:

- 1.1 Reports (initial, monthly and quarterly, closure) drawn up by the Contractor of the works and approved by specialists,
- 1.2 Checking the reports by the Consultant,
- 1.3 Submission of the reports for approval (opinion) of PCU and DZMiUW,
- 1.4 Submission of the reports to the Regional Director for Environmental Protection.

2. Archiving:

- 2.1 Contractor: 1 copy of each report in an electronic version for 5 years from the date of termination of the works,
- 2.2 Consultant: 1 copy of each report in an electronic version for 5 years from the date of termination of the project,
- 2.3 DZMiUW: 1 copy of each report in an electronic version for 5 years from the date of termination of the project.

3. Evaluation: current evaluation of the results of the planned actions arising from the Environmental Management Plan (EMP). Current analysis of documentation (Contractor's Reports) by the Engineer. Delivery (to the Beneficiary Party) of reliable data and information on the course of the building process with particular consideration of the implementation of actions aimed at mitigating negative impacts on the environment and recommendations resulted from Environmental Decisions. The following is planned:

- Ex-ante evaluation: The report prior to the implementation of the contract for works (Engineer's Report)
- Current evaluation: Engineer's Quarterly Reports,
- Ex-post evaluation: The report upon the implementation of the contract for works (Engineer's Report).

11. REFERENCE

1. Environmental Impact Assessment Report for works contracts named: *"Construction of flood protection objects/facilities for City of Wroclaw as part of activities related to Modernization of Wroclaw Floodway System for flood relief through the Widawa Transfer as well as embankments located in the Widawa River valley together with bridges"* - prepared by the author's team edited by A. Rak, M. Lenartowski, A. Wleklinska,
2. Environmental Conditions Decision dated 31 January 2012 (signature WOOS. 4233.1.2011.LCK) for works contracts *"Construction of flood protection objects/facilities for City of Wroclaw as part of activities related to Modernization of Wroclaw Floodway System for flood relief through the Widawa Transfer as well as embankments located in the Widawa River valley together with bridges"*, issued by RDOS in Wroclaw,
3. Flood Protection Project for the Odra River Basin - General Environmental Impact Study, Main Report, 2005, Summary, Government of the Republic of Poland, RZGW Gliwice, RZGW Wroclaw, DZMiUW. July 2005,
4. Feasibility Study for modernization of the Wroclaw Floodway System in scope of flood protection structures realised by Lower Silesia Board of Amelioration and Water Structures in Wroclaw (DZMiUW): prepared by Joint Venture consists of: Grontmij Polska Sp. z o.o., 35 Ziebicka St., 60-164 Poznan, Poland, Grontmij Nederland B.V., De Holle Bilt 22, 3732 HM De Bilt, P.O. Box 203, 3730 AE De Bilt, Holandia, Sogreah Polska Sp. z o.o., 50 Nowogrodzka Str. Office 137, 00-695 Warszawa, Poland, Sogreah Consultants SAS, 6 rue de Lorraine, 38130 Echirolles, Francja, Ekocentrum Sp. z o.o., 35/1 Budziszynska Str., 54-434 Wroclaw, Poland, 2011.

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APPENDICES

Appendix 1 - Check List - Mitigation Plan

Appendix 2 - Check List - Monitoring Plan

Appendix 3 - Main Polish Legislation

Appendix 4 - Environmental Decision

Appendix 5 - Locality Map

Appendix 6 - Description, location and significance of natural objects

Appendix 7 - List and description of habitats' and species' resources in area of works contract impact

Appendix 8 - Summary of mitigation and compensation measures

8.1 Methods for minimizing the impact of the Works Contract on natural habitats and species protected under the Natura 2000 areas “ Grady "Grady w dolinie Odry"

8.2 . Summary of impacts on species and habitats located in the region, of Works Contract and methods for minimizing the impact of the Works Contract

8.3. Summary of interactions that require the implementation of compensation and how it is carried out

**Appendix 1. Check List -
Mitigation Plan**

APPENDIX 1. CHECK LIST - MITIGATION MEASURES PLAN

Table 1. Plan of mitigation measures for Works Contract B 3-1 Section: Odra - Widawa Weir - to the railway bridge (Krzywoustego Street) WFS structures No.: 40,41.1,41.2,41.3,42.1,42.1.1,44.1,44.11,44.12,44.13,44.2,44.3,45.5,45.1,45.2,45.6,46.1.

ATTENTION:

- The Natura 2000 site "**Grady w Dolinie Odry**" is located partly in the area of the works which will be carried out. Another protected area whose boundaries run approximately 5 km is the Natura 2000 "**Dolina Widawy**".
- The Contractor will ensure the environmental supervision of Works according to the statement in the Technical Specification '0'(General requirements) which is the part of the Bidding Documents. Cost of implementing these activities should be included in the Bidder's overall price calculation.
- The following specialists are required for the implementation of site-specific EMP: (i) entomologist (ii) chiropterologist; (iii) botanist (or phytosociologist); (iv) specialist in the field of herpetology, (v) zoologist. They will be engaged in implementation of specific measures I.2.1.16, I.2.1.19, I.2.22,I.2.23,I.2.24,I.2.25,I.2.27,I.2.28,I.2.33,I.2.34 (according to the numbers in the Mitigation Measures Table - Appendix 1 and the Environmental Decision- Appendix 4). Details of the activities are presented in sections 6.1.6 of EMP.
- The above activities will be undertaken before and during the Works Contract B3-1 execution, with detailed schedule for each particular location to be prepared by the Contractor and approved by the Client, in such a way to ensure their successful completion before the start of the construction/rehabilitation works at each specific location.

Location	Issue	Mitigation measures	Institutional responsibility	Notes
Applies to all contract's structures of whole embankment's sections	Top-soil protection	[I.2.1.1] Prior to undertaking substantial levelling works - take off the top of the humus soil layer (to the depth of 30 cm on average) and store in the vicinity of the area covered by the construction, in separate piles secured against drying and mixing with native rock, subject to the condition set out in point I.2.1.19 [I.2.1.3] Do not occupy lands adjacent to the area of implementation of the Works Contract beyond the existing communication system	Contractor	
	Soil erosion	[I.2.1.2] Upon completion of earth works - use the taken-off over-load for		

Location	Issue	Mitigation measures	Institutional responsibility	Notes
	protection	forming slopes of the embankments intended for turf assessment: at the width of 5-10 metres along the embankment and within the reconstructed structures, at one side or both sides of the embankment - spread and level the previously taken-off humus. Within technological lines and places of storage (transport) of building materials - additionally execute all the tillage works: plating with discs, harrowing, fertilising and seeding grass mixtures in accordance with meadow habitats located closest to the site of re-cultivation	Contractor	
	Protection of surrounding environment	<p>[1.2.1.4] Do not locate background facilities of construction sites at areas covered with bushes and trees as well as within protected natural habitats.</p> <p>[1.2.1.5] Prior to starting works at particular tasks within the Works Contract, with the participation of specialists in botany, plant sociology, and zoology, fence off valuable patches of natural habitats and positions of protected plants and animals which are adjacent to the set-out sites of works and designated for their preservation. Execute the fencing in such a manner which is visible for people performing building works and which prevents accidental intrusion into fenced-off patches of natural habitats and positions of plants and animals. Remove the fencing upon the completion of building works.</p> <p>[1.2.1.6] Reduce (as far as possible) the area of damage as a result of building works conducted within valuable natural habitats of species.</p> <p>[1.2.1.7] Modify the technology applied for construction / reconstruction of the embankments consisting in conducting works at the opposite side to natural objects, or alternatively - conducting works at the front or crest of the embankment.</p> <p>[1.2.1.8] Determine the location of technological routes and sites in a manner which ensures: preservation of protected natural habitats, positions and habitats of protected species, preservation of all the tree- and shrub-based vegetation occurring beyond the areas required to be occupied in reference to the modernisation of the existing embankments and construction of new ones.</p> <p>[1.2.1.9] At the determination of location of technological routes and sites at the areas located within the zone of implementation of the Works Contract, the following should be done:</p>	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
		<p>2.1.1 keep all tree and shrub vegetation growing beyond the places required to be occupied in reference to the modernisation of the existing embankments and construction of new ones,</p> <p>2.1.2 set a precise location of technological routes and sites within the boundaries of the zone of implementation of the Works Contract - in co-operation with specialists in the field of zoology and botany, so as not to worsen the ecological status of natural objects located within the implementation.</p> <p>[I.2.1.10] Reduce (as far as possible) the minimum depth of excavations / trenches and shorten (as far as possible) the duration of works.</p> <p>[I.2.1.11] Within the mid-embankment - not to dig up local depressions with a surplus of ground from excavations / trenches.</p>		
	Flora & fauna protection	<p>[I.2.1.12] Apply time constraints at the execution of works in connection with the requirements of conservation of valuable species of flora and fauna.</p> <p>[I.2.13] Apply the principle of protection of natural environmental elements which are important to maintain a proper state of ecological corridors at each of the WFS structures (coverage with woods and shrubs, water reservoirs, oxbow lakes, etc.).</p> <p>[I.2.1.14] Run the modernisation of bridges in a manner which ensures the ecological functionality for animals moving through the valley of the Widawa River (appropriate lighting, dry land at river-bank areas above average water levels, natural character of river-bank areas under the bridges).</p>	Contractor	
		[I.2.1.15] Limit the felling of trees and shrubs to an absolute minimum and perform it within the period from 15 October to the end of February, subject to point I.2.1.16 and I.2.1.29.	Contractor/ specialist entomologist	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
		<p>[1.2.1.16] In case of an intention of felling of trees with their breast height over 50 cm, directly prior to the felling, the following should be performed with the participation of specialists:</p> <ol style="list-style-type: none"> 1. entomologist - a control of the occupancy of these trees by protected species of beetles, such as: Great Capricorn Beetle <i>Cerambyx cerdo</i>, Hermit Beetle <i>Osmoderma eremita</i>, 2. chiropterologist - a control of the presence of bats <p>In case of any collision of the planned works with the positions of the above-specified beetles and the need to cut down trees because of the technical and technological conditions - make a transfer of the above-mentioned animals to another place or places being suitable in respect of habitat requirements of particular species or not threatening to cause losses in the resources of other protected species. Make the transfer in accordance with the terms and conditions specified in the decision of the competent authority issued on the grounds of article 56 of the act dated 16 April 2004 on nature protection.</p> <p>Consult and settle the detailed principles of conduct (on determining places to which appropriately felled fragments of trees will be transferred and a code of conduct with felled trees and particular species individuals) with an entomologist and include the settled solutions in the application (request) for issuing an approval for the destruction of habitats and animals.</p> <p>In cases of statement of the presence of bats in trees to be felled, temporarily suspend felling and implement the chiropterologist's recommendations which are adequate to the current atmospheric situation and identified the species of bats.</p>	Contractor/ specialist entomologist and chiropterologist	
	Flora protection	<p>[1.2.17] Within the whole area of investment, secure all the trees and shrubs designated to be left (including the ones being habitats for Great Capricorn and Hermit Beetle against accidental damage by using the following methods:</p> <ol style="list-style-type: none"> 2.1.17.1 make tree-trunk protection (e.g. made of planks) fully around tree trunks up to the level of 1,5 m at minimum, 	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
		<p>2.1.17.2 make shields around shrubs (e.g. made of planks) up to the level of 1,0 m at minimum,</p> <p>2.1.17.3 make dig-outs / trenches at a distance of not less than 2 m from tree trunks,</p> <p>2.1.17.4 do not store construction materials or solid / liquid waste which can alter the chemical characteristics of soil (e.g. salts, oils, fuels), or soil masses within the projection of tree crests,</p> <p>2.1.17.5 execute earth works manually around skeletal roots. It is unacceptable to undercut skeletal roots,</p> <p>2.1.17.6 in the period of hot weather, maximally reduce the time of exposure of roots to desiccation, while in the period of cold weather (frost) - to freezing.</p>		
	Flora protection	<p>[I.2.1.18] Make dig-outs / trenches (conducted within the root systems of trees and shrubs) manually, if necessary, use drilling or jacking methods.</p> <p>[I.2.1.19] At places being designated as spots of potential occurrence of protected plant species, prior to the start of works - remove a top layer of soil with herbaceous vegetation growing on it and put it at a place secured against destruction - in order to make use of the layer during re-cultivation works. Consult and settle the details of dealing with a layer of soil with a specialist in the field of botany.</p> <p>[I.2.20] In case of any collision of the planned works with the positions of protected species of plants - re-plant the above-specified plants - to another place or places being suitable in respect of habitat requirements of particular species or not threatening to cause losses in the resources of other protected species. Conduct the re-planting in accordance with the terms and conditions specified in the decision of the competent authority issued on the grounds of article 56 of the act dated 16 April 2004 on nature protection.</p> <p>[I.2.1.21] Consult and settle the detailed principles of conduct with protected species of plant individuals specified in point I.2.1.20 (including a selection of technology and places of target re-planting) with a specialist in the field of botany and include the settled solutions in the application (request) for issuing an approval for the re-planting.</p>	Contractor/ with the participation of expert naturalist	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
	Flora protection	[1.2.1.22.1] Prior to the start of construction works - conduct field inspection of places of execution of the works with the participation of a botanist or phyto-sociologist to locate places of occurrence and population of invasive plants (with the exception of Small-flowered Touch-me-not). After conspicuously locating and marking of places which are covered with invasive plants - take preventive measures during implementation of the investment, which will reduce the spread of those plants, including: - take off a layer of humus with invasive plants and remove them from the area of the works for composting or dispose in any other effective manner. It is unacceptable to mix the humus with the native vegetated humus,	Contractor/ with the participation of expert of botany or phyto-sociologist Contractor	
	Flora protection	[1.2.1.22.2] train and supervise persons performing works related to the elimination of invasive plants.	Contractor	
	Fauna protection	[1.2.1.23] In case of any collision of the planned works with the habitats of protected species of animals - make a transfer of the above-specified animals to another places or places being suitable in respect of habitat requirements of particular species or not threatening to cause losses in the resources of other protected species. Make the transfer in accordance with the terms and conditions specified in the decision of the competent authority issued on the grounds of article 56 of the act dated 16 April 2004 on nature protection.	Contractor/ with the participation of specialists in the field of zoology	
		[1.2.1.24] Consult and settle the detailed principles of conduct with protected species of animals specified in point 1.2.1.23 (including a selection of technology and places of target transfers) with a specialist in the field of zoology and include the settled solutions in the application (request) for issuing an approval for the animal transfer.	Contractor/ with the participation of specialists in the field of zoology	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
		[I.2.1.25] At the breeding sites of amphibians - plan construction works so that they should be conducted beyond the breeding season, namely beyond the period from 1 March up to 31 August. Depending on particular species occurring in water bodies (reservoirs) it is allowed to shorten the period referred to above upon consulting a specialist herpetologist. In case of failure to conduct the works beyond the period specified above, it is allowed to make use of solutions securing against the mortality (as a result of the conducted works and traffic) of animals travelling to and from breeding grounds. Technical solutions (e.g. fencing of construction sites with fences or use of traps in the form of grooves in the ground) to perform at sections with their length corresponding to the length of breeding amphibians places and the length not less than 150 meters from the boundaries of these places. Detailed technological and location solutions and principles of handling amphibians to be agreed with a specialist in the field of herpetology.	Contractor/ with the participation of specialist in the field of herpetology	
		[I.2.1.26] The application of methods securing water chambers, trenches, collectors etc. prior to the confinement of minor mammals, amphibians and reptiles within them. Therefore, these components (elements) should be designed to allow individual animals to get out of these structures. If this is impossible, these structures should be secured against the possibility of falling by animals or - at the stage of implementation - these elements should be monitored daily with trapped animals got out and transported beyond the site of works.	Contractor	
		[I.2.1.27] In the vicinity of especially environmentally valuable areas (within any protected areas, forests) - plan any works with their highest noise level in autumn and winter months (second half of October - end of February). Noise caused in the period from March up to July should not exceed 50 dB at a distance of 100 m from the site of works. Also due to the noise, in the period from April to October, any works should not be conducted at night in the vicinity of feeding of bats (large patches of trees, forests, water reservoir) - Greater Mouse-Eared Bat (<i>Myotis myotis</i>), Bechstein's bat (<i>Myotis bechsteinii</i>), Pond Bat (<i>Myotis dasycneme</i>) and Barbastelle Bat (<i>Barbastella barbastellus</i>).	Contractor/ with the participation of specialist in the field of chiropterologist	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
	Fauna protection	[I.2.1.28] In order to protect valuable and rare species of birds (Corn Crane, Lapwing, Eurasian Bittern, Marsh-harrier) - conduct any works with the highest noise levels, planned within and in the close vicinity of their habitats in the period from October to March.	Contractor/with the participation of specialist in the field of ornithology	
		[I.2.1.29] Reduce (as far as possible) felling / cutting down blackthorn brushwood (no grubbing) and perform between 15 July and 15 August under the supervision of specialists: ornithologist and entomologist.	Contractor/with the participation of specialist in the field of ornithology	
		[I.2.1.30] Start works and grubbing bush roots at the positions of cut blackthorn brushwood referred to in point I.2.1.29 at the earliest after 15 September and end by 15 March. Conduct construction / building works at a distance up to 100 m from the blackthorn brushwood - at day-time and with natural lighting only.	Contractor/with the participation of specialist in the field of ornithology	
		[I.2.1.31] In case of no possibility to conduct the activities specified in point 2.1.29 and 2.1.30, perform felling / cutting down under the supervision of a specialist - entomologist. In case of finding eggs of Caterpillar Moth at blackthorn brushwood planned for felling / cutting down, move the felled / cut-down shrubs with eggs (in agreement with an entomologist) to a place ensuring the completion of their development cycle.	Contractor/with the participation of specialist in the field of ornithology	
		[I.2.1.32] Mow the area occupied to construct the embankment - within the found sites and potential habitats of Scarce Large Blue Butterfly <i>Phengaris Teleius</i> and Dusky Large Blue Butterfly <i>Phengaris Nausithous</i> , in particular within their habitats (identified as o-109 and o-119), one year prior starting the works, in the period from early June to late September, once a month. Mow at the height of not more than 10cm. Perform the mowing in the manner specified above (prior to the proceeding works) also in the following year (after starting the works).	Contractor/with the participation of specialist in the field of ornithology	
	Protection of surrounding environment/ reporting	[I.2.1.33] All works relating to execution of activities minimising adverse impact of the investment onto the environment - to be performed under constant environmental supervision run by competent specialists, considering the following principles:	Contractor/ with the participation of specialists	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
		[I.2.1.33.1] on the basis of the conducted implementation-based monitoring, summary reports should be prepared, confirmed by specialists and submitted to the present Body (Institution) at least twice a year,	Engineer	
		[I.2.1.33.2] the last report on implementation monitoring should be prepared within 3 months from the date of completion of the investment.	Engineer	
		[I.2.1.34] Submit all the information about arrangements referring to the manner and scope of the conducted activities specified in I.2.1.5, I.2.1.16, I.2.1.20 - I.2.1.24 as well as documents confirming the participation of specialists (e.g. report on settlements and / or statement of specialists confirming the proper conduct of operations) to the Regional Director of the Environmental Protection in Wroclaw immediately upon making the settlements and / or implementation of these settlements.	DZMiUW	
	Protection of surrounding environment	[I.2.1.35] Design and project access roads leading to the construction site along the existing ground and hardened roads.	Contractor	
		[I.2.1.36] Traffic of vehicles should run along technological routes. Shipments of machinery should be made as far as possible along fixed routes.	Contractor	
		[I.2.1.37] Upon termination of the construction works restore the places of temporary works to the previous state.	Contractor	
	Soil protection	[I.2.38] The technical state of working construction and transportation machines should be checked on a regular basis in order to eliminate the spillage of petroleum into the ground.	Contractor	
		[I.2.39] In case of occurrence of any failure in the scope of contamination with petroleum products, the ground contaminated by an accident must be removed immediately and pass to the appropriate bodies holding authorisation for its further development.		

Location	Issue	Mitigation measures	Institutional responsibility	Notes
	Ground & under-ground water protection	[1.2.1.40] Any places designated for handling vehicles and machines must be periodically (until the completion) lined with insulating materials. Places for parking of vehicles should not be located: at the area where the Main Reservoir of Underground Waters GZWP-320 is located, at the area of the mid-embankment and directly by the slope of the flood protection embankment. Locate the background facilities of the construction site beyond the protective zone of under-ground water intakes where the level of ground water is below 1.5 m below terrain level.	Contractor	
		[1.2.1.41] In the vicinity of machine garaging and filling there should a stand with sorbent serving to eliminate any leaks of petroleum substances.	Contractor	
	Noise protection	[1.2.1.42] Works at acoustically-protected areas should be performed at day-time only - namely between 6 ⁰⁰ and 22 ⁰⁰ .	Contractor	
	Protection of surrounding environment	[1.2.1.43] The construction site, access roads should be organised and maintained so as to minimise dusting and be located possible away from residential areas (in case of any works at areas near residential development, these works should be performed at daytime).	Contractor	
	Protection of surrounding environment/Air protection	[1.2.1.44] Places of storage of soil masses should be properly secured in order to reduce their dusting. [1.2.1.45] Do not allow long-term operation of internal combustion engines of machinery and construction vehicles at a standstill (limit emissions at the so-called stage of idling speed). [1.2.1.46] The execution of works should be organised taking into consideration the capabilities to conduct works synchronously at several locations spaced around 300 - 500 m from each other (one another), in a manner which minimises the aggregation of pollutant concentrations. [1.2.1.47] In the immediate vicinity of residential buildings limit the number of machines working simultaneously at the given distance, in order to minimise direct impacts of emissions. Car parking lots should not be located in these areas.	Contractor	
	Protection of surrounding environment/Solid waste	[1.2.1.48] Organise all the works in such a manner as to minimise the amount of generated wastes and reduce their negative impact on the environment. All the wastes generated at the implementation of the investment should be categorised and stored separately in containers or	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
	management	at places being enclosed and adapted for this purpose, under conditions which prevent dusting and dispelling light fractions, and their negative effects on the environment and to ensure their gradual delivery and acceptance by operators with appropriate authorisation for their further development. [1.2.1.49] Hazardous waste should be categorised and stored in designated containers placed at hardened and protected areas secured against access of third parties until their transfer to entities having the appropriate permission for their disposal.		
	Protection of surrounding environment/Solid waste management	[1.2.1.50] Ground mass generated during the investment should be exploited in accordance with their intended use under existing legislation, taking into account the possibility of reuse to strengthen the rebuilt and upgraded floor protection embankments.	Contractor	
	Ground & underground water protection	[1.2.1.51] Social and domestic sewage must be collected in leak-proof, drain-less tanks and ensure that they are regularly collected by authorised bodies.	Contractor	
	Protection of surrounding environment	[1.2.1.52] The implementation of the investment cannot cause - regardless of the level of water flows - increasing any flood risk of the areas located below the places covered by the application. [1.2.1.53] In the course of conducting the works there can no difficulties occurred in the manner of making use of the areas being adjacent to the projected Works Contract.	Contractor	
	Surface water protection	[1.2.1.54] Rainfall waters from within the areas at the embankments (re-built and under construction) - prior to entering the river - should be treated with sedimentation in ditches or mechanically cleaned. [1.2.1.55] Waters from draining the foundation bottoms for the embankment culverts should be treated with sedimentation in ditches prior to entering the receiver - the river. [1.2.1.56] Any works should not be conducted at the period of intensive precipitation. Grooves preventing direct out-flows of contaminated waters into local trenches should be made.	Contractor	
	Air protection	[1.2.1.57] Embed all the transported masses directly into the embankment body and compact them to the required indicators levels, with no their indirect unloading and storage.	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
	Surface water protection	[1.2.1.58] At the stage of operation - ensure proper operation of machines and equipment for pre-treatment of rainfall waters discharged from communication facilities / structures.	Contractor	
WFS structure No. 40 Odra-Widawa Transfer – Flap Weir				
km 2+600–3+000	Flora protection	[1.2.2.1] At the stretch of the Channel at km 2+600 - 3+000, conduct building (construction) works at the opposite side of the over-flow in relation to the land patch being a mosaic of habitats - <i>Cnidium</i> meadows (<i>Cnidium dubii</i> , habitat code - 6440) and low-land and mountain fresh meadows used extensively (<i>Arrhenatherion elatioris</i>) (6510) (identified as h-54) as well as the position of Fen Violet (identified as f-1). Locate technological routes and storage places beyond within and in the direct vicinity of the above-specified habitats. It is allowed to conduct works required to build a flow-over at the side of the habitat, within a line up to 10 m from the structure under consideration	Contractor	
km 2+500 – 2+600	Flora protection	[1.2.2.2] At the stretch of the Channel at km 2+500 - 2+600 - do not conduct works within and in the direct vicinity of the habitat patch - willow, poplar, alder and ash carr within and in the direct vicinity of the 91E0* habitat (identified as h-55).	Contractor	
km 2+700	Fauna protection	[1.2.2.3] Do not fell / cut down trees which are the habitat of Great Capricorn and Hermit Beetle located at km 2+700 of the Channel (identified as o-1). Building / construction works should be performed beyond the projection area of tree crests forming the above-specified habitat. Within the boundaries of the area no storage sites and technological routes should be located as well. It is permitted only to make use of the existing roads (even if they are located within the projection area of tree crests).	Contractor	
km 2+200 – 2+800	Fauna protection	[1.2.2.4] At the section at km 2+200 - 2+800 of the Channel, within the places of occurrence of amphibians (identified as the positions no. p-1, p-2, p-3 and p-73) and reptiles (identified as the positions no. g-2 and g-43), building / construction works should be conducted beyond the above-specified positions. No storage sites and technological routes should be located within their boundaries.	Contractor	
km 2+500 – 2+600,	Protection of surrounding	[1.2.2.5] At the sections at km 2+500 - 2+600 and km 2+700 of the Channel, do not locate any sites of storage of materials, technological	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
km 2+700	environment (Flora & fauna protection)	routes and places of stoppage of machines / equipment in the direct vicinity of water reservoirs as well as within meadows constituting the breeding habitat of Eurasian Bittern, Grasshopper Warbler, Great Reed Warbler (at km 2+500 - 2+600 of the channel, at km 2+700 of the river). At km 2+500 - 2+600 of the channel, perform works at high noise levels at the period from 15 October up to the end of February.		
Inlet to the Channel from the Odra River	Protection of surrounding environment	[1.2.2.6] Perform building / constructions works under the cover of a temporary shield raised up to the ordinate of 120.50 m above sea level at the side of the Odra River.	Contractor	
Flap weir	Protection of surrounding environment/impact minimization	[1.2.2.7] All the earth works should be conducted within retaining walls.	Contractor	
Flap weir	Surface water protection	[1.2.2.8] Drain water from trenches by means of pipelines beyond the temporary earth shield into the ditch (the existing ditch at the bottom of the inlet channel) and further to the Widawa River. At the inlet of the pipelines into the ditch - the so-called sumps - in order to reduce the speed of flow and to allow sediment of suspensions.	Contractor	
WFS structure No. 41.1 Redevelopment of the Road Bridge – Strachocinski Bridge				
Bridge	Flora & fauna protection	[1.2.3.1] Conduct works (including: felling / cutting down trees and shrubs) only within a line not exceeding 10 m from the bridge and in case of the construction of a temporary bridge within a line not exceeding 10 m from this bridge	Contractor	
Bridge	Flora & fauna protection/Safety of executing works	[1.2.3.2] Do not locate storage sites and parking lots of building / construction machines in the mid-embankment.	Contractor	
Bridge	Ecological design solutions	[1.2.3.3] Execute the strengthening of the channel bottom and slopes with gabions only at the projection of a road lane. Apply stone coverage at other sections.	Contractor	
Bridge	Protection of surrounding environment/impact minimization	[1.2.3.4] All the earth works should be conducted within retaining walls. [1.2.3.5] Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
		soils should ensure the tightness of a particular chamber.		
Bridge	Surface water protection	[1.2.3.6] Discharge waters pumped out of trenches by means of pipelines to the existing ditch at the bottom of the channel. Execute sumps at the outlet of the pipelines. Such method of draining of trenches as well as discharging of waters will maximally reduce its impact onto adjacent areas. [1.2.3.7] Catch rainfall waters through rainwater drains with the tight (sealed) drainage system. Prior to discharging to the receiver, waters should be pre-cleaned in the settler with its capacity of 3,5 m ³ and lamella separator (clarifier) with its flow from 10 up to 100 dm ³ /s.	Contractor	
WFS structure No. 41.2 Redevelopment of the Railway Bridge – Strachocinski Bridge				
Bridge	Flora & fauna protection	[1.2.4.1] Conduct works (including: felling / cutting down trees and shrubs) only within a line not exceeding 10 m from the bridge.	Contractor	
Bridge	Flora & fauna protection/Safety of executing works	[1.2.4.2] Do not locate storage sites and parking lots of building / construction machines in the mid-embankment.	Contractor	
Bridge	Ecological design solutions	[1.2.4.3] Execute the strengthening of the channel bottom and sloes with gabions only at the projection of a road lane. Apply stone coverage at other sections.	Contractor	
Bridge	Protection of surrounding environment/impact minimization	[1.2.4.4] Secure the railway embankment in the course of conducting earth works. All the earth works should be conducted within retaining walls. [1.2.4.5] Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive soils should ensure the tightness of a particular chamber.	Contractor	
Bridge	Surface water protection	[1.2.4.6] Discharge waters pumped out of trenches by means of pipelines to the existing ditch at the bottom of the channel. Execute sumps at the outlet of the pipelines. Such method of draining of trenches as well as discharging of waters will maximally reduce its impact onto adjacent areas.	Contractor	
WFS structure No. 41.3 Redevelopment of the Channel				
The entire length	Flora & fauna	[1.2.5.1] Do not conduct works at both river banks at the same time	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
of the Channel	protection	(leave one bank undisturbed with works conducted at the other bank).		
The entire length of the Channel	Fauna protection	[1.2.5.2] At the time of temporary storage of extracted materials mined from the bottom of the channel - make a review of places projected for storage of newly-extracted materials and collect individuals of mussel reaching the top surface of excavated material. The collected individuals should be moved and released at places ensuring their safety (e.g. at sections of completed works related to the implementation of the Works Contract). Consult and develop the detailed method of reviewing, collecting and handling of individuals of mussel with the participation of a specialist in the field of zoology.	Contractor	
The entire length of the Channel	Ecological design solutions	[1.2.5.3] Do not use gabion baskets and mattresses to strengthen the channel bottom and slopes (apart from sections under re-built bridges as well as within and in the immediate vicinity of the weir).	Contractor	
The entire length of the Channel	Ecological design solutions / Flora & fauna protection	[1.2.5.4] Form the new river-bank slopes in a manner which ensures the variation of the course of the line, height and tilt of these river-bank slopes, formation of creeks and bays within these river-banks as well as enabling the development of communities of river-bank vegetation at some of their slopes. Consult and develop detailed solutions in terms of location, design and technology - in consultation with specialists in the field of zoology (including ichthyology and ornithology) as well as botany - plant sociology.	Contractor	
WFS structure No. 42.1 Redevelopment of the Road Bridge B. Krzywoustego				
The Widawa River km 17+250 – 19+400	Flora & fauna protection	[1.2.6.1] Do not locate storage sites and technological routes at the section of the Widawa River at km 17+250 - 19+400 within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-63) as well as the location of Fen Violet (identified as f-8). Execute the works at the line not exceeding 10 m from the bridge.	Contractor	
Bridge	Protection of surrounding environment/imp act minimization	[1.2.6.2] All the earth works should be conducted within retaining walls. [1.2.6.3] Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive soils should ensure the tightness of a particular chamber.	Contractor	
Bridge	Surface water protection	[1.2.6.4] Discharge waters pumped out of trenches by means of pipelines to the existing ditch at the bottom of the channel. Execute sumps at the outlet of the pipelines. Such method of draining of trenches as well as	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
		discharging of waters will maximally reduce its impact onto adjacent areas. [1.2.6.5] Catch rainfall waters through rainwater drains with the tight (sealed) drainage system. Prior to discharging to the receiver, water from the (northern and southern) bridge structures should be pre-cleaned in the settlers with their capacity of 3,5 m ³ each and lamella separators with their flow from 15 up to 150 dm ³ /s each.		
WFS structure No. 42.1.1 Redevelopment of the Railway Bridge B. Krzywoustego				
Bridge	Flora & fauna protection	[1.2.7.1] Conduct works (including: felling / cutting down trees and shrubs) only within a line not exceeding 10 m from the bridge.	Contractor	
Bridge	Protection of surrounding environment/ impact minimization	[1.2.7.2] All the earth works should be conducted within retaining walls. [1.2.7.3] Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive soils should ensure the tightness of a particular chamber.	Contractor	
Bridge	Surface water protection	[1.2.7.4] Discharge waters pumped out of trenches by means of pipelines to the existing ditch at the bottom of the channel. Execute sumps at the outlet of the pipelines. Such method of draining of trenches as well as discharging of waters will maximally reduce its impact onto adjacent areas.	Contractor	
WFS structure No. 44.1 Channel – new right-bank embankment				
km 0+000–1+300	Flora protection	[1.2.8.1] Do not conduct building / construction works, do not locate storage sites and technological routes at the section of the Channel at km 0+000 - 1+300 within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-57). Perform the construction of the embankment from its land-side.	Contractor	
WFS structure No. 44.11 Channel – new left-bank embankment				
km 1+900	Flora protection	[1.2.9.1] Do not conduct building / construction works at the section of the Channel at km 1+900 within and in the direct vicinity of the patch of the habitat - Old river beds and natural eutrophic water reservoirs 3150 (identified as h-56).	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
km 0+000– 1+300		[I.2.9.2] At km 0+000 - 1+300 of the Channel within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-57) and the position of Fen Violet (identified as f-2) - do not perform building / construction works, do not locate storage sites and technological routes. Perform the construction of the embankment from its land-side.	Contractor	
km 1+900	Fauna protection	[I.2.9.3] At the section at km 1+900 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-5), building / construction works should be performed beyond the above-specified position. No storage sites and technological routes should be located within the boundaries of the position.	Contractor	
km 1+700		[I.2.9.4] At the section at km 1+700 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-6), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	Contractor	
km 2+000		[I.2.9.5] At the section at km 2+000 of the Channel, within the place of occurrence of reptiles (identified as the habitat no. p-44), building / construction works should be performed beyond the above-specified position. No storage sites and technological routes should be located within the boundaries of the position.	Contractor	
km 1+800		[I.2.9.6] At the section at km 1+800 of the Channel, within the place of occurrence of reptiles (identified as the habitat no. p-3), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	Contractor	
km 1+700 and 1+900	Flora & fauna protection	[I.2.9.7] At the section at km 1+700 and 1+900 of the Channel, do not perform works, do not locate technological routes and parking lots of machines and equipment, do not store materials within meadows and	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
		brushwood constituting the breeding habitat of Red-backed Shrike and Great Reed Warbler overgrowing old river beds at the land-side		
WFS structure No. 44.12 Swojczyce – new embankment				
km 0+000– 1+300 of the Channel	Flora protection	[I.2.10.1] At the section at km 0+000 - 1+300 of the Channel within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-57) - do not conduct building / construction works, do not locate storage sites and technological routes. Perform the construction of the embankment from its land-side.	Contractor	
km 20+100 – 20+250 of the Widawa River	Fauna protection	[I.2.10.2] At the section at km 20+100 - 20+250 of the Widawa River, at the direct vicinity of the position of Dusky Large Blue and Scarce Large Blue (identified as o-11), perform building / construction works only at the land-side of the embankment (alternatively - at its front). Do not occupy land within the mid-embankment. Locate storage sites and technological routes beyond the area of the above-specified position.	Contractor	
km 20+100 – 20+400 of the Widawa River	Fauna protection	[I.2.10.3] At the section at km 20+100 - 20+400 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-82), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	Contractor	
km 20+100 – 20+400 of the Widawa River		[I.2.10.4] At the section at km 20+100 - 20+400 of the Widawa River, within the place of occurrence of reptiles (identified as the habitat no. g-5), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
km 0+500 of the Channel and km 20+200, 20+400, 20+500, 20+600 of the Widawa River		[I.2.10.5] At the sections at km 0+500 of the Channel and at km 20+200, 20+400, 20+500, 20+600 of the Widawa River, do not perform works within brushwood constituting the breeding habitat of Red-backed Shrike, do not locate technological routes and parking lots of machines and equipment, do not store materials.	Contractor	
WFS structure No. 44.13 Kowale – new embankment				
km 17+250 – 19+400 of the Widawa River	Flora protection	[I.2.11.1] At the section at km 17+250 - 19+400 of the Widawa River, within the patch of the habitat - Cnidium meadows 6440 (identified as h-63) and the position of Fen Violet (identified as f-8), execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified habitats at the embankment crest; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitats.	Contractor	
km ok. 17+400 of the Widawa River	Fauna protection	[I.2.11.2] At km around 17+400 of the Widawa River, in the direct vicinity of the position of Hermit Beetle (identified as o-14) building / construction works should be conducted beyond the projection area of tree crests. Do not locate storage sites and technological routes within the boundaries of the area.	Contractor	
km 19+500 – 20+000, 19+100 – 19+300, 19+000 – 19+100, 17+500 – 19+000 of the Widawa River	Flora & fauna protection	[I.2.11.3] Do not clear melioration ditches at the sections at km 19+500 - 20+000, 19+100 - 19+300, 19+000 - 19+100, 17+500 - 19+000 of the Widawa River.	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
km 19+100 – 19+300 of the Widawa River	Fauna protection	[I.2.11.4] At the section at km 19+100 - 19+300 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-55), building / construction works should be performed beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.	Contractor	
km 17+200 – 19+400 of the Widawa River		[I.2.11.5] At the section of the embankment at 17+200 - 19+400 of the Widawa River, within the places of occurrence of amphibians (identified as the habitat no. p-87) and reptiles (identified as the habitat no. g-11 of the Report) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. At the section of the embankment crossing the habitat - perform building / construction works from the embankment front (at the same time reducing the area used in the course of building / construction works) towards the embankment base. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	Contractor	
km 19+200 – 19+400 of the Widawa River		[I.2.11.6] At the section at km 19+200 - 19+400 of the Widawa River, within the place of occurrence of reptiles (identified as the habitat no. g-7), building / construction works should be performed beyond the above-specified position. No storage sites and technological routes should be located within the boundaries of the position.	Contractor	
km 18+200 km 17+700 km 18+300 km 18+500 km 18+100 km 18+000 of the Widawa River	Fauna protection	[I.2.11.7] Do not locate technological routes and parking lots of machines and equipment, do not store materials within meadows and shrubs constituting the breeding habitat of Red-backed Shrike, Great Reed Warbler and Stone-chat within the places of occurrence of birds identified as: p-68 (at km 18+200 of the river), p-71 (at km 17+700 of the river), p-67 (at km 18+300 of the river), p-66 (at km 18+500 of the river), p-69 (at km 18+100 of the river), p-70 (at km 18+000 of the river). Perform all the works at the land-side within a line not exceeding 30 m from the embankment.	Contractor	
WFS structure No. 45.6 Kowale - embankment modernization				
km 19+500 – 20+200 of the	Flora protection	[I.2.12.1] At the section at km 19+500 - 20+200 of the Widawa River, within the patch of the habitat - Cnidium meadows 6440 (identified as h-	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
Widawa River		62) and the positions of Fen Violet (identified as f-5) - perform all the works within the mid-embankment only at a line of the existing ground road running at the route of the projected embankment. Locate places of storage of materials as well as technological routes only at the land-side of the embankment.		
km 20+100 – 20+250 of the Widawa River	Fauna protection	[I.2.12.2] At the section at km 20+100 - 20+250 of the Widawa River, at the direct vicinity of the position of Dusky Large Blue and Scarce Large Blue (identified as o-11), perform building / construction works only at the land-side of the embankment (alternatively - at its front). Do not occupy land within the mid-embankment. Locate storage sites and technological routes beyond the area of the above-specified position.	Contractor	
km 19+500 – 20+000, 19+100 – 19+300, 19+000 – 19+100, 17+500 – 19+000 of the Widawa River	Flora & fauna protection	[I.2.12.3] Do not clear melioration ditches at the sections at km 19+500 - 20+000, 19+100 - 19+300, 19+000 - 19+100, 17+500 - 19+000 of the Widawa River.	Contractor	
km 19+500 – 20+400 of the Widawa River	Fauna protection	[I.2.12.4] At the section at km 19+500 - 20+400 of the Widawa River, within the places of occurrence of amphibians (identified as the habitats no. p-49 and p-82) and reptiles (identified as the habitats no. g-5 and g-6) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitats. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	Contractor	
km 20+100, 19+800, 19+600 of the Widawa River	Flora & fauna protection	[I.2.12.5] At the sections at km 20+100, 19+800, 19+600 of the Widawa River - do not locate technological routes and parking lots of machines and equipment, do not store materials within meadows and bushes constituting the breeding habitats of Red-backed Shrike and Grasshopper Warbler.	Contractor	
WFS structure No. 44.2 Wilczyce – new embankment				
km 22+100 - 22+300 and 22+800 – 23+000	Flora & fauna protection	[I.2.13.1] At the sections at km 22+100 - 22+300 and 22+800 - 23+000 of the Widawa River, within the place of occurrence of Ray-finned fish <i>Sabanejewia aurata</i> (identified as the habitat no. r-2) - do not perform	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
of the Widawa River		any works within the river-bed, even to secure concave river-banks in order to protect the embankments. Securing the embankments should be made with no interference within these river-banks (at their current state). Perform earth works and building / construction activities from the land only. Designate technological routes outside the mid-embankment only.		
km 23+000 – 24+000 of the Widawa River	Flora & fauna protection	[I.2.13.2] At the section at 23+000 - 24+000 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-41) and reptiles (identified as the habitat no. g-46 of the Report) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front, at the same time limiting the area used in the course of building / construction works to lines of land with their width not exceeding 5 m from the embankment base. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	Contractor	
km 22+300 of the Widawa River	Fauna protection	[I.2.13.3] At the section at km 22+300 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-43) and reptiles (identified as the habitat no. g-48), building / construction works should be conducted beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.	Contractor	
km 23+000, 20+700, 18+100 of the Widawa River	Fauna protection	[I.2.13.4] At the sections at km 23+000, 20+700, 18+100 of the Widawa River, within the future mid-embankment, do not locate technological routes and parking lots of machines and equipment, do not store materials within the boundaries of the breeding habitats of Corn Crake and Grasshopper Warbler.	Contractor	
km 23+000 of the Widawa River	Fauna protection	[I.2.13.5] At the section at km 23+000 of the Widawa River, within the breeding habitat of Red-backed Shrike, do not locate technological routes and parking lots of machines and equipment, do not store materials. At the section of the embankment crossing the above-specified habitat, limit all the works together with felling / cutting down of trees and shrubs to the width of the embankment base (footing).	Contractor	
WFS structure No. 45.5 The embankment modernization				

Location	Issue	Mitigation measures	Institutional responsibility	Notes
km 2+600 – 3+000 of the Channel	Flora protection	[I.2.14.1] At the section at km 2+600 - 3+000 of the Channel, conduct building (construction) works at the opposite side of the over-flow in relation to the land patch being a mosaic of habitats - <i>Cnidium</i> meadows (<i>Cnidium dubii</i> , habitat code - 6440) and low-land and mountain fresh meadows used extensively (<i>Arrhenatherion elatioris</i>) (6510) (identified as h-54) as well as the position of Fen Violet (identified as f-1). Locate technological routes and storage places beyond within and in the direct vicinity of the above-specified habitats. It is allowed to conduct works required to build a flow-over at the side of the habitat, within a line up to 10 m from the structure under consideration.	Contractor	
km 2+500 – 2+600 of the Channel		[I.2.14.2] At the section at km 2+500 - 2+600 of the Channel, do not conduct works within and in the direct vicinity of the habitat patch - willow, poplar, alder and ash carr *91E0 (identified as h-55).	Contractor	
km 2+700 – 3+000 of the Channel	Fauna protection	[I.2.14.3] At the section at km 2+700 - 3+000 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-74) and reptiles (identified as the habitat no. g-42 and g-43), building / construction works should be conducted beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.	Contractor	
km 2+700, km 2+500, km 2+800 - 2+900, km 3+000 of the Channel	Flora & fauna protection	[I.2.14.4] At the sections at km 2+700, km 2+500, km 2+800 - 2+900, km 3+000 of the Channel, do not locate technological routes and parking lots of machines and equipment, do not store materials in the direct vicinity of water reservoirs and brushwood as well as at meadows constituting the breeding habitats of Grasshopper Warbler, Great Reed Warbler and Red-backed Shrike. Conduct all the works at the land-side of the embankment.	Contractor	
WFS structure No. 45.2 Wilczyce - embankment modernization				
km 21+500 – 21+900 of the Widawa River	Flora protection	[I.2.15.1] At the section at km 21+500 - 21+900 of the Widawa River, within the habitat patch - <i>Cnidium</i> meadows 6440 (identified as h-1) - conduct all the works at the land-side of the embankment. Locate places of storage of materials and technological routes only at the land-side of the embankment and beyond the area of the above-specified habitat.	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
km 21+500 – 21+750 of the Widawa River	Flora protection	[I.2.15.2] At the section at km 21+500 - 21+750 of the Widawa River, within the position of Common Snowdrop (identified as f-3), limit felling / cutting down of riverine trees and brushwood to the width of the embankment base. Locate technological routes only at the land-side of the embankment making use of the existing network of mid-field paths (roads) to the furthest possible extent. Locate places of storage of materials at the land-side of the embankment beyond the area of forest habitats.	Contractor	
km 21+750, 21+700, 19+300 – 21+700 of the Widawa River	Fauna protection	[I.2.15.3] At the sections at km 21+750, 21+700, 19+300 - 21+700 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified as the habitats no. o-19, o-20 and o-27). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).	Contractor	
km 21+000 – 21+500 of the Widawa River	Fauna protection	[I.2.15.4] At the section at km 21+000 - 21+500 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-77) and reptiles (identified as the habitat no. g-52), building / construction works should be conducted beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.	Contractor	
km 20+800 – 21+900 of the Widawa River		[I.2.15.5] At the section at km 20+800 - 21+900 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-76) and reptiles (identified as the habitat no. g-51) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
km 21+700 and 21+800 of the Widawa River		[I.2.15.6] At the sections at km 21+700 and 21+800 of the Widawa River, within the mid-embankment, do not locate technological routes and parking lots of machines and equipment, do not store materials in the breeding habitats of Grasshopper Warbler and River Warbler. Conduct all the works at the land-side of the embankment.	Contractor	
WFS structure No. 45.1 The embankment modernization				
km 0+000 – 1+300 of the Channel	Flora protection	<p>[I.2.16.1] At km 0+000 - 1+300 of the Channel within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-57) and the position of Fen Violet (identified as f-2) - do not perform building / construction works, do not locate storage sites and technological routes. Conduct the construction of the embankment at the land-side of the embankment and beyond the area of the above-specified habitats.</p> <p>[I.2.16.2] At the section at km 0+000 - 1+300 of the Channel - plan refurbishment and transportation works in such a manner to bypass the position of French rose (<i>Rosa Gallica</i>).</p>	Contractor	
km 21+500, 21+700 of the Widawa River	Fauna protection	[I.2.16.3] At the sections at km 21+500, 21+700 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified as the habitats no. o-9, o-8). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).	Contractor	
km 0+500 of the Channel and km 21+400 of the Widawa River	Fauna protection	[I.2.16.4] At the sections at km 0+500 of the channel and at km 21+400 of the Widawa River, within the mid-embankment, do not locate technological routes and parking lots of machines and equipment, do not store materials in the breeding habitats of Grasshopper Warbler and Corn Crake. Conduct works at the land-side of the embankment.	Contractor	
WFS structure No. 46.1 Embankment demolition				

Location	Issue	Mitigation measures	Institutional responsibility	Notes
km 1+900 of the Channel	Fauna protection	[I.2.17.1] At the section at km 1+900 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-5), building / construction works should be performed beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.	Contractor	
km 1+700 of the Channel		[I.2.17.2] At the section at km 1+700 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-6), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	Contractor	
km 2+000 of the Channel		[I.2.17.3] At the section at km 2+000 of the Channel, within the place of occurrence of reptiles (identified as the habitat no. p-44), building / construction works should be performed beyond the above-specified position. No storage sites and technological routes should be located within the boundaries of the position.		
km 1+800 of the Channel	Fauna protection	[I.2.17.4] At the section of the embankment at km 1+800 of the Channel, within the place of occurrence of reptiles (identified as the habitat no. p-3), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	Contractor	
km 0+800 of the Channel	Fauna protection	[I.2.17.5] At the section of the embankment at km 0+800 of the Channel, conduct the demolition of the embankment from the embankment front leaving shrubs at the land-side. Locate access roads and places of storage of materials at the land-side of the embankment beyond the boundaries of shrubs constituting the habitat of Red-backed Shrike.	Contractor	
WFS structure No. 44.3 Zgorzelisko (to B. Krzywoustego street) – new embankment				
km 20+500 – 21+000 of the Widawa River	Flora protection	[I.2.18.1] At the section at km 20+500 - 21+000 of the Widawa River - do not perform building / construction works within and in the direct proximity of the habitat patch - old river beds and natural eutrophic water	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
		reservoirs 3150 (identified as h-3).		
km 18+700 – 19+600 and 19+800 – 21+900 of the Widawa River		[I.2.18.2] At the sections at km 18+700 - 19+600 and 19+800 - 21+900 of the Widawa River, within the habitat patches - Cnidium meadows 6440 (identified respectively as h-7 and h-1) - do not conduct building / construction works, do not locate storage sites and technological routes. Conduct the construction of the embankment at the land-side of the embankment and beyond the area of the above-specified habitat.	Contractor	
km 17+300 – 19+200 of the Widawa River		[I.2.18.3] At the section at km 17+300 - 19+200 of the Widawa River, within the habitat patch - Cnidium meadows 6440 (identified as h-8) - execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing)). Locate technological routes at the sections intersecting the above-specified habitat at the embankment crest; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.	Contractor	
km 20+400 – 21+200 of the Widawa River		[I.2.18.4] At the section at km 20+400 - 21+200 of the Widawa River, within the habitat patch - willow, poplar, alder and ash carr (identified as h-2), limit felling / cutting down of riverine trees and brushwood to the width of the embankment base and execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing)). Locate technological routes at the sections intersecting the above-specified habitat at the embankment crest; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.	Contractor	
km 17+300 – 17+500 of the Widawa River		[I.2.18.5] At the section at km 17+300 - 17+500 of the Widawa River - conduct works at a distance exceeding 20 m from the habitat patch - willow, poplar, alder and ash carr *91E0 (identified as h-9).	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
km 19+500 – 20+700 of the Widawa River		[I.2.18.6] At the section at km 19+500 - 20+700 of the Widawa River, within the habitat patch - low-land and mountain fresh meadows used extensively 6510 (identified as h-4) - execute the construction of the embankment at the section running through the habitat from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified habitat at the embankment crest; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.	Contractor	
km 19+200 – 19+400 and 20+500 – 21+000 of the Widawa River	Fauna protection	[I.2.18.7] At the sections at km 19+200 - 19+400 and 20+500 - 21+000 of the Widawa River - locate all the building / construction works as well as storages of materials and technological routes at a distance not exceeding 15 m from the embankment so that not to cause damage at the positions of Yellow Water-lily and White Water-lily (identified as f-4 and f-7).	Contractor	
km 19+500 – 20+000 of the Widawa River		[I.2.18.8] At the section at km 19+500 - 20+000 of the Widawa River - locate all the building / construction works as well as storages of materials and technological routes at a distance not exceeding 20 m from the embankment so that not to cause damage at the position of Broad-leaved Helleborine (identified as f-6).	Contractor	
km 18+000, 19+500 – 19+600, 19+300 – 21+700 of the Widawa River	Flora protection	[I.2.18.9] At the sections at km 18+000, 19+500, 19+300 - 21+700 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified respectively as o-29, o-28 and o-27). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
km 18+800 – 19+200 of the Widawa River		[I.2.18.10] At the section at km 18+800 - 19+200 of the Widawa River, at the direct vicinity of the position of Dusky Large Blue and Scarce Large Blue (identified as o-33), perform building / construction works only at the land-side of the embankment (alternatively - at its front). Do not occupy land within the mid-embankment. Locate storage sites and technological routes beyond the area of the above-specified position.	Contractor	
km 16+500, 16+200, 16+100 and 18+000 – 19+500 of the Widawa River,	Flora & fauna protection	[I.2.18.11] Do not clear melioration ditches at the sections at km 16+500, 16+200, 16+100 and 18+000 - 19+500 of the Widawa River.	Contractor	
The Widawa River along the section of the new embankment	Fauna protection	<p>[I.2.18.12] Within the places of occurrence of amphibians identified as follows: p-125 (km 18+700 - 19+300 within the river), p-86 (km 19+300 - 19+800 within the river), p-8 (km 20+600 - 20+900 within the river), p-84 (km 19+700 - 20+600 within the river), p-51 (km 19+500 within the river), p-52 (km 19+400 within the river), p-54 (km 18+000 - 19+000 within the river), p-90 (km 17+300 - 17+500 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.</p> <p>[I.2.18.13] Within the places of occurrence of amphibians identified as follows: p-76 (km 20+900 - 21+900 within the river), p-77 (km 21+000 - 21+500 within the river), p-79 (km 20+900 - 21+400 within the river), p-78 (km 20+400 - 21+400 within the river), p-9 (km 20+400 within the river), p-83 (km 20+000 - 20+400 within the river), p-85 (km 19+500 - 20+000 within the river), p-50 (km 19+000 - 19+100 within the river), p-53 (km 19+100 - 19+500 within the river), p-10 (km 18+800 - 19+100 within the river), p-88 (km 17+600 - 19+100 within the river), p-89 (km 17+200 - 18+000 within the river), perform building / construction works only within the embankment base area, making use of the technology of work from the embankment front or from either side of the embankment (land-side or water-side) - not colliding with the habitat. At the section of the embankment crossing the habitat - perform building / construction works from the embankment front (at the same time reducing the area</p>	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
		<p>used in the course of building / construction works) to the embankment base area. Do not locate storage sites and technological routes within the boundaries of the habitats. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.</p> <p>[I.2.18.14] Within the places of occurrence of reptiles identified as follows: g-29 (km 18+700 - 19+300 within the river), g-30 (km 19+300 - 19+800 within the river), g-58 (km 20+600 - 20+900 within the river), g-60 (km 19+800 - 20+800 within the river), g-13 (km 19+600 within the river), g-14 (km 19+300 - 19+400 within the river), g-17 (km 18+000 - 19+000 within the river), g-20 (km 17+300 - 17+500 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.</p> <p>[I.2.18.15] Within the places of occurrence of reptiles identified as follows: g-51 (km 20+800 - 21+900 within the river), g-52 (km 21+000 - 21+500 within the river), g-53 (km 20+400 - 21+500 within the river), g-54 (km 20+400 - 21+500 within the river), g-59 (km 20+400 within the river), g-61 (km 19+800 - 20+800 within the river), g-63 (km 19+500 - 20+000 within the river), g-12 (km 19+600 within the river), g-15 (km 19+000 - 19+500 within the river), g-16 (km 19+000 within the river), g-18 (km 17+600 - 19+100 within the river), g-19 (km 17+200 - 18+000 within the river), perform building / construction works only within the embankment base area, making use of the technology of work from the embankment front or from either side of the embankment (land-side or water-side) - not colliding with the habitat. At the section of the embankment crossing the habitat - perform building / construction works from the embankment front (at the same time reducing the area used in the course of building / construction works) to the embankment base area. Do not locate storage sites and technological routes within the boundaries of the habitats. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.</p>		
km 23+000, 20+700, 18+100	Fauna protection	[I.2.18.16] At the sections at km 23+000, 20+700, 18+100 of the Widawa River, within the mid-embankment, do not locate technological routes	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
of the Widawa River		and parking lots of machines and equipment and do not store materials in the breeding habitat of Corn Crake.		
km 20+100 of the Widawa River and km 21+300, 20+400, 20+100, 19+000, 18+700, 18+200, 18+600	Fauna protection	[I.2.18.17] At the section at km 20+100 of the Widawa River crossing the habitat of Grasshopper Warbler (identified as p-48) - do not locate technological routes and parking lots of machines and equipment and do not store materials within the meadow habitat. Limit the territory used in the course of building / construction works to the embankment base area. At the remaining section of the embankment, in the region of crossing potential habitats of Grasshopper Warbler and Red-backed Shrike (at km 21+300, 20+400, 20+100, 19+000, 18+700, 18+200, 18+600 within the river) - conduct works at the land-side and perform felling / cutting down shrubs growing in the neighbourhood of the embankment only within a line of the embankment base.	Contractor	
km 20+600 of the Widawa River	Fauna protection	[I.2.18.18] At the section at km 20+600 of the Widawa River - conduct felling / cutting down trees within the habitat of Grey-headed Woodpecker (identified as p-38) only within a line of the embankment	Contractor	
km 20+700 of the Widawa River	Fauna protection	[I.2.18.19] At the section at km 20+700 of the Widawa River - do not locate technological routes and parking lots of machines and equipment, do not store materials and do not perform building / construction works within and in the direct vicinity of the old river-bed being the breeding habitat of Moorhen.	Contractor	
km 17+400 of the Widawa River	Flora & fauna protection	[I.2.18.20] At the section at km 17+400 of the Widawa River - locate places of storage of materials, technological routes and parking lots of machines and equipment at the land-side of the embankment.	Contractor	
Concerns all contract's structures	Flora & fauna protection	[I.3.1.1] Do not locate the background facilities of construction sites and manoeuvring places at the areas at which the occurrence of protected natural habitats is inventoried, within mid-embankments and at a distance not shorter than 100 m from the existing water reservoirs and ponds, oxbow lakes and wetland areas.	Contractor	
		[I.3.1.2] Organise the construction site taking into account the principles of minimising the occupation of lands.		
		[I.3.1.3] Locate technological routes at a distance not shorter than 100 m from water reservoirs, ponds and oxbow lakes.		

Location	Issue	Mitigation measures	Institutional responsibility	Notes
		[I.3.1.4] Plan all the works consisting in the regulation, streamlining and strengthening the river-bed of the Widawa River only at sections under the re-built bridges and 50-m sections below and above the bridges.		
		[I.3.1.5] Determine the manner of dealing with wastes and earth masses generated at the stage of implementation of the investment considering the terms and conditions included in point I.2.1.48-I.2.1.50 of the present decision.		
		[I.3.1.6] Determine the manner of drainage of foundation ditches under the embankment culverts considering the recommendations indicated in point I.2.1.55.		
		[I.3.1.7] Apply the so-called "quiet surface" at the re-constructed bridge structures ensuring the reduction of the level of noise.		
		[I.3.1.8] Determine the manner of drainage of bridge structures considering the conditions indicated in point I.2.3.7, I.2.4.6, I.2.6.5, I.2.19.6, I.2.20.5.		
		[I.3.1.9] Determine the manner of conducting works at the bridge structures, minimising their negative impact onto the adjacent areas - considering the terms and conditions specified in point I.2.3.4, I.2.4.4, I.2.6.2, I.2.7.2, I.2.19.4, I.2.20.3, I.2.21.3.		
		[I.3.1.10] Determine the manner of embedding / seating of bridge structures considering the terms and conditions specified in point I.2.3.5, I.2.4.5, I.2.6.3, I.2.7.3, I.2.19.5, I.2.20.4.		
		[I.3.1.11] Determine the manner of dealing with pumped-out waters considering the terms and conditions specified in I.2.2.8, I.2.3.6, I.2.4.6, I.2.6.4, I.2.7.40.		
WFS 45.2 km 21+750, 21+700, 19+300 – 21+700 of the Widawa River	Fauna protection	[I.3.3.1] At the sections at km 21+750, 21+700, 19+300 - 21+700 of the Widawa River in order to protect the habitats of Hermit Beetle and Great Capricorn (identified as o-19, o-20 and o-27) - apply prefabricated walls made of T or L elements for the construction of the embankment.	Contractor	
WFS 45.1 km 21+500, 21+700 of the Widawa River	Fauna protection	[I.3.4.1] At the sections at km 21+500, 21+700 of the Widawa River in order to protect the habitats of Hermit Beetle and Great Capricorn (identified as o-9, o-8) - apply prefabricated walls made of T or L elements for the construction of the embankment.	Contractor	

Location	Issue	Mitigation measures	Institutional responsibility	Notes
WFS44.3 km 18+000, 19+500 – 19+600, 19+300 – 21+700 of the Widawa River	Fauna protection	[I.3.5.1] At the sections at km 18+000, 19+500 - 19+600, 19+300 - 21+700 of the Widawa River in order to protect the habitats of Hermit Beetle and Great Capricorn (identified as o-29, o-28 and o-27) - apply prefabricated walls made of T or L elements for the construction of the embankment.	Contractor	
Concerns all contract's structures	Residents injured by construction traffic and machinery	[III.1.1] Appropriate marking of the construction site.	Contractor	
Concerns all contract's structures	Workers injured during construction	[III.1.2] Implement international HSE standards in all contracts.	Contractor	
Concerns all contract's structures	Illegal or excessive borrowing may damage archaeological or land resources	[III.1.3] No earth borrowed from unauthorized locations.	Contractor	
Concerns all contract's structures	Land acquisition	[III.1.4] Purchases, compensations for people affected by the Project, RAP implementation	DZMiUW with the help of Engineer	
Concerns all contract's structures	Archaeological artefacts	[III.1.5] In case of discovery of movable or immovable archaeological artefacts the Contractor is obliged to notify immediately the Lower Silesian Provincial Conservator of Monuments, the Engineer and the Employer. In the conduct of the Works the Contractor of the Works will comply with the guidance of the Lower Silesian Provincial Conservator of Monuments.	Contractor	
Concerns all contract's structures	Bombs, unexploded munitions	[III.1.6] In the case of come across a unexploded bombs and munitions the Contractor shall immediately stop work, evacuate workers and notify the police and the licensed entity of sappers.	Contractor	

**Appendix 2. Check List -
Monitoring Plan**

APPENDIX 2. CHECK LIST - MONITORING PLAN

Table 2. Monitoring plan for Works Contract B 3-1 Section: Odra - Widawa Weir - to the railway bridge (Krzywoustego Street) WFS structures No.: 40,41.1,41.2,41.3,42.1,42.1.1,44.1,44.11,44.12,44.13,44.2,44.3,45.5,45.1,45.2,45.6,46.1.

ATTENTION:

The Natura 2000 site "**Grady w Dolinie Odry**" is located partly in the area of the works which will be carried out. Another protected area whose boundaries run approximately 5 km is the Natura 2000 "**Dolina Widawy**".

Explanations regarding the Table:

- ¹ - confirmation by the Contractor of implementing the activity in a monthly report on the implementation of the contract, supported by the protocols from site visits, expert naturalist reports, etc.
- ² - confirmation by the Contract Engineer in a monthly Engineer's Report, supported by the protocols (minutes of meetings) and site visits. The Engineer will be responsible for evaluation of the monitoring, which will be confirmed in the Engineer's reports. The person responsible - Environmental Expert.
- ³ - confirmation by the expert naturalist understood as a report of actions taken by the expert (team of experts) in accordance with the requirements as contained in environmental decisions.
- ⁴ - the Contractor will be obliged to fulfill the control data sheets for implementation of mitigation measures with with frequency indicated in the table below

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Monitoring referring all structures						
Soil	[I.2.1.1] Prior to undertaking substantial levelling works - take off the top of the humus soil layer (to the depth of 30 cm on average) and store in the vicinity of the area covered by the construction, in separate piles secured against	Concerns all con-tract's structures on whole	Completion of embankments – Contractor's report ¹ –	The entire period of contact implementation	Everytime on completion of the piles, each section of the works	Contractor

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	drying and mixing with native rock, subject to the condition set out in point I.2.1.19.	section of embankments	confirmed by the Engineer ²			
					Once a month control of piles protection	Engineer
	[I.2.1.2] Upon completion of earth works - use the taken-off over-load for forming slopes of the embankments intended for turf assessment: at the width of 5-10 metres along the embankment and within the reconstructed structures, at one side or both sides of the embankment - spread and level the previously taken-off humus. Within technological lines and places of storage (transport) of building materials - additionally execute all the tillage works: plating with discs, harrowing, fertilising and seeding grass mixtures in accordance with meadow habitats located closest to the site of re-cultivation.	Concerns all contract's structures on whole section of embankments	Completion of embankments – Contractor's report ¹ – confirmed by the Engineer ²	During entire period of works realization, according to the schedule of earth works	Everytime on completion of topsoil application on each section of the embankment	Contractor
					Everytime on completion of topsoil application on each section of the embankment, but not less frequently than once a month	Engineer
Soil/ environment	[I.2.1.3] Do not occupy lands adjacent to the area of implementation of the Works Contract beyond the existing communication system.	Concerns all contract's structures on whole section of embankments	Statement of Completion – Contractor's report ¹ – confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement of execution and after finishing of bank's section	Contractor
					Once a month	Engineer
	[I.2.1.4] Do not locate background facilities of construction sites at areas covered with buses and trees as well as within protected natural habitats	Concerns all contract's structures on whole section of embankments	Statement of Completion – Contractor's report ¹ – confirmed by the Engineer ²	During the Sites delimitation, During the Sites fencing	Everytime prior to determining location of each construction site	Contractor
					Everytime prior to determining location of each construction site	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.1.5] Prior to starting works at particular tasks within the Works Contract, with the participation of specialists in botany, plant sociology, and zoology, fence off valuable patches of natural habitats and positions of protected plants and animals which are adjacent to the set-out sites of works and designated for their preservation. Execute the fencing in such a manner which is visible for people performing building works and which prevents accidental intrusion into fenced-off patches of natural habitats and positions of plants and animals. Remove the fencing upon the completion of building works.	Concerns all con-tract's structures on whole section of embankmen ts	Statement of Completion – Contractor's report ¹ – confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement of execution and after finishing of bank's section	Contractor with the participation of specialists in the field of botany, plant sociology and zoologist
					Everytime prior to commencement of execution and after finishing of bank's section	Engineer
	[I.2.1.6] Reduce (as far as possible) the area of damage as a result of building works conducted within valuable natural habitats of species.	Concerns all con-tract's structures on whole section of embankmen ts	Environmental Specialist Report, Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement of execution and after finishing of bank's section	Contractor
					Everytime prior to commencement of execution and after finishing of bank's section	Engineer
Soil/ environment	[I.2.1.7] Modify the technology applied for construction / reconstruction of the embankments consisting in conducting works at the opposite side to natural objects, or alternatively - conducting works at the front or crest of the embankment.	Concerns all con-tract's structures on whole section of embankmen ts	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement of execution of any bank's section	Contractor
					Everytime prior to commencement of execution and during execution of bank's section, but not less frequently than once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.1.8] Determine the location of technological routes and sites in a manner which ensures: preservation of protected natural habitats, positions and habitats of protected species, preservation of all the tree- and shrub-based vegetation occurring beyond the areas required to be occupied in reference to the modernisation of the existing embankments and construction of new ones.	Concerns all con-tract's structures on whole section of embankmen ts	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement of execution of bank's section	Contractor with the participation of environmental specialist
					Everytime prior to commencement of execution of bank's section	Engineer
	[I.2.1.9] At the determination of location of technological routes and sites at the areas located within the zone of implementation of the Works Contract, the following should be done: <div>1. keep all tree and shrub vegetation growing beyond the places required to be occupied in reference to the modernisation of the existing embankments and construction of new ones,</div> <div>2. set a precise location of technological routes and sites within the boundaries of the zone of implementation of the Works Contract - in co-operation with specialists in the field of zoology and botany, so as not to worsen the ecological status of natural objects located within the implementation.</div>		Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement of execution and during execution of bank's section	Contractor with the participation of environmental specialist
					Everytime prior to commencement of execution and during execution of bank's section	Engineer
Soil/ environment	[I.2.1.10] Reduce (as far as possible) the minimum depth of excavations / trenches and shorten (as far as possible) the duration of works.	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement of execution and during execution of bank's section, but not less frequently than once a month	Contractor

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.1.11] Within the mid-embankment - not to dig up local depressions with a surplus of ground from excavations / trenches.				Once a month	Engineer
Soil/ environment (flora and fauna)	[I.2.1.12] Apply time constraints at the execution of works in connection with the requirements of conservation of valuable species of flora and fauna	Concerns all con-tract's structures on whole section of embankmen ts	Environmental Specialist Report, Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement of execution and during execution of bank's section, but not less frequently than once a month	Contractor
	[I.2.1.13] Apply the principle of protection of natural environmental elements which are important to maintain a proper state of ecological corridors at each of the WFS structures (coverage with woods and shrubs, water reservoirs, oxbow lakes, etc.).				Once a month	Engineer
Surface waters/fauna	[I.2.1.14] Run the modernisation of bridges in a manner which ensures the ecological functionality for animals moving through the valley of the Widawa River (appropriate lighting, dry land at river-bank areas above average water levels, natural character of river-bank areas under the bridges).	Concerns all bridges	Environmental Specialist Report, Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement of execution and during execution of bank's section, but not less frequently than once a month	Contractor
					Once a month	Engineer
Flora & fauna protection	[I.2.1.15] Limit the felling of trees and shrubs to an absolute minimum and perform it within the period from 15 October to the end of February, subject to point I.2.1.16 and I.2.1.29.	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement and after finishing of felling	Contractor
					Everytime prior to commencement and after finishing of felling, but not less frequently than once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	<p>[1.2.1.16] In case of an intention of felling of trees with their breast height over 50 cm, directly prior to the felling, the following should be performed with the participation of specialists:</p> <p>entomologist - a control of the occupancy of these trees by protected species of beetles, such as: Great Capricorn Beetle <i>Cerambyx cerdo</i>, Hermit Beetle <i>Osmoderma eremita</i>, chiropterologist - a control of the presence of bats</p> <p>In case of any collision of the planned works with the positions of the above-specified beetles and the need to cut down trees because of the technical and technological conditions - make a transfer of the above-mentioned animals to another place or places being suitable in respect of habitat requirements of particular species or not threatening to cause losses in the resources of other protected species. Make the transfer in accordance with the terms and conditions specified in the decision of the competent authority issued on the grounds of article 56 of the act dated 16 April 2004 on nature protection.</p>	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ² Additionally: Specialist report: entomologist report ³ chiropterologist report ³	During entire period of works realization Before starting the works, after the specialist's report stating the presence of beetles	Everytime prior to commencement and after finishing of felling Once a week during cutting of trees	Contractor Specialist - entomologist /Specialist - chiropterologist
					Everytime prior to commencement and after finishing of felling Once a month during cutting of trees	Engineer
Flora protection /soil protection	[1.2.1.17] Within the whole area of investment, secure all the trees and shrubs designated to be left (including the ones being habitats for Great Capricorn and Hermit Beetle against accidental damage by using the following methods:	Concerns all con-tract's structures on whole section of embankmen ts	Statement of Completion – Contractor's report ¹ – confirmed by the Engineer ²	The entire period of contract implementation	Everytime prior to commencement and after finishing of felling Once a week during cutting of trees	Contractor Specialist - entomologist /Specialist - chiropterologist
	[1.2.1.17.1] make tree-trunk protection (e.g. made of planks) fully around tree trunks up to the level of 1,5 m at minimum,					
	[1.2.1.17.2] make shields around shrubs (e.g. made of planks) up to the level of 1,0 m at minimum,				Everytime prior to commencement and after finishing of felling	Engineer
	[1.2.1.17.3] make dig-outs / trenches at a distance of not less than 2 m from tree trunks,					

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	<p>[1.2.1.17.4] do not store construction materials or solid / liquid waste which can alter the chemical characteristics of soil (e.g. salts, oils, fuels), or soil masses within the projection of tree crests,</p> <p>[1.2.1.17.5] execute earth works manually around skeletal roots. It is unacceptable to undercut skeletal roots,</p> <p>[1.2.1.17.6] in the period of hot weather, maximally reduce the time of exposure of roots to desiccation, while in the period of cold weather (frost) - to freezing.</p>				Once a month during cutting of trees	
Flora protection /soil protection	[1.2.1.18] Make dig-outs / trenches (conducted within the root systems of trees and shrubs) manually, if necessary, use drilling or jacking methods.	Concerns all contract's structures on whole section of embankments	Statement of Completion – Contractor's report ¹ – confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement of execution of bank's section Once a week during execution of each section of bank	Contractor
					Everytime prior to commencement of execution of bank's section Once a month during execution of each section of bank	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.1.19] At places being designated as spots of potential occurrence of protected plant species, prior to the start of works - remove a top layer of soil with herbaceous vegetation growing on it and put it at a place secured against destruction - in order to make use of the layer during re-cultivation works. Consult and settle the details of dealing with a layer of soil with a specialist in the field of botany.		Statement of Completion – Contractor's report ¹ confirmed by the Engineer ² Additionally: Specialist report: botanist report ³	Before starting the works, after the specialist's report – During entire period of works realization	Everytime prior to commencement of execution of bank's section Once a week during execution of each section of bank	Contractor
	Everytime prior to commencement of execution of bank's section Once a month during execution of each section of bank				Engineer	
	[I.2.1.20] In case of any collision of the planned works with the positions of protected species of plants - re-plant the above-specified plants - to another place or places being suitable in respect of habitat requirements of particular species or not threatening to cause losses in the resources of other protected species. Conduct the re-planting in accordance with the terms and conditions specified in the decision of the competent authority issued on the grounds of article 56 of the act dated 16 April 2004 on nature protection.		Statement of Completion – Contractor's report ¹ confirmed by the Engineer ² Additionally: Specialist report: botanist report ³	Before starting the works, after the specialist's report – During entire period of works realization	Everytime prior to commencement of execution of bank's section And after re-plantation	Contractor with the participation of environmental specialist
					Everytime prior to commencement of execution of bank's section And after re-plantation	Engineer
	[I.2.1.21] Consult and settle the detailed principles of conduct with protected species of plant individuals specified in point I.2.1.20 (including a selection of technology and places of target re-planting) with a specialist in the field of botany and include the settled solutions in the application		Statement of Completion – Contractor's report ¹ confirmed by the	Before starting the works, after the specialist's report – During entire period of works realization	Everytime prior to commencement of execution of bank's section	Contractor with the participation of environmental specialist

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	(request) for issuing an approval for the re-planting.		Engineer ² Additionally: Specialist report: botanist report ³		Everytime prior to commencement of execution of bank's section	Engineer
Flora protection /soil protection	[I.2.1.22] Prior to the start of construction works - conduct field inspection of places of execution of the works with the participation of a botanist or phyto-sociologist to locate places of occurrence and population of invasive plants (with the exception of Small-flowered Touch-me-not). After conspicuously locating and marking of places which are covered with invasive plants - take preventive measures during implementation of the investment, which will reduce the spread of those plants, including:	Concerns all con-tract's structures on whole section of embankmen ts	Statement of Completion – Contractor's report ¹ – confirmed by the Engineer ² Additionally: Specialist report: botanist report or phyto-sociologist report ³	During entire period of works realization Before starting the works, after the specialist's report	Everytime prior to commencement of execution of bank's section	Contractor with the participation of specialists in the field of botany or plant sociology
	[I.2.1.22.1] take off a layer of humus with invasive plants and remove them from the area of the works for composting or dispose in any other effective manner. It is unacceptable to mix the humus with the native vegetated humus,				Once a week during execution of each section of bank	
	[I.2.1.22.2] train and supervise persons performing works related to the elimination of invasive plants.				Everytime prior to commencement of execution of bank's section	Engineer
Fauna protection /soil protection	[I.2.1.23] In case of any collision of the planned works with the habitats of protected species of animals - make a transfer of the above-specified animals to another places or places being suitable in respect of habitat requirements of particular species or not threatening to cause losses in the resources of other protected species. Make the transfer in accordance with the terms and conditions specified in the decision of the competent authority issued on the grounds of article 56 of the act dated 16 April 2004 on nature protection.	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ – confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement of execution of bank's section	Contractor with the participation of specialists in the field of zoology
					Once a week during execution of each section of bank	
					Everytime prior to commencement of execution of bank's section	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
					Once a month during execution of each section of bank	
	[I.2.1.24] Consult and settle the detailed principles of conduct with protected species of animals specified in point I.2.1.23 (including a selection of technology and places of target transfers) with a specialist in the field of zoology and include the settled solutions in the application (request) for issuing an approval for the animal transfer.	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ² Additionally: Specialist report: specialist in the field of zoology report ³	During entire period of works realization Before starting the works, after the specialist's report which confirmed the occurrence of protected species	Everytime prior to commencement of execution and after finishing of bank's section, during realization once a week	Contractor/ Specialist in the field of zoology
					Everytime prior to commencement of execution and after finishing of bank's section, during realization once a month	Engineer
	[I.2.1.25] At the breeding sites of amphibians - plan construction works so that they should be conducted beyond the breeding season, namely beyond the period from 1 March up to 31 August. Depending on particular species occurring in water bodies (reservoirs) it is allowed to shorten the period referred to above upon consulting a specialist herpetologist. In case of failure to conduct the works beyond the period specified above, it is allowed to make use of solutions securing against the mortality (as a result of the conducted works and traffic) of animals travelling to and from breeding grounds. Technical solutions	Concerns all con-tract's structures on whole section of embankmen ts	Statement of Completion /Contractor's Report ¹ - confirmed by the Engineer ² Specialist Report – specialist in the field of herpetology ³ / Contractor's	Before Works commencement During entire period of works realization	Everytime prior to commencement of execution and after finishing of bank's section Once a week during execution of each section of bank	Contractor with specialist in the field of zoology / specialist in the field of herpetology

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	(e.g. fencing of construction sites with fences or use of traps in the form of grooves in the ground) to perform at sections with their length corresponding to the length of breeding amphibians places and the length not less than 150 meters from the boundaries of these places. Detailed technological and location solutions and principles of handling amphibians to be agreed with a specialist in the field of herpetology.		Report ¹ - confirmed by the Engineer ²		Everytime prior to commencement of execution and after finishing of bank's section Once a month during execution of each section of bank	Engineer
	[I.2.1.26] The application of methods securing water chambers, trenches, collectors etc. prior to the confinement of minor mammals, amphibians and reptiles within them. Therefore, these components (elements) should be designed to allow individual animals to get out of these structures. If this is impossible, these structures should be secured against the possibility of falling by animals or - at the stage of implementation - these elements should be monitored daily with trapped animals got out and transported beyond the site of works.	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a week during execution of each section of bank	Contractor
					Once a month during execution of each section of bank	Engineer
	[I.2.1.27] In the vicinity of especially environmentally valuable areas (within any protected areas, forests) - plan any works with their highest noise level in autumn and winter months (second half of October - end of February). Noise caused in the period from March up to July should not exceed 50 dB at a distance of 100 m from the site of works. Also due to the noise, in the period from April to October, any works should not be conducted at night in the vicinity of feeding of bats (large patches of trees, forests, water reservoir) - Greater Mouse-Eared Bat (<i>Myotis myotis</i>), Bechstein's bat (<i>Myotis bechsteinii</i>), Pond Bat (<i>Myotis dasycneme</i>) and Barbastelle Bat (<i>Barbastella barbastellus</i>).	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement of execution of bank's section Once a week during execution of each section of bank	Contractor
					Everytime prior to commencement of execution of bank's section Once a month during execution of each section of bank	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Fauna protection	[I.2.1.28] In order to protect valuable and rare species of birds (Corn Crane, Lapwing, Eurasian Bittern, Marsh-harrier) - conduct any works with the highest noise levels, planned within and in the close vicinity of their habitats in the period from October to March.	Concerns all contract's structures on whole section of embankments	Contractor's Report ¹ - confirmed by the Engineer ² Additionally: Specialist report: entomologist report ³ ornithologist report ³	During entire period of works realization	Everytime prior to commencement of execution of bank's section Once a week during execution of each section of bank	Contractor with specialists: ornithologist and entomologist
	[I.2.1.29] Reduce (as far as possible) felling / cutting down blackthorn brushwood (no grubbing) and perform between 15 July and 15 August under the supervision of specialists: ornithologist and entomologist.				Everytime prior to commencement of execution of bank's section Once a month during execution of each section of bank	Engineer
	[I.2.1.30] Start works and grubbing bush roots at the positions of cut blackthorn brushwood referred to in point I.2.1.29 at the earliest after 15 September and end by 15 March. Conduct construction / building works at a distance up to 100 m from the blackthorn brushwood - at day-time and with natural lighting only.	Concerns all contract's structures on whole section of embankments	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Everytime prior to commencement of execution of bank's section Once a week during execution of each section of bank	Contractor
					Everytime prior to commencement of execution of bank's section Once a month during execution of each section of bank	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[1.2.1.31] In case of no possibility to conduct the activities specified in point 2.1.29 and 2.1.30, perform felling / cutting down under the supervision of a specialist - entomologist. In case of finding eggs of Caterpillar Moth at blackthorn brushwood planned for felling / cutting down, move the felled / cut-down shrubs with eggs (in agreement with an entomologist) to a place ensuring the completion of their development cycle.	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ² Additionally: Specialist report: entomologist report ³ ornithologist report ³	During entire period of works realization	Everytime prior to commencement of execution of bank's section Once a week during execution of each section of bank	Contractor with specialist entomologist
					Everytime prior to commencement of execution of bank's section Once a month during execution of each section of bank	Engineer
	[1.2.1.32] Mow the area occupied to construct the embankment - within the found sites and potential habitats of Scarce Large Blue Butterfly <i>Phengaris Teleius</i> and Dusky Large Blue Butterfly <i>Phengaris Nausithous</i> , in particular within their habitats (identified as o-109 and o-119), one year prior starting the works, in the period from early June to late September, once a month. Mow at the height of not more than 10cm. Perform the mowing in the manner specified above (prior to the proceeding works) also in the following year (after starting the works).	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ² Additionally: Specialist report: entomologist report ³ ornithologist report ³	One year prior starting the works	Everytime prior to (a year before) commencement of execution of bank's section	Beneficiary (DZMiUW) before starting the works
					During realization before and after any mowing	Contractor
Environment / Reporting	[1.2.1.33] All works relating to execution of activities minimising adverse impact of the investment onto the environment - to be performed under constant environmental supervision run by competent specialists , considering the following principles: [1.2.1.33.1] on the basis of the conducted implementation-based monitoring, summary reports should be prepared, confirmed by specialists and submitted to the present Body (Institution) at least twice a year,	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ² Additionally: Specialists reports	During entire period of works realization Before starting the works, after the specialist's report	Twice a year, 3 months after finishing of each structure	Beneficiary (DZMiUW)
					Twice a year during realization	Contractor
					Twice a year during realization	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.1.33.2] the last report on implementation monitoring should be prepared within 3 months from the date of completion of the investment.					
	[I.2.1.34] Submit all the information about arrangements referring to the manner and scope of the conducted activities specified in I.2.1.5, I.2.1.16, I.2.1.20 - I.2.1.24 as well as documents confirming the participation of specialists (e.g. report on settlements and / or statement of specialists confirming the proper conduct of operations) to the Regional Director of the Environmental Protection in Wroclaw immediately upon making the settlements and / or implementation of these settlements.	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ² Additionally: Specialists reports	During entire period of works realization Before starting the works, after the specialist's report	After making arrangements	Beneficiary (DZMiUW)
					Everytime prior to commencement of execution of bank's section	Contractor with specialists
					Everytime prior to commencement of execution of bank's section	Engineer
Soil	[I.2.1.35] Design and project access roads leading to the construction site along the existing ground and hardened roads.	Concerns all con-tract's structures on whole section of embankmen ts	Statement of Completion – Contractor's report ¹ – confirmed by the Engineer ²	The entire period of contract implementation	Everyday	Contractor
	[I.2.1.36] Traffic of vehicles should run along technological routes. Shipments of machinery should be made as far as possible along fixed routes.				Once a month	Engineer
	[I.2.1.37] Upon termination of the construction works restore the places of temporary works to the previous state.					
Soil/Soil protection	[I.2.1.38] The technical state of working construction and transportation machines should be checked on a regular basis in order to eliminate the spillage of petroleum into the ground.	Concerns all con-tract's structures on whole section of embankmen ts	Statement of Completion – Contractor's report ¹ – confirmed by the Engineer ²	The entire period of contract implementation	Everyday during realization; immediately in case of the event	Contractor
	[I.2.1.39] In case of occurrence of any failure in the scope of contamination with petroleum products, the ground contaminated by an accident must be removed immediately and pass to the appropriate bodies holding authorisation for its further development.				Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Ground & under-ground water protection	[I.2.1.40] Any places designated for handling vehicles and machines must be periodically (until the completion) lined with insulating materials. Places for parking of vehicles should not be located: at the area where the Main Reservoir of Underground Waters GZWP-320 is located, at the area of the mid-embankment and directly by the slope of the flood protection embankment. Locate the background facilities of the construction site beyond the protective zone of underground water in-takes where the level of ground water is below 1,5 m below terrain level. [I.2.1.41] In the vicinity of machine garaging and filling there should a stand with sorbent serving to eliminate any leaks of petroleum substances.	Concerns all con-tract's structures on whole section of embankments	Statement of Completion – Contractor's report ¹ – confirmed by the Engineer ²	Before Works commencement	Before Works commencement and during realization once a week	Contractor
					Once a month	Engineer
Noise protection	[I.2.1.42] Works at acoustically-protected areas should be performed at day-time only - namely between 6 ⁰⁰ and 22 ⁰⁰ .	Concerns all con-tract's structures on whole section of embankments	Statement of Completion – Contractor's report ¹ – confirmed by the Engineer ²	The entire period of contract implementation	Everyday	Contractor
					Once a month	Engineer
Noise protection	[I.2.1.43] The construction site, access roads should be organised and maintained so as to minimise dusting and be located possible away from residential areas (in case of any works at areas near residential development, these works should be performed at daytime).	Concerns all con-tract's structures on whole section of embankments	Statement of Completion – Contractor's report ¹ – confirmed by the Engineer ²	The entire period of contract implementation	Everytime prior to localization of each construction site. Everyday during realization	Contractor
					Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Soil/ environment	[I.2.1.44] Places of storage of soil masses should be properly secured in order to reduce their dusting.	Concerns all con-tract's structures on whole section of embankmen ts	Statement of Completion – Contractor's report ¹ – confirmed by the Engineer ²	The entire period of contract implementation	Everytime prior to commencement. Everyday during realization	Contractor
	[I.2.1.45] Do not allow long-term operation of internal combustion engines of machinery and construction vehicles at a standstill (limit emissions at the so-called stage of idling speed).				Everytime prior to commencement. Once a month during realization	Engineer
	[I.2.1.46] The execution of works should be organised taking into consideration the capabilities to conduct works synchronously at several locations spaced around 300 - 500 m from each other (one another), in a manner which minimises the aggregation of pollutant concentrations.					
	[I.2.1.47] In the immediate vicinity of residential buildings limit the number of machines working simultaneously at the given distance, in order to minimise direct impacts of emissions. Car parking lots should not be located in these areas.					
Soil/ environment	[I.2.1.48] Organise all the works in such a manner as to minimise the amount of generated wastes and reduce their negative impact on the environment. All the wastes generated at the implementation of the investment should be categorised and stored separately in containers or at places being enclosed and adapted for this purpose, under conditions which prevent dusting and dispelling light fractions, and their negative effects on the environment and to ensure their gradual delivery and acceptance by operators with appropriate authorisation for their further development.	Concerns all con-tract's structures on whole section of embankmen ts	Statement of Completion – Contractor's report ¹ – confirmed by the Engineer ²	The entire period of contract implementation	Everytime prior to commencement and Everyday during realization	Contractor
	[I.2.1.49] Hazardous waste should be categorised and stored in designated containers placed at hardened and protected areas secured against access of third parties until their transfer to entities having the appropriate permission for their disposal.				Everytime prior to commencement. Once a month during realization	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.1.50] Ground mass generated during the investment should be exploited in accordance with their intended use under existing legislation, taking into account the possibility of reuse to strengthen the rebuilt and upgraded floor protection embankments					
Soil. Ground & under- ground water protection	[I.2.1.51] Social and domestic sewage must be collected in leak-proof, drain-less tanks and ensure that they are regularly collected by authorised bodies.	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ² /entities receiving confirmation	During entire period of works realization	Once a month during implementation	Contractor
					Once a month during implementation	Engineer
Local people	[I.2.1.52] The implementation of the investment cannot cause - regardless of the level of water flows - increasing any flood risk of the areas located below the places covered by the application.	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ² /entities receiving confirmation	During entire period of works realization	Once a month during implementation	Contractor
	[I.2.1.53] In the course of conducting the works there can no difficulties occurred in the manner of making use of the areas being adjacent to the projected Works Contract.				Once a month during implementation	Engineer
Surface waters	[I.2.1.54] Rainfall waters from within the areas at the embankments (re-built and under construction) - prior to entering the river - should be treated with sedimentation in ditches or mechanically cleaned.	Concerns all con-tract's structures on whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ² /entities receiving confirmation	During entire period of works realization	Everyday during the period of drainage	Contractor
	[I.2.1.55] Waters from draining the foundation bottoms for the embankment culverts should be treated with sedimentation in ditches prior to entering the receiver - the river. [I.2.1.56] Any works should not be conducted at the period of intensive precipitation. Grooves preventing direct out-flows of contaminated waters into local trenches should be made.				Once a month	Engineer
Air protection	[I.2.1.57] Embed all the transported masses directly into the embankment body and compact them to the required indicators levels, with no their indirect unloading and storage.	Concerns all con-tract's structures on whole	Contractor's Report ¹ - confirmed by the Engineer ² /entities	During entire period of works realization	Every day during the period of embankments construction	Contractor

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
		section of embankmen ts	receiving confirmation		Once a month	Engineer
Surface waters	[I.2.1.58] At the stage of operation - ensure proper operation of machines and equipment for pre-treatment of rainfall waters discharged from communication facilities / structures.	Concerns all bridges	Contractor's Report ¹ - confirmed by the Engineer ² /entities receiving confirmation	During entire period of works realization	Once a month during the period of bridges construction and modernization	Contractor
					Once a month during the period of bridges construction and modernization	Engineer
Monitoring for WFS structure no. 40 Odra - Widawa Transfer - Flap weir						
Environment/ Flora	[I.2.2.1] At the stretch of the Channel at km 2+600 - 3+000, conduct building (construction) works at the opposite side of the over-flow in relation to the land patch being a mosaic of habitats - Cnidium meadows (<i>Cnidion dubii</i> , habitat code - 6440) and low-land and mountain fresh meadows used extensively (<i>Arrhenatherion elatioris</i>) (6510) (identified as h-54) as well as the position of Fen Violet (identified as f-1). Locate technological routes and storage places beyond within and in the direct vicinity of the above-specified habitats. It is allowed to conduct works required to build a flow-over at the side of the habitat, within a line up to 10 m from the structure under consideration.	km 2+600 – 3+000	Contractor's Report ¹ - confirmed by the Engineer ² / Additionally: Environmental Specialist Report	Before Works commencement as well as during entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
	[I.2.2.2] At the stretch of the Channel at km 2+500 - 2+600 - do not conduct works within and in the direct vicinity of the habitat patch - willow, poplar, alder and ash carr within and in the direct vicinity of the 91E0* habitat (identified as h-55).	km 2+500 – 2+600	Contractor's Report ¹ - confirmed by the Engineer ² / Additionally: Environmental Specialist Report	Before Works commencement and during entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
Environment/ Fauna	[I.2.2.3] Do not fell / cut down trees which are the habitat of Great Capricorn and Hermit Beetle located at km 2+700 of the Channel (identified as o-1). Building / construction works	km 2+700	Contractor's Report ¹ - confirmed by the	Before Works commencement and during entire	Once a month during implementation	Contractor

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	should be performed beyond the projection area of tree crests forming the above-specified habitat. Within the boundaries of the area no storage sites and technological routes should be located as well. It is permitted only to make use of the existing roads (even if they are located within the projection area of tree crests).		Engineer ² / Additionally: Environmental Specialist Report	period of works realization	Once a month	Engineer
Environment/ Fauna	[1.2.2.4] At the section at km 2+200 - 2+800 of the Channel, within the places of occurrence of amphibians (identified as the positions no. p-1, p-2, p-3 and p-73) and reptiles (identified as the positions no. g-2 and g-43), building / construction works should be conducted beyond the above-specified positions. No storage sites and technological routes should be located within their boundaries	km 2+200 – 2+800 of the Channel	Contractor's Report ¹ - confirmed by the Engineer ² / Additionally: Specialist Report	Before Works commencement and during entire period of works realization	Once a week during implementation	Contractor
					Once a month	Engineer
Flora and fauna	[1.2.2.5] At the sections at km 2+500 - 2+600 and km 2+700 of the Channel, do not locate any sites of storage of materials, technological routes and places of stoppage of machines / equipment in the direct vicinity of water reservoirs as well as within meadows constituting the breeding habitat of Eurasian Bittern, Grasshopper Warbler, Great Reed Warbler (at km 2+500 - 2+600 of the channel, at km 2+700 of the river). At km 2+500 - 2+600 of the channel, perform works at high noise levels at the period from 15 October up to the end of February.	km 2+500 - 2+600 and km 2+700 of the Channel	Contractor's Report ¹ - confirmed by the Engineer ² / Additionally: Specialist Report	Before Works commencement and during entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
Environment/s urrounding area	[1.2.2.6] Perform building / constructions works under the cover of a temporary shield raised up to the ordinate of 120,50 m above sea level at the side of the Odra River.	Inlet to the Channel from the Odra River	Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement and during entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
	[1.2.2.7] All the earth works should be conducted within retaining walls.	Flap weir	Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement and during entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Surface waters	[I.2.2.8] Drain water from trenches by means of pipelines beyond the temporary earth shield into the ditch (the existing ditch at the bottom of the inlet channel) and further to the Widawa River. At the inlet of the pipelines into the ditch - the so-called sumps - in order to reduce the speed of flow and to allow sediment of suspensions.	Flap weir	Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement and during entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
Monitoring for WFS structure no. 41.1 Reconstruction of the road bridge – Strachocinski Bridge						
Flora and fauna	[I.2.3.1] Conduct works (including: felling / cutting down trees and shrubs) only within a line not exceeding 10 m from the bridge and in case of the construction of a temporary bridge within a line not exceeding 10 m from this bridge	Road bridge – Strachocinski	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
Soil	[I.2.3.2] Do not locate storage sites and parking lots of building / construction machines in the mid-embankment.	Road bridge – Strachocinski	Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement Once a month during implementation	Contractor
					Once a month	Engineer
Flora and fauna	[I.2.3.3] Execute the strengthening of the channel bottom and slopes with gabions only at the projection of a road lane. Apply stone coverage at other sections.	Road bridge – Strachocinski	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
Environment	[I.2.3.4] All the earth works should be conducted within retaining walls	Road bridge – Strachocinski	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
	[I.2.3.5] Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive soils should ensure the tightness of a particular chamber.				Once a month	Engineer
Surface waters	[I.2.3.6] Discharge waters pumped out of trenches by means of pipelines to the existing ditch at the bottom of the channel. Execute sumps at the outlet of the pipelines. Such method of draining of trenches as well as discharging of waters will maximally reduce its impact onto adjacent areas.	Road bridge – Strachocinski	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.3.7] Catch rainfall waters through rainwater drains with the tight (sealed) drainage system. Prior to discharging to the receiver, waters should be pre-cleaned in the settler with its capacity of 3,5 m ³ and lamella separator (clarifier) with its flow from 10 up to 100 dm ³ /s.					
Monitoring for WFS structure no. 41.2 Reconstruction of the railway bridge – Strachocinski Bridge						
Flora and fauna	[I.2.4.1] Conduct works (including: felling / cutting down trees and shrubs) only within a line not exceeding 10 m from the bridge.	Railway bridge – Strachocins ki	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
Soil	[I.2.4.2] Do not locate storage sites and parking lots of building / construction machines in the mid-embankment.	Railway bridge – Strachocins ki	Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement Once a month during implementation	Contractor
					Once a month	Engineer
Flora and fauna	[I.2.4.3] Execute the strengthening of the channel bottom and sloes with gabions only at the projection of a road lane. Apply stone coverage at other sections.	Railway bridge – Strachocins ki	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
Environment	[I.2.4.4] Secure the railway embankment in the course of conducting earth works. All the earth works should be conducted within retaining walls. [I.2.4.5] Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive soils should ensure the tightness of a particular chamber.	Railway bridge – Strachocins ki	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
Surface waters	[I.2.4.6] Discharge waters pumped out of trenches by means of pipelines to the existing ditch at the bottom of the channel. Execute sumps at the outlet of the pipelines. Such method of draining of trenches as well as discharging of waters will maximally reduce its impact onto adjacent areas.	Railway bridge – Strachocins ki	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
Monitoring for WFS structure no. 41.3 Redevelopment of the channel						

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Flora and fauna	[I.2.5.1] Do not conduct works at both river banks at the same time (leave one bank undisturbed with works conducted at the other bank).	On whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
Fauna	[I.2.5.2] At the time of temporary storage of extracted materials mined from the bottom of the channel - make a review of places projected for storage of newly-extracted materials and collect individuals of mussel reaching the top surface of excavated material. The collected individuals should be moved and released at places ensuring their safety (e.g. at sections of completed works related to the implementation of the Works Contract). Consult and develop the detailed method of reviewing, collecting and handling of individuals of mussel with the participation of a specialist in the field of zoology.	On whole section of embankmen ts	Specialist Report- specialist in the field of zoology Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	During the execution of the works for each dumping site	Contractor with specialist in the field of zoology
					Once a month and after finishing of activity	Engineer
Flora and fauna	[I.2.5.3] Do not use gabion baskets and mattresses to strengthen the channel bottom and slopes (apart from sections under re-built bridges as well as within and in the immediate vicinity of the weir)	On whole section of embankmen ts	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
Flora and fauna	[I.2.5.4] Form the new river-bank slopes in a manner which ensures the variation of the course of the line, height and tilt of these river-bank slopes, formation of creeks and bays within these river-banks as well as enabling the development of communities of river-bank vegetation at some of their slopes. Consult and develop detailed solutions in terms of location, design and technology - in consultation with specialists in the field of zoology (including ichthyology and ornithology) as well as botany - plant sociology.	On whole section of embankmen ts	Specialists Report Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	On stage of designing Once a month during implementation	Contractor
					Once a month	Engineer
Monitoring for WFS structure no. 42.1 Reconstruction of the road bridge B. Krzywoustego						
Environment/fl ora	[I.2.6.1] Do not locate storage sites and technological routes at the section of the Widawa River at km 17+250 - 19+400 within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-63) as well as the location of Fen Violet (identified as f-8). Execute the works at the line not exceeding 10 m from the bridge.	km 17+250 – 19+400	Specialists Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement Once a month during implementation	Contractor
					Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
					during implementation	
Environment/fl ora and fauna	[I.2.6.2] All the earth works should be conducted within retaining walls. [I.2.6.3] Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive soils should ensure the tightness of a particular chamber.	Road bridge B. Krzywoustego	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month during implementation	Engineer
Surface waters	[I.2.6.4] Discharge waters pumped out of trenches by means of pipelines to the existing ditch at the bottom of the channel. Execute sumps at the outlet of the pipelines. Such method of draining of trenches as well as discharging of waters will maximally reduce its impact onto adjacent areas.	Road bridge B. Krzywoustego	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
	[I.2.6.5] Catch rainfall waters through rainwater drains with the tight (sealed) drainage system. Prior to discharging to the receiver, water from the (northern and southern) bridge structures should be pre-cleaned in the settlers with their capacity of 3,5 m ³ each and lamella separators with their flow from 15 up to 150 dm ³ /s each.				Once a month during implementation	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Monitoring for WFS structure no. 42.1.1 Reconstruction of the railway bridge B. Krzywoustego						
Flora and fauna	[I.2.7.1] Conduct works (including: felling / cutting down trees and shrubs) only within a line not exceeding 10 m from the bridge.	Railway bridge B. Krzywoustego	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month during implementation	Engineer
Environment/flora and fauna	[I.2.7.2] All the earth works should be conducted within retaining walls.	Railway bridge B. Krzywoustego	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
	[I.2.7.3] Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive soils should ensure the tightness of a particular chamber.				Once a month during implementation	Engineer
Surface waters	[I.2.7.4] Discharge waters pumped out of trenches by means of pipelines to the existing ditch at the bottom of the channel. Execute sumps at the outlet of the pipelines. Such method of draining of trenches as well as discharging of waters will maximally reduce its impact onto adjacent areas.	Railway bridge B. Krzywoustego	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month during implementation	Engineer
Monitoring for WFS structure no. 44.1 Channel - the new right-bank embankment						
Flora	[I.2.8.1] Do not conduct building / construction works, do not locate storage sites and technological routes at the section of the Channel at km 0+000 - 1+300 within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-57). Perform the construction of the embankment from its land-side.	km 0+000 – 1+300	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist
					Once a month during implementation	Engineer
Monitoring for WFS structure no. 44.11 Channel - the new left-bank embankment						
Flora and fauna	[I.2.9.1] Do not conduct building / construction works at the section of the Channel at km 1+900 within and in the direct vicinity of the patch of the habitat - Old river beds and natural eutrophic water reservoirs 3150 (identified as h-56).	km 1+900 0+000 –	Environmental Specialist Report Contractor's Report ¹ - confirmed by the	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.9.2] At km 0+000 - 1+300 of the Channel within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-57) and the position of Fen Violet (identified as f-2) - do not perform building / construction works, do not locate storage sites and technological routes. Perform the construction of the embankment from its land-side.	1+300 of the Channel	Engineer ²		Once a month	Engineer
Fauna	[I.2.9.3] At the section at km 1+900 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-5), building / construction works should be performed beyond the above-specified position. No storage sites and technological routes should be located within the boundaries of the position.	km 1+900	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the specialist in the field of zoology
	[I.2.9.4] At the section at km 1+700 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-6), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	km 1+700			Once a month	Engineer
	[I.2.9.5] At the section at km 2+000 of the Channel, within the place of occurrence of reptiles (identified as the habitat no. p-44), building / construction works should be performed beyond the above-specified position. No storage sites and technological routes should be located within the boundaries of the position.	km 2+000				

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.9.6] At the section at km 1+800 of the Channel, within the place of occurrence of reptiles (identified as the habitat no. p-3), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	km 1+800				
Flora and fauna	[I.2.9.7] At the section at km 1+700 and 1+900 of the Channel, do not perform works, do not locate technological routes and parking lots of machines and equipment, do not store materials within meadows and brushwood constituting the breeding habitat of Red-backed Shrike and Great Reed Warbler overgrowing old river beds at the land-side.	1+700 and 1+900	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist
					Once a month	Engineer
Monitoring for WFS structure no. 44.12 Swojczyce – new embankment						
Flora and fauna	[I.2.10.1] At the section at km 0+000 - 1+300 of the Channel within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-57) - do not conduct building / construction works, do not locate storage sites and technological routes. Perform the construction of the embankment from its land-side.	0+000 – 1+300 of the Channel	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the specialists: botanists and entomologist
	[I.2.10.2] At the section at km 20+100 - 20+250 of the Widawa River, at the direct vicinity of the position of Dusky Large Blue and Scarce Large Blue (identified as o-11), perform building / construction works only at the land-side of the embankment (alternatively - at its front). Do not occupy land within the mid-embankment. Locate storage sites and technological routes beyond the area of the above-specified position.	km 20+100 – 20+250 of the Widawa River			Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Flora and fauna	[I.2.10.3] At the section at km 20+100 - 20+400 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-82), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	km 20+100 – 20+400 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the specialist in the field of zoology
	[I.2.10.4] At the section at km 20+100 - 20+400 of the Widawa River, within the place of occurrence of reptiles (identified as the habitat no. g-5), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	km 20+100 – 20+400 of the Widawa River			Once a month	Engineer
	[I.2.10.5] At the sections at km 0+500 of the Channel and at km 20+200, 20+400, 20+500, 20+600 of the Widawa River, do not perform works within brushwood constituting the breeding habitat of Red-backed Shrike, do not locate technological routes and parking lots of machines and equipment, do not store materials.	km 0+500 of the Channel and km 20+200, 20+400, 20+500, 20+600 of the Widawa River				
Monitoring for WFS structure no. 44.13 Kowale - new embankment						
Flora and fauna	[I.2.11.1] At the section at km 17+250 - 19+400 of the Widawa River, within the patch of the habitat - Cnidium meadows 6440 (identified as h-63) and the position of Fen Violet (identified as f-8), execute the construction of the embankment from its front (at the same time with limiting	km 17+250 – 19+400 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified habitats at the embankment crest; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitats.		Engineer ²			
					Once a month	Engineer
Flora and fauna	[I.2.11.2] At km around 17+400 of the Widawa River, in the direct vicinity of the position of Hermit Beetle (identified as o-14) building / construction works should be conducted beyond the projection area of tree crests. Do not locate storage sites and technological routes within the boundaries of the area.	km ca. 17+400 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor
					Once a month	Engineer
Flora and fauna	[I.2.11.3] Do not clear melioration ditches at the sections at km 19+500 - 20+000, 19+100 - 19+300, 19+000 - 19+100, 17+500 - 19+000 of the Widawa River.	km 19+500 – 20+000, 19+100 – 19+300, 19+000 – 19+100, 17+500 – 19+000 of the Widawa River	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
Flora and fauna	[I.2.11.4] At the section at km 19+100 - 19+300 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-55), building / construction works should be performed beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.	km 19+100 – 19+300	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor
					Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.11.5] At the section of the embankment at 17+200 - 19+400 of the Widawa River, within the places of occurrence of amphibians (identified as the habitat no. p-87) and reptiles (identified as the habitat no. g-11 of the Report) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. At the section of the embankment crossing the habitat - perform building / construction works from the embankment front (at the same time reducing the area used in the course of building / construction works) towards the embankment base. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	km 17+200 – 19+400 of the Widawa River				
	[I.2.11.6] At the section at km 19+200 - 19+400 of the Widawa River, within the place of occurrence of reptiles (identified as the habitat no. g-7), building / construction works should be performed beyond the above-specified position. No storage sites and technological routes should be located within the boundaries of the position.	km 19+200 – 19+400 of the Widawa River				
Fauna	[I.2.11.7] Do not locate technological routes and parking lots of machines and equipment, do not store materials within meadows and shrubs constituting the breeding habitat of Red-backed Shrike, Great Reed Warbler and Stone-chat within the places of occurrence of birds identified as: p-68 (at km 18+200 of the river), p-71 (at km 17+700 of the river), p-67 (at km 18+300 of the river), p-66 (at km 18+500 of the river), p-69 (at km 18+100 of the river), p-70 (at km 18+000 of the river). Perform all the works at the land-side within a line not exceeding 30 m from the embankment.	km 18+200 and km 17+700 km 18+300 km 18+500 km 18+100 km 18+000 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor
					Once a month	Engineer
Monitoring for WFS structure no. 45.6 Kowale - modernisation of the embankment						
Flora and fauna	[I.2.12.1] At the section at km 19+500 - 20+200 of the Widawa River, within the patch of the habitat - Cnidium meadows 6440 (identified as h-62) and the positions of Fen	km 19+500 – 20+200 of the Widawa	Environmental Specialist Report Contractor's	Before Works commencement, During entire	Before Works commencement, Once a month	Contractor

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	Violet (identified as f-5) - perform all the works within the mid-embankment only at a line of the existing ground road running at the route of the projected embankment. Locate places of storage of materials as well as technological routes only at the land-side of the embankment.	River	Report ¹ - confirmed by the Engineer ²	period of works realization	during implementation Once a month	 Engineer
Fauna	[I.2.12.2] At the section at km 20+100 - 20+250 of the Widawa River, at the direct vicinity of the position of Dusky Large Blue and Scarce Large Blue (identified as o-11), perform building / construction works only at the land-side of the embankment (alternatively - at its front). Do not occupy land within the mid-embankment. Locate storage sites and technological routes beyond the area of the above-specified position.	km 20+100 – 20+250 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation Once a month	Contractor Engineer
Flora and fauna	[I.2.12.3] Do not clear melioration ditches at the sections at km 19+500 - 20+000, 19+100 - 19+300, 19+000 - 19+100, 17+500 - 19+000 of the Widawa River.	km 19+500 – 20+000, 19+100 – 19+300, 19+000 – 19+100, 17+500 – 19+000 of the Widawa River	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation Once a month	Contractor Engineer
Flora and fauna	[I.2.12.4] At the section at km 19+500 - 20+400 of the Widawa River, within the places of occurrence of amphibians (identified as the habitats no. p-49 and p-82) and reptiles (identified as the habitats no. g-5 and g-6) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitats. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	km 19+500 – 20+400 Of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation Once a month	Contractor Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Flora and fauna	[I.2.12.5] At the sections at km 20+100, 19+800, 19+600 of the Widawa River - do not locate technological routes and parking lots of machines and equipment, do not store materials within meadows and bushes constituting the breeding habitats of Red-backed Shrike and Grasshopper Warbler.	19+800, 19+600 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor
					Once a month	Engineer
Monitoring for WFS structure no. 44.2 Wilczyce - new embankment						
Flora and fauna	[I.2.13.1] At the sections at km 22+100 - 22+300 and 22+800 - 23+000 of the Widawa River, within the place of occurrence of Ray-finned fish Sabanejewia aurata (identified as the habitat no. r-2) - do not perform any works within the river-bed, even to secure concave river-banks in order to protect the embankments. Securing the embankments should be made with no interference within these river-banks (at their current state). Perform earth works and building / construction activities from the land only. Designate technological routes outside the mid-embankment only.	km 22+100 - 22+300 and 22+800 – 23+000 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor
					Once a month	Engineer
Flora and fauna	[I.2.13.2] At the section at 23+000 - 24+000 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-41) and reptiles (identified as the habitat no. g-46 of the Report) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front, at the same time limiting the area used in the course of building / construction works to lines of land with their width not exceeding 5 m from the embankment base. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	km 23+000 – 24+000 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialists
					Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.13.3] At the section at km 22+300 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-43) and reptiles (identified as the habitat no. g-48), building / construction works should be conducted beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.	km 22+300 of the Widawa River				
Flora and fauna	[I.2.13.4] At the sections at km 23+000, 20+700, 18+100 of the Widawa River, within the future mid-embankment, do not locate technological routes and parking lots of machines and equipment, do not store materials within the boundaries of the breeding habitats of Corn Crake and Grasshopper Warbler.	km 23+000, 20+700, 18+100 of the Widawa River,	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor
					Once a month	Engineer
Flora and fauna	[I.2.13.5] At the section at km 23+000 of the Widawa River, within the breeding habitat of Red-backed Shrike, do not locate technological routes and parking lots of machines and equipment, do not store materials. At the section of the embankment crossing the above-specified habitat, limit all the works together with felling / cutting down of trees and shrubs to the width of the embankment base (footing).	km 23+000 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist
					Once a month	Engineer
Monitoring for WFS structure no. 45.5 Modernisation of the embankment						
Flora and fauna	[I.2.14.1] At the section at km 2+600 - 3+000 of the Channel, conduct building (construction) works at the opposite side of the over-flow in relation to the land patch being a mosaic of habitats - Cnidium meadows (Cnidion dubii, habitat code - 6440) and low-land and mountain fresh	km 2+600 – 3+000 of the Channel	Environmental Specialist Report Contractor's Report ¹ - confirmed by the	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	meadows used extensively (<i>Arrhenatherion elatioris</i>) (6510) (identified as h-54) as well as the position of Fen Violet (identified as f-1). Locate technological routes and storage places beyond within and in the direct vicinity of the above-specified habitats. It is allowed to conduct works required to build a flow-over at the side of the habitat, within a line up to 10 m from the structure under consideration. [I.2.14.2] At the section at km 2+500 - 2+600 of the Channel, do not conduct works within and in the direct vicinity of the habitat patch - willow, poplar, alder and ash carr *91E0 (identified as h-55).	km 2+500 – 2+600 of the Channel	Engineer ²		Once a month	Engineer
Flora and fauna	[I.2.14.3] At the section at km 2+700 - 3+000 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-74) and reptiles (identified as the habitat no. g-42 and g-43), building / construction works should be conducted beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.	km 2+700 – 3+000 of the Channel	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the zoologist
					Once a month	Engineer
Flora and fauna	[I.2.14.4] At the sections at km 2+700, km 2+500, km 2+800 - 2+900, km 3+000 of the Channel, do not locate technological routes and parking lots of machines and equipment, do not store materials in the direct vicinity of water reservoirs and brushwood as well as at meadows constituting the breeding habitats of Grasshopper Warbler, Great Reed Warbler and Red-backed Shrike. Conduct all the works at the land-side of the embankment.	km 2+700, km 2+500, km 2+800 - 2+900, km 3+000 of the Channel	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist
					Once a month	Engineer
WFS structure No. 45.2 Wilczyce - modernisation of the embankment						
Flora	[I.2.15.1] At the section at km 21+500 - 21+900 of the Widawa River, within the habitat patch - Cnidium meadows 6440 (identified as h-1) - conduct all the works at the land-side of the embankment. Locate places of storage of materials and technological routes only at the land-side of the embankment and beyond the area of the above-specified habitat.	km 21+500 – 21+900 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist
					Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.15.2] At the section at km 21+500 - 21+750 of the Widawa River, within the position of Common Snowdrop (identified as f-3), limit felling / cutting down of riverine trees and brushwood to the width of the embankment base. Locate technological routes only at the land-side of the embankment making use of the existing network of mid-field paths (roads) to the furthest possible extent. Locate places of storage of materials at the land-side of the embankment beyond the area of forest habitats.	km 21+500 – 21+750 of the Widawa River				
Flora and fauna	[I.2.15.3] At the sections at km 21+750, 21+700, 19+300 - 21+700 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified as the habitats no. o-19, o-20 and o-27). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).	km 21+750, 21+700, 19+300 – 21+700 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist
					Once a month	Engineer
	[I.2.15.4] At the section at km 21+000 - 21+500 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-77) and reptiles (identified as the habitat no. g-52), building / construction works should be conducted beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.	km 21+000 – 21+500 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the zoologist
	[I.2.15.5] At the section at km 20+800 - 21+900 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-76) and reptiles (identified as the habitat no. g-51) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and	km 20+800 – 21+900 of the Widawa River			Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.					

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Flora and fauna	[I.2.15.6] At the sections at km 21+700 and 21+800 of the Widawa River, within the mid-embankment, do not locate technological routes and parking lots of machines and equipment, do not store materials in the breeding habitats of Grasshopper Warbler and River Warbler. Conduct all the works at the land-side of the embankment.	km 21+700 and 21+800 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation Once a month	Contractor with participation of the environmental specialist Engineer
Monitoring for WFS structure no. 45.1 Modernisation of the embankment						
Flora and fauna	[I.2.16.1] At km 0+000 - 1+300 of the Channel within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-57) and the position of Fen Violet (identified as f-2) - do not perform building / construction works, do not locate storage sites and technological routes. Conduct the construction of the embankment at the land-side of the embankment and beyond the area of the above-specified habitats.	km 0+000 – 1+300 of the Channel	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist
	[I.2.16.2] At the section at km 0+000 - 1+300 of the Channel - plan refurbishment and transportation works in such a manner to bypass the position of French rose (<i>Rosa Gallica</i>).				Once a month	Engineer
Flora and fauna	[I.2.16.3] At the sections at km 21+500, 21+700 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified as the habitats no. o-9, o-8). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).	km 21+500, 21+700 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist
					Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Flora and fauna	[I.2.16.4] At the sections at km 0+500 of the channel and at km 21+400 of the Widawa River, within the mid-embankment, do not locate technological routes and parking lots of machines and equipment, do not store materials in the breeding habitats of Grasshopper Warbler and Corn Crake. Conduct works at the land-side of the embankment.	km 0+500 of the Channel and km 21+400 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist
					Once a month	Engineer
Monitoring for WFS structure no. 46.1 Demolition of the embankment						
Flora and fauna	[I.2.17.1] At the section at km 1+900 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-5), building / construction works should be performed beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat. [I.2.17.2] At the section at km 1+700 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-6), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.	km 1+900 of the Channel	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the zoologist
		km 1+700 of the Channel			Once a month	Engineer
	[I.2.17.3] At the section at km 2+000 of the Channel, within the place of occurrence of reptiles (identified as the habitat no. p-44), building / construction works should be performed beyond the above-specified position. No storage sites and technological routes should be located within the boundaries of the position.	km 2+000 of the Channel				
	[I.2.17.4] At the section of the embankment at km 1+800 of the Channel, within the place of occurrence of reptiles (identified as the habitat no. p-3), perform building / construction works only within the embankment base, making use of the technology of work from the embankment	km 1+800 of the Channel				

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.					
Flora and fauna	[I.2.17.5] At the section of the embankment at km 0+800 of the Channel, conduct the demolition of the embankment from the embankment front leaving shrubs at the land-side. Locate access roads and places of storage of materials at the land-side of the embankment beyond the boundaries of shrubs constituting the habitat of Red-backed Shrike.	km 0+800 of the Channel	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor
					Once a month	Engineer
Monitoring for WFS structure no. 44.3 Zgorzelisko (to B. Krzywoustego street) - new embankment						
Flora and fauna	[I.2.18.1] At the section at km 20+500 - 21+000 of the Widawa River - do not perform building / construction works within and in the direct proximity of the habitat patch - old river beds and natural eutrophic water reservoirs 3150 (identified as h-3).	km 20+500 – 21+000 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist
	[I.2.18.2] At the sections at km 18+700 - 19+600 and 19+800 - 21+900 of the Widawa River, within the habitat patches - Cnidium meadows 6440 (identified respectively as h-7 and h-1) - do not conduct building / construction works, do not locate storage sites and technological routes. Conduct the construction of the embankment at the land-side of the embankment and beyond the area of the above-specified habitats.	km 18+700 – 19+600 and 19+800 – 21+900 of the Widawa River			Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.18.3] At the section at km 17+300 - 19+200 of the Widawa River, within the habitat patch - Cnidium meadows 6440 (identified as h-8) - execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified habitat at the embankment crest; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.	km 17+300 – 19+200 of the Widawa River				

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.18.4] At the section at km 20+400 - 21+200 of the Widawa River, within the habitat patch - willow, poplar, alder and ash carr (identified as h-2), limit felling / cutting down of riverine trees and brushwood to the width of the embankment base and execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified habitat at the embankment crest; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.	km 20+400 – 21+200 of the Widawa River				
	[I.2.18.5] At the section at km 17+300 - 17+500 of the Widawa River - conduct works at a distance exceeding 20 m from the habitat patch - willow, poplar, alder and ash carr *91E0 (identified as h-9).	km 17+300 – 17+500				
	[I.2.18.6] At the section at km 19+500 - 20+700 of the Widawa River, within the habitat patch - low-land and mountain fresh meadows used extensively 6510 (identified as h-4) - execute the construction of the embankment at the section running through the habitat from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified habitat at the embankment crest; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.	km 19+500 – 20+700 of the Widawa River				
Flora and fauna	[I.2.18.7] At the sections at km 19+200 - 19+400 and 20+500 - 21+000 of the Widawa River - locate all the building / construction works as well as storages of materials and technological routes at a distance not exceeding 15 m from the embankment so that not to cause damage at the positions of Yellow Water-lily and White Water-lily (identified as f-4 and f-7).	km 19+200 – 19+400 and 20+500 – 21+000 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist
					Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[I.2.18.8] At the section at km 19+500 - 20+000 of the Widawa River - locate all the building / construction works as well as storages of materials and technological routes at a distance not exceeding 20 m from the embankment so that not to cause damage at the position of Broad-leaved Helleborine (identified as f-6).	km 19+500 – 20+000 of the Widawa River				
Flora and fauna	[I.2.18.9] At the sections at km 18+000, 19+500, 19+300 - 21+700 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified respectively as o-29, o-28 and o-27). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).	km 18+000, 19+500 – 19+600, 19+300 – 21+700 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the environmental specialist
	[I.2.18.10] At the section at km 18+800 - 19+200 of the Widawa River, at the direct vicinity of the position of Dusky Large Blue and Scarce Large Blue (identified as o-33), perform building / construction works only at the land-side of the embankment (alternatively - at its front). Do not occupy land within the mid-embankment. Locate storage sites and technological routes beyond the area of the above-specified position.	km 18+800 – 19+200 of the Widawa River			Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Flora and fauna	[I.2.18.11] Do not clear melioration ditches at the sections at km 16+500, 16+200, 16+100 and 18+000 - 19+500 of the Widawa River.	km 16+500, 16+200, 16+100 and 18+000 – 19+500 of the Widawa River,	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
Flora and fauna	[I.2.18.12] Within the places of occurrence of amphibians identified as follows: p-125 (km 18+700 - 19+300 within the river), p-86 (km 19+300 - 19+800 within the river), p-8 (km 20+600 - 20+900 within the river), p-84 (km 19+700 - 20+600 within the river), p-51 (km 19+500 within the river), p-52 (km 19+400 within the river), p-54 (km 18+000 - 19+000 within the river), p-90 (km 17+300 - 17+500 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.	On whole section of embankments (indicated sections of river)	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor with participation of the zoologist
	[I.2.18.13] Within the places of occurrence of amphibians identified as follows: p-76 (km 20+900 - 21+900 within the river), p-77 (km 21+000 - 21+500 within the river), p-79 (km 20+900 - 21+400 within the river), p-78 (km 20+400 - 21+400 within the river), p-9 (km 20+400 within the river), p-83 (km 20+000 - 20+400 within the river), p-85 (km 19+500 - 20+000 within the river), p-50 (km 19+000 - 19+100 within the river), p-53 (km 19+100 - 19+500 within the river), p-10 (km 18+800 - 19+100 within the river), p-88 (km 17+600 - 19+100 within the river), p-89 (km 17+200 - 18+000 within the river), perform building / construction works only within the embankment base area, making use of the technology of work from the embankment front or from either side of the embankment (land-side or water-side) - not colliding with the habitat. At the section of the embankment crossing the habitat - perform building / construction works from the embankment front (at the same time reducing the area used in the course of building / construction works) to the				Once a month	Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	<p>embankment base area. Do not locate storage sites and technological routes within the boundaries of the habitats. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.</p> <p>[I.2.18.14] Within the places of occurrence of reptiles identified as follows: g-29 (km 18+700 - 19+300 within the river), g-30 (km 19+300 - 19+800 within the river), g-58 (km 20+600 - 20+900 within the river), g-60 (km 19+800 - 20+800 within the river), g-13 (km 19+600 within the river), g-14 (km 19+300 - 19+400 within the river), g-17 (km 18+000 - 19+000 within the river), g-20 (km 17+300 - 17+500 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.</p> <p>[I.2.18.15] Within the places of occurrence of reptiles identified as follows: g-51 (km 20+800 - 21+900 within the river), g-52 (km 21+000 - 21+500 within the river), g-53 (km 20+400 - 21+500 within the river), g-54 (km 20+400 - 21+500 within the river), g-59 (km 20+400 within the river), g-61 (km 19+800 - 20+800 within the river), g-63 (km 19+500 - 20+000 within the river), g-12 (km 19+600 within the river), g-15 (km 19+000 - 19+500 within the river), g-16 (km 19+000 within the river), g-18 (km 17+600 - 19+100 within the river), g-19 (km 17+200 - 18+000 within the river), perform building / construction works only within the embankment base area, making use of the technology of work from the embankment front or from either side of the embankment (land-side or water-side) - not colliding with the habitat. At the section of the embankment crossing the habitat - perform building / construction works from the embankment front (at the same time reducing the area used in the course of building / construction works) to the embankment base area. Do not locate storage sites and technological routes within the boundaries of the habitats.</p>					

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.					
Fauna	[I.2.18.16] At the sections at km 23+000, 20+700, 18+100 of the Widawa River, within the mid-embankment, do not locate technological routes and parking lots of machines and equipment and do not store materials in the breeding habitat of Corn Crane.	km 23+000, 20+700, 18+100 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation Once a month	Contractor with participation of the environmental specialist Engineer
Fauna	[I.2.18.17] At the section at km 20+100 of the Widawa River crossing the habitat of Grasshopper Warbler (identified as p-48) - do not locate technological routes and parking lots of machines and equipment and do not store materials within the meadow habitat. Limit the territory used in the course of building / construction works to the embankment base area. At the remaining section of the embankment, in the region of crossing potential habitats of Grasshopper Warbler and Red-backed Shrike (at km 21+300, 20+400, 20+100, 19+000, 18+700, 18+200, 18+600 within the river) - conduct works at the land-side and perform felling / cutting down shrubs growing in the neighbourhood of the embankment only within a line of the embankment base.	km 20+100 of the Widawa River, km 21+300, 20+400, 20+100, 19+000, 18+700, 18+200, 18+600	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation Once a month	Contractor with participation of the environmental specialist Engineer
Flora and fauna	[I.2.18.18] At the section at km 20+600 of the Widawa River - conduct felling / cutting down trees within the habitat of Grey-headed Woodpecker (identified as p-38) only within a line of the embankment.	km 20+600 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation Once a month	Contractor with participation of the environmental specialist Engineer
Flora and fauna	[I.2.18.19] At the section at km 20+700 of the Widawa River - do not locate technological routes and parking lots of machines and equipment, do not store materials and do not perform building / construction works within and in the direct vicinity of the old river-bed being the breeding habitat of Moorhen.	km 20+700 of the Widawa River	Environmental Specialist Report Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation Once a month	Contractor with participation of the environmental specialist Engineer

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Flora and fauna	[I.2.18.20] At the section at km 17+400 of the Widawa River - locate places of storage of materials, technological routes and parking lots of machines and equipment at the land-side of the embankment	km 17+400 of the Widawa River	Contractor's Report ¹ - confirmed by the Engineer ²	During entire period of works realization	Once a month during implementation	Contractor
					Once a month	Engineer
Monitoring for WFS structures – other measures						
Flora and fauna	[I.3.1.1] Do not locate the background facilities of construction sites and manoeuvring places at the areas at which the occurrence of protected natural habitats is inventoried, within mid-embankments and at a distance not shorter than 100 m from the existing water reservoirs and ponds, oxbow lakes and wetland areas.	Concerns all con-tract's structures	Notes in the Design /Designer Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Contractor
	[I.3.1.2] Organise the construction site taking into account the principles of minimising the occupation of lands.				Once a month	Engineer
	[I.3.1.3] Locate technological routes at a distance not shorter than 100 m from water reservoirs, ponds and oxbow lakes.					
	[I.3.1.4] Plan all the works consisting in the regulation, streamlining and strengthening the river-bed of the Widawa River only at sections under the re-built bridges and 50-m sections below and above the bridges.					
	[I.3.1.5] Determine the manner of dealing with wastes and earth masses generated at the stage of implementation of the investment considering the terms and conditions included in point I.2.1.48-I.2.1.50 of the environmental decision.					
	[I.3.1.6] Determine the manner of drainage of foundation ditches under the embankment culverts considering the recommendations indicated in point I.2.1.55.					
	[I.3.1.7] Apply the so-called "quiet surface" at the re-constructed bridge structures ensuring the reduction of the level of noise.					

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	<p>[I.3.1.8] Determine the manner of drainage of bridge structures considering the conditions indicated in point I.2.3.7, I.2.4.6, I.2.6.5, I.2.19.6, I.2.20.5.</p> <p>[I.3.1.9] Determine the manner of conducting works at the bridge structures, minimising their negative impact onto the adjacent areas - considering the terms and conditions specified in point I.2.3.4, I.2.4.4, I.2.6.2, I.2.7.2, I.2.19.4, I.2.20.3, I.2.21.3.</p> <p>[I.3.1.10] Determine the manner of embedding / seating of bridge structures considering the terms and conditions specified in point I.2.3.5, I.2.4.5, I.2.6.3, I.2.7.3, I.2.19.5, I.2.20.4.</p> <p>[I.3.1.11] Determine the manner of dealing with pumped-out waters considering the terms and conditions specified in I.2.2.8, I.2.3.6, I.2.4.6, I.2.6.4, I.2.7.40.</p>					
Fauna	[I.3.3.1] At the sections at km 21+750, 21+700, 19+300 - 21+700 of the Widawa River in order to protect the habitats of Hermit Beetle and Great Capricorn (identified as o-19, o-20 and o-27) - apply prefabricated walls made of T or L elements for the construction of the embankment.	WFS 45.2 km 21+750, 21+700, 19+300 – 21+700 of the Widawa River	Notes in the Design /Designer Contractor's Report ¹ – confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement	Contractor
					Before Works commencement	Engineer
Fauna	[I.3.4.1] At the sections at km 21+500, 21+700 of the Widawa River in order to protect the habitats of Hermit Beetle and Great Capricorn (identified as o-9, o-8) - apply prefabricated walls made of T or L elements for the construction of the embankment.	WFS 45.1 km 21+500, 21+700 of the Widawa River	Notes in the Design /Designer Contractor's Report ¹ – confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement	Contractor
					Before Works commencement	Engineer
Fauna	[I.3.4.2] At the sections at km 18+000, 19+500 - 19+600, 19+300 - 21+700 of the Widawa River in order to protect the habitats of Hermit Beetle and Great Capricorn (identified as	WFS44.3 km 18+000, 19+500 –	Notes in the Design /Designer Contractor's	Before Works commencement, During entire	Before Works commencement,	Contractor

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	o-29, o-28 and o-27) - apply prefabricated walls made of T or L elements for the construction of the embankment.	19+600, 19+300 – 21+700 of the Widawa River,	Report ¹ - confirmed by the Engineer ²	period of works realization	Before Works commencement	Engineer
Monitoring of All others WFS Structures of contract						
Environment/ Flora and fauna	[III.2.1] At the performance of the investment - conduct - with the participation of specialists - constant natural supervision considering the proper accomplishment of preventive and minimising measures in reference to the protected natural habitats as well as the species of fauna and flora. The supervision should include:	Concerns all con-tract's structures on whole section of embankmen ts	Environmental Specialists Report, Contractor's Report ¹ - confirmed by the Engineer ²	Before Works commencement, During entire period of works realization	Before Works commencement, Once a month during implementation	Environmental Specialists/ Contractor
	[III.2.1.1] Pre-implementation monitoring conducted by an entomologist in terms of the location of occurrence of (among others) places and populations of the protected species of insects.				Once a month	Engineer
	[III.2.1.2] Pre-implementation monitoring conducted by a chiropterologist in order to identify the potential living places of bats.					
	[III.2.1.3] Monitoring (by specialists in the field of zoology and botany) of the occupation of the area and the correctness of the executed works within and in the direct vicinity of the protected natural habitats as well as the habitats of the species of plants and animals.					
	[III.2.1.4] Supervision of an ichthyologist at the conduct of works at the section in the proximity of the habitat of occurrence of Ray-finned fish <i>Sabanejewia aurata</i> (1146).					
	[III.2.1.5] Supervision of a zoologist or herpetologist covering the monitoring of occurrence of amphibians and reptiles at the area(s) of the conducted building / construction works.					

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
	[III.2.1.6] In case of statement of low effectiveness of the introduced minimising measures in the course of such supervision, immediately develop appropriate modifications with the participation of specialists and implement them.					
Environment (flora)	[III.2.2] Every year at the peaks of growing seasons of the species - within 2 years from the time of moving plants - with the participation of a botanist - examine the state of the protected plants moved from the area of the investment.	Concerns all contract's structures on whole section of embankments	Specialist Report - botanist / Contractor's Report ¹ - confirmed by the Engineer ²	Every year for two years in May from the time of plant transfer	During works implementation - once a year after transfer; for 2 years	Specialist botanist / Contractor
					During works implementation - once a year after transfer; for 2 years	Engineer
Environment (flora)	[III.2.3] For a period of 5 years at least from the completion of works at particular WFS structures - with the involvement of a specialist - phyto-sociologist - conduct the monitoring of the natural habitats. The monitoring should include: spatial range of these habitats, extent of their structure formation, state of their preservation, forms of degeneration, presence of characteristic species and observed changes of these features.	Concerns all contract's structures on whole section of embankments	Beneficiary's report - monitoring report	For five years from completion of works	Once a year, for 5 years after completion	Beneficiary (DZMiUW)
Environment (flora and fauna)	[III.2.4] For a period of at least 5 years from the completion of works at particular WFS structures - with the involvement of specialists in the field of botany and zoology - conduct the monitoring of the protected species of plants and animals covering the occurrence of the species and the conservation status of their populations. The monitoring should be conducted at growing seasons.	Concerns all contract's structures on whole section of embankments	Beneficiary's report - monitoring report	For five years from completion of works	Once a year, for 5 years after completion	Beneficiary (DZMiUW)
Environment (flora)	[III.2.5] For a period of at least 5 years from the completion of works at particular WFS structures within the investment - conduct - by trained people - annual monitoring of the occurrence of invasive plants, including thickets of Knotweed (<i>Reynoutria spp.</i>). In case of observing the occurrence of any positions of invasive plants (shoots and seedlings) - take appropriate remedial measures to eliminate the identified positions and to prevent its further spread.	Concerns all contract's structures on whole section of embankments	Beneficiary's report - monitoring report	For five years from completion of works	Once a year, for 5 years after completion	Beneficiary (DZMiUW)

Item/ monitoring area	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored?	Monitoring frequency	By whom?
Environment (flora)	[III.2.6] Submit the results of the monitoring with the assessment and analysis carried out by specialists to the Regional Director of the Environmental Protection in Wrocław till 31 January of every year following the year of observation.	Concerns all contract's structures on whole section of embankments	Beneficiary's report - monitoring report	By 31 January, for 5 years after completion	Once a year by 31 January for 5 years after completion	Beneficiary (DZMiUW)
Residents safety	[III.3.1] Control of the marking	The entire Works Contract	Contractor's report ¹ – confirmed by the Engineer ²	The entire period of contract implementation	Once a month during implementation	Engineer
Workers safety	[III.3.2] Protective equipment, H&S trainings, appropriate organization of the construction site	The entire Works Contract	Regular inspections during work Contractor's report ¹ – confirmed by the Engineer ²	The entire period of contract implementation	Once a month during implementation	Contractor
					Once a month	Engineer
Illegal or excessive borrowing may damage archaeological or land resources	[III.3.3] Control of the construction site	The entire Works Contract	Regular inspections during work Contractor's report ¹ – confirmed by the Engineer ²	The entire period of contract implementation	Once a month during implementation	Contractor
					Once a month	Engineer
Land acquisition	[III.3.4] Number of the plots obtained, formal and legal status of plots	The entire Works Contract	RAP Reports, table of change investigation	The entire period of Project implementation	Once a month during implementation	Engineer
					Once a month	Beneficiary (DZMiUW)
Archaeological artefacts	[III.3.5] Control of the construction site	The entire Works Contract	Regular inspections during work Contractor's report ¹ – confirmed by the Engineer ²	The entire period of contract implementation	Once a month during implementation	Contractor
					Once a month	Engineer

APPENDIX 3. MAIN POLISH LEGISLATION

According to national law the investment process in scope of environmental protection is regulated by among others the following acts and regulations:

1. Act of 3 October 2008 r. concerning popularization the environmental and its protection information as well as environmental impact assessment ("EIA Act"),
2. Act of 27 April 2001 - Environmental Protection Law ("EP Act");
3. Act of 16 April 2004 concerning nature conservation ("NC Act");
4. Act of 27 March 2003 concerning spatial planning and management;
5. Act of 7 July 1994 Construction Law ("Construction Law");
6. Act of 18 July 2001 - Water Law;
7. Act of 4 February 1994 r. Mining and Geological Law,
8. Act of 14 June 1960 r. Code of administrative procedures ("kpa");
9. Regulation of the Council of Ministers of 9 November 2010 on projects likely to significantly affect the environment this regulation replace Regulation of the Council of Ministers of 9 November 2004 (regulation EIA),
10. Act of 8 July 2010 concerning the preparation for the implementation of investments in flood protection structures.

APPENDIX 4. ENVIRONMENTAL DECISION

**EXTRACT****Regional Director
of the Environmental Protection
in Wrocław**

Wrocław, 31 January 2012.

WOOS.4233.1.2011.LCK

DECISION

Pursuant to article 71, clause 2 point 2, article 75, clause 1, point 1, letter "b" and clause 6 and 75 clause 1 point 1 letter "i" as well as 82 and article 85 clause 1 of the act dated 3 October 2008 *on sharing information about the environment and its conservation, public participation in environmental protection and environmental impact assessments* (Journal of Laws No. 199, item 1227 as amended) as well as paragraph 3, clause 1, point 54, 56, 61, 62 of the regulation of the Council of Ministers dated 9 November 2004 *on the types of projects which can significantly affect the environment and specific conditions for qualifying projects to prepare the environment impact assessment report* (Journal of Laws no. 257, item 2573 as amended) in reference to paragraph 4 of the regulation of the Council of Ministers dated 9 November 2010 *on projects which can significantly affect the environment* (Journal of Laws No. 231, item 1397) as well as article 104 of the act dated 14 June 1960 - the *Code of Administrative proceedings* (Journal of Laws of 2000, No. 98, item 1071 as amended), upon processing the application of the Lower Silesia Board of Amelioration and Water Structures in Wrocław located at 5 Jana Matejki Street in Wrocław, acting for and on behalf of the Lower Silesia Province, represented by the proxy - Michał Lenartowski,

I settle

the environmental conditions for the Works Contract involving the construction of structures and facilities of the flood-protection system of the city of Wrocław within the activities related to the Modernisation of the Wrocław Flood-way System (WFS), namely:

- 3. reconstruction and modernisation of the Odra - Widawa channel together with water over-flow mechanisms (damming and weir facilities),**

4. construction of the flood-protection embankments in the valley of the Widawa River together with a reconstruction of their road and railway bridges.

I. I specify

1. TYPE AND LOCATION OF IMPLEMENTING THE WORKS

CONTRACT:

The investment project under consideration involves a construction of structures and facilities of the flood-protection system of the city of Wrocław within the activities related to the modernisation of the Wrocław Flood-way System, namely: reconstruction and modernisation of the Odra-Widawa channel together with water over-flow mechanisms (damming and weir facilities) as well as a construction of the flood-protection embankments in the valley of the Widawa River together with a reconstruction of road and railway bridges. The Works Contract covers 37 tasks. It will be implemented at the area of the City of Wrocław within the following housing settlements: Strachocin, Swojczyce, Kowale, Zgorzeliwsko-Gorlice, Zakrzow, Klokoczyce, Soltysowice, Polanowice, Psie Pole, Widawa and Swiniary, in the Wrocław district at the location of Wilczyce (the community of Długoleka) and in the Trzebnica district, Krzyzanowice, Psary, Szymanow, Szewce, Biskupice (the community of Wisznia Mala) and Panowice (the community of Oborniki Slaskie), at the area of Lower Silesia.

2. THE CONDITIONS ON UTILISATION OF THE LAND AT THE STAGE OF IMPLEMENTATION AND OPERATION OF THE WORKS CONTRACT, TAKING INTO SPECIAL ACCOUNT THE NEED TO PROTECT VALUABLE ENVIRONMENTAL ASSETS, NATURAL RESOURCES AND HISTORICAL SITES AND TO REDUCE NUISANCE TO THEIR NEIGHBOURING AREAS:

2.1. General recommendations (related to the overall project).

- 2.1.3 Prior to undertaking substantial levelling works - take off the top of the humus soil layer (to the depth of 30 cm on average) and store in the vicinity of the area covered by the construction, in separate piles secured against drying and mixing with native rock, subject to the condition set out in point I.2.1.19.

- 2.1.4 Upon completion of earth works - use the taken-off over-load for forming slopes of the embankments intended for turf assessment: at the width of 5-10 metres along the embankment and within the reconstructed structures, at one side or both sides of the embankment - spread and level the previously taken-off humus. Within technological lines and places of storage (transport) of building materials - additionally execute all the tillage works: plating with discs, harrowing, fertilising and seeding grass mixtures in accordance with meadow habitats located closest to the site of re-cultivation.
- 2.1.5 Do not occupy lands adjacent to the area of implementation of the Works Contract beyond the existing communication system.
- 2.1.6 Do not locate background facilities of construction sites at areas covered with bushes and trees as well as within protected natural habitats.
- 2.1.7 Prior to starting works at particular tasks within the Works Contract, with the participation of specialists in botany, plant sociology, and zoology, fence off valuable patches of natural habitats and positions of protected plants and animals which are adjacent to the set-out sites of works and designated for their preservation. Execute the fencing in such a manner which is visible for people performing building works and which prevents accidental intrusion into fenced-off patches of natural habitats and positions of plants and animals. Remove the fencing upon the completion of building works.
- 2.1.8 Reduce (as far as possible) the area of damage as a result of building works conducted within valuable natural habitats of species.
- 2.1.9 Modify the technology applied for construction / reconstruction of the embankments consisting in conducting works at the opposite side to natural objects, or alternatively - conducting works at the front or crest of the embankment.
- 2.1.10 Determine the location of technological routes and sites in a manner which ensures: preservation of protected natural habitats, positions and habitats of protected species, preservation of all the tree- and shrub-based vegetation occurring beyond the areas required to be occupied in reference to the modernisation of the existing embankments and construction of new ones.

- 2.1.11 At the determination of location of technological routes and sites at the areas located within the zone of implementation of the Works Contract, the following should be done:
- 2.1.11.1 keep all tree and shrub vegetation growing beyond the places required to be occupied in reference to the modernisation of the existing embankments and construction of new ones,
 - 2.1.11.2 set a precise location of technological routes and sites within the boundaries of the zone of implementation of the Works Contract - in co-operation with specialists in the field of zoology and botany, so as not to worsen the ecological status of natural objects located within the implementation.
- 2.1.12 Reduce (as far as possible) the minimum depth of excavations / trenches and shorten (as far as possible) the duration of works.
- 2.1.13 Within the mid-embankment - not to dig up local depressions with a surplus of ground from excavations / trenches.
- 2.1.14 Apply time constraints at the execution of works in connection with the requirements of conservation of valuable species of flora and fauna.
- 2.1.15 Apply the principle of protection of natural environmental elements which are important to maintain a proper state of ecological corridors at each of the WFS structures (coverage with woods and shrubs, water reservoirs, oxbow lakes, etc.).
- 2.1.16 Run the modernisation of bridges in a manner which ensures the ecological functionality for animals moving through the valley of the Widawa River (appropriate lighting, dry land at river-bank areas above average water levels, natural character of river-bank areas under the bridges).
- 2.1.17 Limit the felling of trees and shrubs to an absolute minimum and perform it within the period from 15 October to the end of February, subject to point I.2.1.16 and I.2.1.29.
- 2.1.18 In case of an intention of felling of trees with their breast height over 50 cm, directly prior to the felling, the following should be performed with the participation of specialists:
- entomologist - a control of the occupancy of these trees by protected species of beetles, such as: Great Capricorn Beetle *Cerambyx cerdo*, Hermit Beetle *Osmoderma eremita*,

- chiropterologist - a control of the presence of bats

In case of any collision of the planned works with the positions of the above-specified beetles and the need to cut down trees because of the technical and technological conditions - make a transfer of the above-mentioned animals to another place or places being suitable in respect of habitat requirements of particular species or not threatening to cause losses in the resources of other protected species. Make the transfer in accordance with the terms and conditions specified in the decision of the competent authority issued on the grounds of article 56 of the act dated 16 April 2004 on nature protection.

Consult and settle the detailed principles of conduct (on determining places to which appropriately felled fragments of trees will be transferred and a code of conduct with felled trees and particular species individuals) with an entomologist and include the settled solutions in the application (request) for issuing an approval for the destruction of habitats and animals.

In cases of statement of the presence of bats in trees to be felled, temporarily suspend felling and implement the chiropterologist's recommendations which are adequate to the current atmospheric situation and identified the species of bats.

2.1.19 Within the whole area of investment, secure all the trees and shrubs designated to be left (including the ones being habitats for Great Capricorn and Hermit Beetle against accidental damage by using the following methods:

- 2.1.19.1 make tree-trunk protection (e.g. made of planks) fully around tree trunks up to the level of 1,5 m at minimum,
- 2.1.19.2 make shields around shrubs (e.g. made of planks) up to the level of 1,0 m at minimum,
- 2.1.19.3 make dig-outs / trenches at a distance of not less than 2 m from tree trunks,
- 2.1.19.4 do not store construction materials or solid / liquid waste which can alter the chemical characteristics of soil (e.g. salts, oils, fuels), or soil masses within the projection of tree crests,
- 2.1.19.5 execute earth works manually around skeletal roots. It is unacceptable to undercut skeletal roots,
- 2.1.19.6 in the period of hot weather, maximally reduce the time of exposure of roots to desiccation, while in the period of cold weather (frost) - to freezing.

- 2.1.20 Make dig-outs / trenches (conducted within the root systems of trees and shrubs) manually, if necessary, use drilling or jacking methods.
- 2.1.21 At places being designated as spots of potential occurrence of protected plant species, prior to the start of works - remove a top layer of soil with herbaceous vegetation growing on it and put it at a place secured against destruction - in order to make use of the layer during re-cultivation works. Consult and settle the details of dealing with a layer of soil with a specialist in the field of botany.
- 2.1.22 In case of any collision of the planned works with the positions of protected species of plants - re-plant the above-specified plants - to another place or places being suitable in respect of habitat requirements of particular species or not threatening to cause losses in the resources of other protected species. Conduct the re-planting in accordance with the terms and conditions specified in the decision of the competent authority issued on the grounds of article 56 of the act dated 16 April 2004 on nature protection.
- 2.1.23 Consult and settle the detailed principles of conduct with protected species of plant individuals specified in point I.2.1.20 (including a selection of technology and places of target re-planting) with a specialist in the field of botany and include the settled solutions in the application (request) for issuing an approval for the re-planting.
- 2.1.24 Prior to the start of construction works - conduct field inspection of places of execution of the works with the participation of a botanist or phyto-sociologist to locate places of occurrence and population of invasive plants (with the exception of Small-flowered Touch-me-not). After conspicuously locating and marking of places which are covered with invasive plants - take preventive measures during implementation of the investment, which will reduce the spread of those plants, including:
- 2.1.24.1 take off a layer of humus with invasive plants and remove them from the area of the works for composting or dispose in any other effective manner. It is unacceptable to mix the humus with the native vegetated humus,
- 2.1.24.2 train and supervise persons performing works related to the elimination of invasive plants.

- 2.1.25 In case of any collision of the planned works with the habitats of protected species of animals - make a transfer of the above-specified animals to another places or places being suitable in respect of habitat requirements of particular species or not threatening to cause losses in the resources of other protected species. Make the transfer in accordance with the terms and conditions specified in the decision of the competent authority issued on the grounds of article 56 of the act dated 16 April 2004 on nature protection.
- 2.1.26 Consult and settle the detailed principles of conduct with protected species of animals specified in point I.2.1.23 (including a selection of technology and places of target transfers) with a specialist in the field of zoology and include the settled solutions in the application (request) for issuing an approval for the animal transfer.
- 2.1.27 At the breeding sites of amphibians - plan construction works so that they should be conducted beyond the breeding season, namely beyond the period from 1 March up to 31 August. Depending on particular species occurring in water bodies (reservoirs) it is allowed to shorten the period referred to above upon consulting a specialist herpetologist. In case of failure to conduct the works beyond the period specified above, it is allowed to make use of solutions securing against the mortality (as a result of the conducted works and traffic) of animals travelling to and from breeding grounds. Technical solutions (e.g. fencing of construction sites with fences or use of traps in the form of grooves in the ground) to perform at sections with their length corresponding to the length of breeding amphibians places and the length not less than 150 meters from the boundaries of these places. Detailed technological and location solutions and principles of handling amphibians to be agreed with a specialist in the field of herpetology.
- 2.1.28 The application of methods securing water chambers, trenches, collectors etc. prior to the confinement of minor mammals, amphibians and reptiles within them. Therefore, these components (elements) should be designed to allow individual animals to get out of these structures. If this is impossible, these structures should be secured against the possibility of falling by animals or - at the stage of implementation - these elements should be monitored daily with trapped animals got out and transported beyond the site of works.

- 2.1.29 In the vicinity of especially environmentally valuable areas (within any protected areas, forests) - plan any works with their highest noise level in autumn and winter months (second half of October - end of February). Noise caused in the period from March up to July should not exceed 50 dB at a distance of 100 m from the site of works. Also due to the noise, in the period from April to October, any works should not be conducted at night in the vicinity of feeding of bats (large patches of trees, forests, water reservoir) - Greater Mouse-Eared Bat (*Myotis myotis*), Bechstein's bat (*Myotis bechsteinii*), Pond Bat (*Myotis dasycneme*) and Barbastelle Bat (*Barbastella barbastellus*).
- 2.1.30 In order to protect valuable and rare species of birds (Corn Crake, Lapwing, Eurasian Bittern, Marsh-harrier) - conduct any works with the highest noise levels, planned within and in the close vicinity of their habitats in the period from October to March.
- 2.1.31 Reduce (as far as possible) felling / cutting down blackthorn brushwood (no grubbing) and perform between 15 July and 15 August under the supervision of specialists: ornithologist and entomologist.
- 2.1.32 Start works and grubbing bush roots at the positions of cut blackthorn brushwood referred to in point I.2.1.29 at the earliest after 15 September and end by 15 March. Conduct construction / building works at a distance up to 100 m from the blackthorn brushwood - at day-time and with natural lighting only.
- 2.1.33 In case of no possibility to conduct the activities specified in point 2.1.29 and 2.1.30, perform felling / cutting down under the supervision of a specialist - entomologist. In case of finding eggs of Caterpillar Moth at blackthorn brushwood planned for felling / cutting down, move the felled / cut-down shrubs with eggs (in agreement with an entomologist) to a place ensuring the completion of their development cycle.
- 2.1.34 Mow the area occupied to construct the embankment - within the found sites and potential habitats of Scarce Large Blue Butterfly *Phengaris Teleius* and Dusky Large Blue Butterfly *Phengaris Nausicithous*, in particular within their habitats (identified as o-109 and o-119 in the Report), one year prior starting the works, in the period from early June to late September, once a month. Mow at the height of not more than 10cm. Perform the mowing in the manner specified above (prior to the proceeding works) also in the following year (after starting the works).

- 2.1.35 All works relating to execution of activities minimising adverse impact of the investment onto the environment - to be performed under constant environmental supervision run by competent specialists, considering the following principles:
- 2.1.33.1 on the basis of the conducted implementation-based monitoring, summary reports should be prepared, confirmed by specialists and submitted to the present Body (Institution) at least twice a year,
 - 2.1.33.2 the last report on implementation monitoring should be prepared within 3 months from the date of completion of the investment.
- 2.1.34 Submit all the information about arrangements referring to the manner and scope of the conducted activities specified in I.2.1.5, I.2.1.16, I.2.1.20 - I.2.1.24 as well as documents confirming the participation of specialists (e.g. report on settlements and / or statement of specialists confirming the proper conduct of operations) to the Regional Director of the Environmental Protection in Wroclaw immediately upon making the settlements and / or implementation of these settlements.
- 2.1.35 Design and project access roads leading to the construction site along the existing ground and hardened roads.
- 2.1.36 Traffic of vehicles should run along technological routes. Shipments of machinery should be made as far as possible along fixed routes.
- 2.1.37 Upon termination of the construction works restore the places of temporary works to the previous state.
- 2.1.38 The technical state of working construction and transportation machines should be checked on a regular basis in order to eliminate the spillage of petroleum into the ground.
- 2.1.39 In case of occurrence of any failure in the scope of contamination with petroleum products, the ground contaminated by an accident must be removed immediately and pass to the appropriate bodies holding authorisation for its further development.
- 2.1.40 Any places designated for handling vehicles and machines must be periodically (until the completion) lined with insulating materials. Places for parking of vehicles should not be located: at the area where the Main Reservoir of Underground Waters GZWP-320 is located, at the area of the mid-embankment and directly by the slope of the flood protection embankment. Locate the background facilities of the construction site beyond the protective zone of under-ground water in-takes where the level of ground water is below 1,5 m below terrain level.

- 2.1.41 In the vicinity of machine garaging and filling there should a stand with sorbent serving to eliminate any leaks of petroleum substances.
- 2.1.42 Works at acoustically-protected areas should be performed at day-time only - namely between 6⁰⁰ and 22⁰⁰.
- 2.1.43 The construction site, access roads should be organised and maintained so as to minimise dusting and be located possible away from residential areas (in case of any works at areas near residential development, these works should be performed at daytime).
- 2.1.44 Places of storage of soil masses should be properly secured in order to reduce their dusting.
- 2.1.45 Do not allow long-term operation of internal combustion engines of machinery and construction vehicles at a standstill (limit emissions at the so-called stage of idling speed).
- 2.1.46 The execution of works should be organised taking into consideration the capabilities to conduct works synchronously at several locations spaced around 300 - 500 m from each other (one another), in a manner which minimises the aggregation of pollutant concentrations.
- 2.1.47 In the immediate vicinity of residential buildings limit the number of machines working simultaneously at the given distance, in order to minimise direct impacts of emissions. Car parking lots should not be located in these areas.
- 2.1.48 Organise all the works in such a manner as to minimise the amount of generated wastes and reduce their negative impact on the environment. All the wastes generated at the implementation of the investment should be categorised and stored separately in containers or at places being enclosed and adapted for this purpose, under conditions which prevent dusting and dispelling light fractions, and their negative effects on the environment and to ensure their gradual delivery and acceptance by operators with appropriate authorisation for their further development .
- 2.1.49 Hazardous waste should be categorised and stored in designated containers placed at hardened and protected areas secured against access of third parties until their transfer to entities having the appropriate permission for their disposal.
- 2.1.50 Ground mass generated during the investment should be exploited in accordance with their intended use under existing legislation, taking into account the possibility of reuse to strengthen the rebuilt and upgraded floor protection embankments.

- 2.1.51 Social and domestic sewage must be collected in leak-proof, drain-less tanks and ensure that they are regularly collected by authorised bodies.
- 2.1.52 The implementation of the investment cannot cause - regardless of the level of water flows - increasing any flood risk of the areas located below the places covered by the application.
- 2.1.53 In the course of conducting the works there can no difficulties occurred in the manner of making use of the areas being adjacent to the projected Works Contract.
- 2.1.54 Rainfall waters from within the areas at the embankments (re-built and under construction) - prior to entering the river - should be treated with sedimentation in ditches or mechanically cleaned.
- 2.1.55 Waters from draining the foundation bottoms for the embankment culverts should be treated with sedimentation in ditches prior to entering the receiver - the river.
- 2.1.56 Any works should not be conducted at the period of intensive precipitation. Grooves preventing direct out-flows of contaminated waters into local trenches should be made.
- 2.1.57 Embed all the transported masses directly into the embankment body and compact them to the required indicators levels, with no their indirect unloading and storage.
- 2.1.58 At the stage of operation - ensure proper operation of machines and equipment for pre-treatment of rainfall waters discharged from communication facilities / structures.

2.2 Recommendations for the task: the Odra - Widawa Transfer - Flap weir (the WFS structure no. 40).

- 2.2.1 At the stretch of the Channel at km 2+600 - 3+000, conduct building (construction) works at the opposite side of the over-flow in relation to the land patch being a mosaic of habitats - Cnidium meadows (*Cnidion dubii*, habitat code - 6440) and low-land and mountain fresh meadows used extensively (*Arrhenatherion elatioris*) (6510) (identified as h-54 in the report) as well as the position of Fen Violet (identified as f-1 in the report). Locate technological routes and storage places beyond within and in the direct vicinity of the above-specified habitats. It is allowed to conduct works required to build a flow-over at the side of the habitat, within a line up to 10 m from the structure under consideration.
- 2.2.2 At the stretch of the Channel at km 2+500 - 2+600 - do not conduct works within and in the direct vicinity of the habitat patch - willow, poplar, alder and ash carr within and in the direct vicinity of the 91E0* habitat (identified as h-55 in the Report).

- 2.2.3 Do not fell / cut down trees which are the habitat of Great Capricorn and Hermit Beetle located at km 2+700 of the Channel (identified as o-1 in the Report). Building / construction works should be performed beyond the projection area of tree crests forming the above-specified habitat. Within the boundaries of the area no storage sites and technological routes should be located as well. It is permitted only to make use of the existing roads (even if they are located within the projection area of tree crests).
- 2.2.4 At the section at km 2+200 - 2+800 of the Channel, within the places of occurrence of amphibians (identified as the positions no. p-1, p-2, p-3 and p-73 in the Report) and reptiles (identified as the positions no. g-2 and g-43 in the Report), building / construction works should be conducted beyond the above-specified positions. No storage sites and technological routes should be located within their boundaries.
- 2.2.5 At the sections at km 2+500 - 2+600 and km 2+700 of the Channel, do not locate any sites of storage of materials, technological routes and places of stoppage of machines / equipment in the direct vicinity of water reservoirs as well as within meadows constituting the breeding habitat of Eurasian Bittern, Grasshopper Warbler, Great Reed Warbler (at km 2+500 - 2+600 of the channel, at km 2+700 of the river). At km 2+500 - 2+600 of the channel, perform works at high noise levels at the period from 15 October up to the end of February.
- 2.2.6 Perform building / constructions works under the cover of a temporary shield raised up to the ordinate of 120,50 m above sea level at the side of the Odra River.
- 2.2.7 All the earth works should be conducted within retaining walls.
- 2.2.8 Drain water from trenches by means of pipelines beyond the temporary earth shield into the ditch (the existing ditch at the bottom of the inlet channel) and further to the Widawa River. At the inlet of the pipelines into the ditch - the so-called sumps - in order to reduce the speed of flow and to allow sediment of suspensions.

2.3 Recommendations for the task: Reconstruction of the road bridge (the WFS structure no. 41.1 - the Strachocinski Bridge)

- 2.3.1 Conduct works (including: felling / cutting down trees and shrubs) only within a line not exceeding 10 m from the bridge and in case of the construction of a temporary bridge within a line not exceeding 10 m from this bridge.
- 2.3.2 Do not locate storage sites and parking lots of building / construction machines in the mid-embankment.

- 2.3.3 Execute the strengthening of the channel bottom and slopes with gabions only at the projection of a road lane. Apply stone coverage at other sections.
- 2.3.4 All the earth works should be conducted within retaining walls.
- 2.3.5 Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive soils should ensure the tightness of a particular chamber.
- 2.3.6 Discharge waters pumped out of trenches by means of pipelines to the existing ditch at the bottom of the channel. Execute sumps at the outlet of the pipelines. Such method of draining of trenches as well as discharging of waters will maximally reduce its impact onto adjacent areas.
- 2.3.7 Catch rainfall waters through rainwater drains with the tight (sealed) drainage system. Prior to discharging to the receiver, waters should be pre-cleaned in the settler with its capacity of 3,5 m³ and lamella separator (clarifier) with its flow from 10 up to 100 dm³/s.

2.4 Recommendations for the task: Reconstruction of the railway bridge (the WFS structure no. 41.2 - the Strachocinski Bridge)

- 2.4.1 Conduct works (including: felling / cutting down trees and shrubs) only within a line not exceeding 10 m from the bridge.
- 2.4.2 Do not locate storage sites and parking lots of building / construction machines in the mid-embankment.
- 2.4.3 Execute the strengthening of the channel bottom and slopes with gabions only at the projection of a road lane. Apply stone coverage at other sections.
- 2.4.4 Secure the railway embankment in the course of conducting earth works. All the earth works should be conducted within retaining walls.
- 2.4.5 Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive soils should ensure the tightness of a particular chamber.
- 2.4.6 Discharge waters pumped out of trenches by means of pipelines to the existing ditch at the bottom of the channel. Execute sumps at the outlet of the pipelines. Such method of draining of trenches as well as discharging of waters will maximally reduce its impact onto adjacent areas.

2.5 Recommendations for the task: Redevelopment of the channel (the WFS structure no. 41.3)

- 2.5.1 Do not conduct works at both river banks at the same time (leave one bank undisturbed with works conducted at the other bank).
- 2.5.2 At the time of temporary storage of extracted materials mined from the bottom of the channel - make a review of places projected for storage of newly-extracted materials and collect individuals of mussel reaching the top surface of excavated material. The collected individuals should be moved and released at places ensuring their safety (e.g. at sections of completed works related to the implementation of the Works Contract). Consult and develop the detailed method of reviewing, collecting and handling of individuals of mussel with the participation of a specialist in the field of zoology.
- 2.5.3 Do not use gabion baskets and mattresses to strengthen the channel bottom and slopes (apart from sections under re-built bridges as well as within and in the immediate vicinity of the weir).
- 2.5.4 Form the new river-bank slopes in a manner which ensures the variation of the course of the line, height and tilt of these river-bank slopes, formation of creeks and bays within these river-banks as well as enabling the development of communities of river-bank vegetation at some of their slopes. Consult and develop detailed solutions in terms of location, design and technology - in consultation with specialists in the field of zoology (including ichthyology and ornithology) as well as botany - plant sociology.

2.6 Recommendations for the task: Reconstruction of the road bridge named after B. Krzywousty (the WFS structure no. 42.1)

- 2.6.1 Do not locate storage sites and technological routes at the section of the Widawa River at km 17+250 - 19+400 within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-63 in the Report) as well as the location of Fen Violet (identified as f-8 in the Report). Execute the works at the line not exceeding 10 m from the bridge.
- 2.6.2 All the earth works should be conducted within retaining walls.
- 2.6.3 Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive soils should ensure the tightness of a particular chamber.
- 2.6.4 Discharge waters pumped out of trenches by means of pipelines to the existing ditch at the bottom of the channel. Execute sumps at the outlet of the pipelines. Such method

of draining of trenches as well as discharging of waters will maximally reduce its impact onto adjacent areas.

- 2.6.5 Catch rainfall waters through rainwater drains with the tight (sealed) drainage system. Prior to discharging to the receiver, water from the (northern and southern) bridge structures should be pre-cleaned in the settlers with their capacity of 3,5 m³ each and lamella separators with their flow from 15 up to 150 dm³/s each.

2.7 Recommendations for the task: Reconstruction of the railway bridge named after B. Krzywousty (the WFS structure no. 42.1.1)

- 2.7.1 Conduct works (including: felling / cutting down trees and shrubs) only within a line not exceeding 10 m from the bridge.
- 2.7.2 All the earth works should be conducted within retaining walls.
- 2.7.3 Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive soils should ensure the tightness of a particular chamber.
- 2.7.4 Discharge waters pumped out of trenches by means of pipelines to the existing ditch at the bottom of the channel. Execute sumps at the outlet of the pipelines. Such method of draining of trenches as well as discharging of waters will maximally reduce its impact onto adjacent areas.

2.8 Recommendations for the task: The Channel - the new right-bank embankment (WFS structure no. 44.1)

- 2.8.1 Do not conduct building / construction works, do not locate storage sites and technological routes at the section of the Channel at km 0+000 - 1+300 within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-57 in the Report). Perform the construction of the embankment from its land-side.

2.9 Recommendations for the task: The Channel - the new left-bank embankment (WFS structure no. 44.11)

- 2.9.1 Do not conduct building / construction works at the section of the Channel at km 1+900 within and in the direct vicinity of the patch of the habitat - Old river beds and natural eutrophic water reservoirs 3150 (identified as h-56 in the Report).
- 2.9.2 At km 0+000 - 1+300 of the Channel within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-57 in the Report) and the position of Fen Violet (identified as f-2 in the Report) - do not perform building /

construction works, do not locate storage sites and technological routes. Perform the construction of the embankment from its land-side.

- 2.9.3 At the section at km 1+900 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-5 in the Report), building / construction works should be performed beyond the above-specified position. No storage sites and technological routes should be located within the boundaries of the position.
- 2.9.4 At the section at km 1+700 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-6 in the Report), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.9.5 At the section at km 2+000 of the Channel, within the place of occurrence of reptiles (identified as the habitat no. p-44 in the Report), building / construction works should be performed beyond the above-specified position. No storage sites and technological routes should be located within the boundaries of the position.
- 2.9.6 At the section at km 1+800 of the Channel, within the place of occurrence of reptiles (identified as the habitat no. p-3 in the Report), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.9.7 At the section at km 1+700 and 1+900 of the Channel, do not perform works, do not locate technological routes and parking lots of machines and equipment, do not store materials within meadows and brushwood constituting the breeding habitat of Red-backed Shrike and Great Reed Warbler overgrowing old river beds at the land-side.

2.10 Recommendations for the task: Swojczyce - the new embankment (WFS structure no. 44.12)

- 2.10.1 At the section at km 0+000 - 1+300 of the Channel within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-57 in the

- Report) - do not conduct building / construction works, do not locate storage sites and technological routes. Perform the construction of the embankment from its land-side.
- 2.10.2 At the section at km 20+100 - 20+250 of the Widawa River, at the direct vicinity of the position of Dusky Large Blue and Scarce Large Blue (identified as o-11 in the Report), perform building / construction works only at the land-side of the embankment (alternatively - at its front). Do not occupy land within the mid-embankment. Locate storage sites and technological routes beyond the area of the above-specified position.
- 2.10.3 At the section at km 20+100 - 20+400 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-82 in the Report), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.10.4 At the section at km 20+100 - 20+400 of the Widawa River, within the place of occurrence of reptiles (identified as the habitat no. g-5 in the Report), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.10.5 At the sections at km 0+500 of the Channel and at km 20+200, 20+400, 20+500, 20+600 of the Widawa River, do not perform works within brushwood constituting the breeding habitat of Red-backed Shrike, do not locate technological routes and parking lots of machines and equipment, do not store materials.

2.11 Recommendations for the task: Kowale - the new embankment (WFS structure no. 44.13)

- 2.11.1 At the section at km 17+250 - 19+400 of the Widawa River, within the patch of the habitat - Cnidium meadows 6440 (identified as h-63 in the Report) and the position of Fen Violet (identified as f-8 in the Report), execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological

routes at the sections intersecting the above-specified habitats at the embankment crest; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitats.

- 2.11.2 At km around 17+400 of the Widawa River, in the direct vicinity of the position of Hermit Beetle (identified as o-14 in the Report) building / construction works should be conducted beyond the projection area of tree crests. Do not locate storage sites and technological routes within the boundaries of the area.
- 2.11.3 Do not clear melioration ditches at the sections at km 19+500 - 20+000, 19+100 - 19+300, 19+000 - 19+100, 17+500 - 19+000 of the Widawa River.
- 2.11.4 At the section at km 19+100 - 19+300 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-55 in the Report), building / construction works should be performed beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.
- 2.11.5 At the section of the embankment at 17+200 - 19+400 of the Widawa River, within the places of occurrence of amphibians (identified as the habitat no. p-87 in the Report) and reptiles (identified as the habitat no. g-11 of the Report) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. At the section of the embankment crossing the habitat - perform building / construction works from the embankment front (at the same time reducing the area used in the course of building / construction works) towards the embankment base. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.11.6 At the section at km 19+200 - 19+400 of the Widawa River, within the place of occurrence of reptiles (identified as the habitat no. g-7 in the Report), building / construction works should be performed beyond the above-specified position. No storage sites and technological routes should be located within the boundaries of the position.
- 2.11.7 Do not locate technological routes and parking lots of machines and equipment, do not store materials within meadows and shrubs constituting the breeding habitat of Red-backed Shrike, Great Reed Warbler and Stone-chat within the places of occurrence of

birds identified in the Report as: p-68 (at km 18+200 of the river), p-71 (at km 17+700 of the river), p-67 (at km 18+300 of the river), p-66 (at km 18+500 of the river), p-69 (at km 18+100 of the river), p-70 (at km 18+000 of the river). Perform all the works at the land-side within a line not exceeding 30 m from the embankment.

2.12 Recommendations for the task: Kowale - modernisation of the embankment (WFS structure no. 45.6).

- 2.12.1 At the section at km 19+500 - 20+200 of the Widawa River, within the patch of the habitat - Cnidium meadows 6440 (identified as h-62 in the Report) and the positions of Fen Violet (identified as f-5 in the Report) - perform all the works within the mid-embankment only at a line of the existing ground road running at the route of the projected embankment. Locate places of storage of materials as well as technological routes only at the land-side of the embankment.
- 2.12.2 At the section at km 20+100 - 20+250 of the Widawa River, at the direct vicinity of the position of Dusky Large Blue and Scarce Large Blue (identified as o-11 in the Report), perform building / construction works only at the land-side of the embankment (alternatively - at its front). Do not occupy land within the mid-embankment. Locate storage sites and technological routes beyond the area of the above-specified position.
- 2.12.3 Do not clear melioration ditches at the sections at km 19+500 - 20+000, 19+100 - 19+300, 19+000 - 19+100, 17+500 - 19+000 of the Widawa River.
- 2.12.4 At the section at km 19+500 - 20+400 of the Widawa River, within the places of occurrence of amphibians (identified as the habitats no. p-49 and p-82 in the Report) and reptiles (identified as the habitats no. g-5 and g-6 in the Report) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitats. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.12.5 At the sections at km 20+100, 19+800, 19+600 of the Widawa River - do not locate technological routes and parking lots of machines and equipment, do not store materials within meadows and bushes constituting the breeding habitats of Red-backed Shrike and Grasshopper Warbler.

2.13 Recommendations for the task: Wilczyce - the new embankment (WFS structure no. 44.2).

- 2.13.1 At the sections at km 22+100 - 22+300 and 22+800 - 23+000 of the Widawa River, within the place of occurrence of Ray-finned fish *Sabanejewia aurata* (identified as the habitat no. r-2 in the Report) - do not perform any works within the river-bed, even to secure concave river-banks in order to protect the embankments. Securing the embankments should be made with no interference within these river-banks (at their current state). Perform earth works and building / construction activities from the land only. Designate technological routes outside the mid-embankment only.
- 2.13.2 At the section at 23+000 - 24+000 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-41 in the Report) and reptiles (identified as the habitat no. g-46 of the Report) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front, at the same time limiting the area used in the course of building / construction works to lines of land with their width not exceeding 5 m from the embankment base. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.13.3 At the section at km 22+300 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-43 in the Report) and reptiles (identified as the habitat no. g-48), building / construction works should be conducted beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.
- 2.13.4 At the sections at km 23+000, 20+700, 18+100 of the Widawa River, within the future mid-embankment, do not locate technological routes and parking lots of machines and equipment, do not store materials within the boundaries of the breeding habitats of Corn Crake and Grasshopper Warbler.
- 2.13.5 At the section at km 23+000 of the Widawa River, within the breeding habitat of Red-backed Shrike, do not locate technological routes and parking lots of machines and equipment, do not store materials. At the section of the embankment crossing the above-specified habitat, limit all the works together with felling / cutting down of trees and shrubs to the width of the embankment base (footing).

2.14 Recommendations for the task: Modernisation of the embankment (WFS structure no. 45.5).

- 2.14.1 At the section at km 2+600 - 3+000 of the Channel, conduct building (construction) works at the opposite side of the over-flow in relation to the land patch being a mosaic of habitats - Cnidium meadows (*Cnidium dubii*, habitat code - 6440) and low-land and mountain fresh meadows used extensively (*Arrhenatherion elatioris*) (6510) (identified as h-54 in the report) as well as the position of Fen Violet (identified as f-1 in the report). Locate technological routes and storage places beyond within and in the direct vicinity of the above-specified habitats. It is allowed to conduct works required to build a flow-over at the side of the habitat, within a line up to 10 m from the structure under consideration.
- 2.14.2 At the section at km 2+500 - 2+600 of the Channel, do not conduct works within and in the direct vicinity of the habitat patch - willow, poplar, alder and ash carr *91E0 (identified as h-55 in the Report).
- 2.14.3 At the section at km 2+700 - 3+000 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-74 in the Report) and reptiles (identified as the habitat no. g-42 and g-43 in the Report), building / construction works should be conducted beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.
- 2.14.4 At the sections at km 2+700, km 2+500, km 2+800 - 2+900, km 3+000 of the Channel, do not locate technological routes and parking lots of machines and equipment, do not store materials in the direct vicinity of water reservoirs and brushwood as well as at meadows constituting the breeding habitats of Grasshopper Warbler, Great Reed Warbler and Red-backed Shrike. Conduct all the works at the land-side of the embankment.

2.15 Recommendations for the task: Wilczyce - modernisation of the embankment (WFS structure no. 45.2).

- 2.15.1 At the section at km 21+500 - 21+900 of the Widawa River, within the habitat patch - Cnidium meadows 6440 (identified as h-1 in the Report) - conduct all the works at the land-side of the embankment. Locate places of storage of materials and technological routes only at the land-side of the embankment and beyond the area of the above-specified habitat.

- 2.15.2 At the section at km 21+500 - 21+750 of the Widawa River, within the position of Common Snowdrop (identified as f-3 in the Report), limit felling / cutting down of riverine trees and brushwood to the width of the embankment base. Locate technological routes only at the land-side of the embankment making use of the existing network of mid-field paths (roads) to the furthest possible extent. Locate places of storage of materials at the land-side of the embankment beyond the area of forest habitats.
- 2.15.3 At the sections at km 21+750, 21+700, 19+300 - 21+700 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified as the habitats no. o-19, o-20 and o-27 in the Report). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).
- 2.15.4 At the section at km 21+000 - 21+500 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-77 in the Report) and reptiles (identified as the habitat no. g-52 in the Report), building / construction works should be conducted beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.
- 2.15.5 At the section at km 20+800 - 21+900 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-76 in the Report) and reptiles (identified as the habitat no. g-51 in the Report) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.15.6 At the sections at km 21+700 and 21+800 of the Widawa River, within the mid-embankment, do not locate technological routes and parking lots of machines and equipment, do not store materials in the breeding habitats of Grasshopper Warbler and River Warbler. Conduct all the works at the land-side of the embankment.

2.16 Recommendations for the task: Modernisation of the embankment (WFS structure no. 45.1).

- 2.16.1 At km 0+000 - 1+300 of the Channel within the mid-embankment, within the patch of the habitat - Cnidium meadows 6440 (identified as h-57 in the Report) and the position of Fen Violet (identified as f-2 in the Report) - do not perform building / construction works, do not locate storage sites and technological routes. Conduct the construction of the embankment at the land-side of the embankment and beyond the area of the above-specified habitats.
- 2.16.2 At the section at km 0+000 - 1+300 of the Channel - plan refurbishment and transportation works in such a manner to bypass the position of French rose (*Rosa Gallica*).
- 2.16.3 At the sections at km 21+500, 21+700 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified as the habitats no. o-9, o-8 in the Report). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).
- 2.16.4 At the sections at km 0+500 of the channel and at km 21+400 of the Widawa River, within the mid-embankment, do not locate technological routes and parking lots of machines and equipment, do not store materials in the breeding habitats of Grasshopper Warbler and Corn Crake. Conduct works at the land-side of the embankment.

2.17 Recommendations for the task: Demolition of the embankment (WFS structure no. 46.1)

- 2.17.1 At the section at km 1+900 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-5 in the Report), building / construction works should be performed beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.
- 2.17.2 At the section at km 1+700 of the Channel, within the place of occurrence of amphibians (identified as the habitat no. p-6 in the Report), perform building / construction works only within the embankment base, making use of the technology

of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.

- 2.17.3 At the section at km 2+000 of the Channel, within the place of occurrence of reptiles (identified as the habitat no. p-44 in the Report), building / construction works should be performed beyond the above-specified position. No storage sites and technological routes should be located within the boundaries of the position.
- 2.17.4 At the section of the embankment at km 1+800 of the Channel, within the place of occurrence of reptiles (identified as the habitat no. p-3 in the Report), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.17.5 At the section of the embankment at km 0+800 of the Channel, conduct the demolition of the embankment from the embankment front leaving shrubs at the land-side. Locate access roads and places of storage of materials at the land-side of the embankment beyond the boundaries of shrubs constituting the habitat of Red-backed Shrike.

2.18 Recommendations for the task: Zgorzelisko (up to B. Krzywoustego Street) - the new embankment (the WFS structure no. 44.3).

- 2.18.1 At the section at km 20+500 - 21+000 of the Widawa River - do not perform building / construction works within and in the direct proximity of the habitat patch - old river beds and natural eutrophic water reservoirs 3150 (identified as h-3 in the Report).
- 2.18.2 At the sections at km 18+700 - 19+600 and 19+800 - 21+900 of the Widawa River, within the habitat patches - Cnidium meadows 6440 (identified respectively as h-7 and h-1 in the Report) - do not conduct building / construction works, do not locate storage sites and technological routes. Conduct the construction of the embankment at the land-side of the embankment and beyond the area of the above-specified habitats.
- 2.18.3 At the section at km 17+300 - 19+200 of the Widawa River, within the habitat patch - Cnidium meadows 6440 (identified as h-8 in the Report) - execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological

routes at the sections intersecting the above-specified habitat at the embankment crest; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.

- 2.18.4 At the section at km 20+400 - 21+200 of the Widawa River, within the habitat patch - willow, poplar, alder and ash carr (identified as h-2 in the Report), limit felling / cutting down of riverine trees and brushwood to the width of the embankment base and execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified habitat at the embankment crest; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.
- 2.18.5 At the section at km 17+300 - 17+500 of the Widawa River - conduct works at a distance exceeding 20 m from the habitat patch - willow, poplar, alder and ash carr *91E0 (identified as h-9 in the Report).
- 2.18.6 At the section at km 19+500 - 20+700 of the Widawa River, within the habitat patch - low-land and mountain fresh meadows used extensively 6510 (identified as h-4 in the Report) - execute the construction of the embankment at the section running through the habitat from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified habitat at the embankment crest; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.
- 2.18.7 At the sections at km 19+200 - 19+400 and 20+500 - 21+000 of the Widawa River - locate all the building / construction works as well as storages of materials and technological routes at a distance not exceeding 15 m from the embankment so that not to cause damage at the positions of Yellow Water-lily and White Water-lily (identified as f-4 and f-7 in the Report).
- 2.18.8 At the section at km 19+500 - 20+000 of the Widawa River - locate all the building / construction works as well as storages of materials and technological routes at a

- distance not exceeding 20 m from the embankment so that not to cause damage at the position of Broad-leaved Helleborine (identified as f-6 in the Report).
- 2.18.9 At the sections at km 18+000, 19+500, 19+300 - 21+700 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified respectively as o-29, o-28 and o-27 in the Report). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).
- 2.18.10 At the section at km 18+800 - 19+200 of the Widawa River, at the direct vicinity of the position of Dusky Large Blue and Scarce Large Blue (identified as o-33 in the Report), perform building / construction works only at the land-side of the embankment (alternatively - at its front). Do not occupy land within the mid-embankment. Locate storage sites and technological routes beyond the area of the above-specified position.
- 2.18.11 Do not clear melioration ditches at the sections at km 16+500, 16+200, 16+100 and 18+000 - 19+500 of the Widawa River.
- 2.18.12 Within the places of occurrence of amphibians identified in the Report as follows: p-125 (km 18+700 - 19+300 within the river), p-86 (km 19+300 - 19+800 within the river), p-8 (km 20+600 - 20+900 within the river), p-84 (km 19+700 - 20+600 within the river), p-51 (km 19+500 within the river), p-52 (km 19+400 within the river), p-54 (km 18+000 - 19+000 within the river), p-90 (km 17+300 - 17+500 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.
- 2.18.13 Within the places of occurrence of amphibians identified in the Report as follows: p-76 (km 20+900 - 21+900 within the river), p-77 (km 21+000 - 21+500 within the river), p-79 (km 20+900 - 21+400 within the river), p-78 (km 20+400 - 21+400 within the river), p-9 (km 20+400 within the river), p-83 (km 20+000 - 20+400 within the river), p-85 (km 19+500 - 20+000 within the river), p-50 (km 19+000 - 19+100 within the river), p-53 (km 19+100 - 19+500 within the river), p-10 (km 18+800 - 19+100 within the river), p-88 (km 17+600 - 19+100 within the river), p-89 (km 17+200 -

18+000 within the river), perform building / construction works only within the embankment base area, making use of the technology of work from the embankment front or from either side of the embankment (land-side or water-side) - not colliding with the habitat. At the section of the embankment crossing the habitat - perform building / construction works from the embankment front (at the same time reducing the area used in the course of building / construction works) to the embankment base area. Do not locate storage sites and technological routes within the boundaries of the habitats. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.

2.18.14 Within the places of occurrence of reptiles identified in the Report as follows: g-29 (km 18+700 - 19+300 within the river), g-30 (km 19+300 - 19+800 within the river), g-58 (km 20+600 - 20+900 within the river), g-60 (km 19+800 - 20+800 within the river), g-13 (km 19+600 within the river), g-14 (km 19+300 - 19+400 within the river), g-17 (km 18+000 - 19+000 within the river), g-20 (km 17+300 - 17+500 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.

2.18.15 Within the places of occurrence of reptiles identified in the Report as follows: g-51 (km 20+800 - 21+900 within the river), g-52 (km 21+000 - 21+500 within the river), g-53 (km 20+400 - 21+500 within the river), g-54 (km 20+400 - 21+500 within the river), g-59 (km 20+400 within the river), g-61 (km 19+800 - 20+800 within the river), g-63 (km 19+500 - 20+000 within the river), g-12 (km 19+600 within the river), g-15 (km 19+000 - 19+500 within the river), g-16 (km 19+000 within the river), g-18 (km 17+600 - 19+100 within the river), g-19 (km 17+200 - 18+000 within the river), perform building / construction works only within the embankment base area, making use of the technology of work from the embankment front or from either side of the embankment (land-side or water-side) - not colliding with the habitat. At the section of the embankment crossing the habitat - perform building / construction works from the embankment front (at the same time reducing the area used in the course of building / construction works) to the embankment base area. Do not locate storage sites and technological routes within the boundaries of the habitats. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.

- 2.18.16 At the sections at km 23+000, 20+700, 18+100 of the Widawa River, within the mid-embankment, do not locate technological routes and parking lots of machines and equipment and do not store materials in the breeding habitat of Corn Crake.
- 2.18.17 At the section at km 20+100 of the Widawa River crossing the habitat of Grasshopper Warbler (identified as p-48 in the Report) - do not locate technological routes and parking lots of machines and equipment and do not store materials within the meadow habitat. Limit the territory used in the course of building / construction works to the embankment base area. At the remaining section of the embankment, in the region of crossing potential habitats of Grasshopper Warbler and Red-backed Shrike (at km 21+300, 20+400, 20+100, 19+000, 18+700, 18+200, 18+600 within the river) - conduct works at the land-side and perform felling / cutting down shrubs growing in the neighbourhood of the embankment only within a line of the embankment base.
- 2.18.18 At the section at km 20+600 of the Widawa River - conduct felling / cutting down trees within the habitat of Grey-headed Woodpecker (identified as p-38 in the Report) only within a line of the embankment.
- 2.18.19 At the section at km 20+700 of the Widawa River - do not locate technological routes and parking lots of machines and equipment, do not store materials and do not perform building / construction works within and in the direct vicinity of the old river-bed being the breeding habitat of Moorhen.
- 2.18.20 At the section at km 17+400 of the Widawa River - locate places of storage of materials, technological routes and parking lots of machines and equipment at the land-side of the embankment.

2.19 Recommendations for the task: Reconstruction of the road bridge in the location of Widawa (the WFS structure no. 42.2)

- 2.19.1 Conduct works (including: felling / cutting down trees and shrubs) only within a line not exceeding 10 m from the bridge and possibly within a line not exceeding 10 m from the temporary bridge.
- 2.19.2 Do not locate storage sites and parking lots of building / construction machines in the mid-embankment.
- 2.19.3 Execute the strengthening of the channel bottom and slopes with gabions only at the projection of a road lane. Apply stone coverage at other sections.
- 2.19.4 All the earth works should be conducted within retaining walls.

- 2.19.5 Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive soils should ensure the tightness of a particular chamber.
- 2.19.6 Catch rainfall waters through rainwater drains with the tight (sealed) drainage system. Prior to discharging to the receiver, waters should be pre-cleaned in the settler with its capacity of 3,5 m³ and lamella separator (clarifier) with its flow from 10 up to 100 dm³/s.

2.20 Recommendations for the task: Reconstruction of the Pegowski road bridge (the WFS structure no. 42.3)

- 2.20.1 At km 3+800 - 4+000 of the Widawa River, within and in the direct vicinity of patches of natural habitats - oak, elm, ash riverine forests 91F0 (identified as h-34, h-87, h-88 in the Report), willow, poplar, alder and ash carr *91E0 (identified as h-35 in the Report) and the positions of Broad-leaved Helleborine (identified as f-21 in the Report) - design technological routes in such a manner so that not to damage the above-specified patches making use of the existing network of roads to the furthest possible extent. Locate storage sites beyond the area of habitats as well as beyond the area of the present mid-embankment. Conduct works at the area of the present mid-embankment (including possible felling / cutting down trees and shrubs) at a distance not exceeding 10 m from the reconstructed bridge. All the works should be performed in a manner which do not required to construct temporary bridges.
- 2.20.2 At km 3+800 - 4+000 of the Widawa River - conduct earth works within retaining walls.
- 2.20.3 Bridge abutments footed at piles should be executed in chambers made of sheet piling. The ordinate of sheet piles embedded into cohesive soils should ensure the tightness of a particular chamber.
- 2.20.4 Catch rainfall waters through rainwater drains with the tight (sealed) drainage system. Prior to discharging to the receiver, waters should be pre-cleaned in the settler with its capacity of 3,5 m⁰ and lamella separator (clarifier) with its flow from 10 up to 100 dm³/s.

2.21 Recommendations for the task: Reconstruction of the Pegowski railway bridge (the WFS structure no. 42.3.1).

- 2.21.1 At km 3+800 - 4+000 of the Widawa River, within and in the direct vicinity of patches of natural habitats - oak, elm, ash riverine forests 91F0 (identified as h-88, h-89),

willow, poplar, alder and ash carr *91E0 (identified as h-35 in the Report) - design technological routes in such a manner so that not to damage the above-specified patches making use of the existing network of roads to the furthest possible extent. Locate storage sites beyond the area of habitats as well as beyond the area of the present mid-embankment. Conduct works at the area of the present mid-embankment (including possible felling / cutting down trees and shrubs) at a distance not exceeding 10 m from the reconstructed bridge. All the works should be performed in a manner which do not required to construct temporary bridges.

2.21.2 At the section at km 3+600 - 3+900 of the Widawa River - project an access to the construction site in such a manner that not to damage the breeding habitats of Red-backed Shrike and Middle Spotted Woodpecker. Locate storage sites beyond the area of habitats as well as beyond the area of the present mid-embankment. Conduct works (including possible felling / cutting down trees and shrubs) within a line with its width not exceeding 10 m from the reconstructed bridge.

2.21.3 All the earth works should be conducted within retaining walls.

2.22 Recommendations for the task: Increasing the capacity of the bridge over the Widawa River at the location of Psary (the WFS structure no. 43)

2.22.1 Conduct works (including: felling / cutting down trees and shrubs) only within a line not exceeding 10 m from the bridge and possibly within a line not exceeding 10 m from the temporary bridge.

2.22.2 Do not use mattresses and gabions to strengthen the bottom and slopes of the Old Widawa river.

2.23 Recommendations for the task: Krzywoustego - the railway lines - the new embankment (the WFS structure no. 44.14)

2.23.1 At the section at km 16+900 - 17+200 of the Widawa River, within the place of occurrence of reptiles (identified as the habitat no. g-22 in the Report), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.

2.23.2 At the section at km 16+900 - 17+100 of the Widawa River, locate storage sites, technological routes and parking lots beyond the area of meadows constituting the

breeding habitat of Grasshopper Warbler. Conduct works at the land-side of the projected embankment in order to preserve these meadows at their intact state within the future mid-embankment.

2.24 Recommendations for the task: Soltysowice (the embankment along the Inner-city Ring-road) (the WFS structure no. 44.15)

- 2.24.1 At the section at km 15+300 - 15+900 of the Widawa River within the future mid-embankment, within and in the direct vicinity of the patch of a mosaic of natural habitats - oak, elm, ash riverine forests 91F0 and willow, poplar, alder and ash carr *91E0 (identified as h-69 in the Report) as well as the positions of Broad-leaved Helleborine and Common Snowdrop - limit felling / cutting down of riverine trees and brushwood to the width of the embankment base and execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified habitat at the line of the embankment; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.
- 2.24.2 At the section at km 15+300 - 16+300 of the Widawa River - execute culverts in the embankment to enable an inflow of water to the areas separated by the embankments so that not to change the existing ground and water conditions at riverine habitats. All the technological solutions should also allow a free outflow of water so as not to make the habitat swampy.
- 2.24.3 At the section of the Widawa River at km 16+300 - 16+500 - conduct works at a distance exceeding 20 m from the habitat patch - willow, poplar, alder and ash carr *91E0 (identified as h-66 in the Report).
- 2.24.4 At the section at km 14+500 - 14+700 of the Widawa River, within and in the direct vicinity of the patch of the natural habitat - willow, poplar, alder and ash carr *91E0 (identified as h-70 in the Report) - limit felling / cutting down of riverine trees and brushwood to the width of the embankment base and execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified habitat at the line of the embankment; then at the remaining section - at the land-side. Organise storage sites at

the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.

- 2.24.5 At the section at km 13+400 - 14+100 of the Widawa River within and in the direct vicinity of the patch of a mosaic of natural habitats - low-land and mountain fresh meadows used extensively 6510 and *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils 6410 (identified as h-72 in the Report) as well as the positions of Southern adders-tongue - conduct the construction of the embankment at the land-side of the embankment. Organise technological routes and storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.
- 2.24.6 At the section at km 13+000 - 13+400 of the Widawa River within and in the direct vicinity of the patch of a mosaic of natural habitats - low-land and mountain fresh meadows used extensively 6510 and *Molinia* meadows on calcareous, peaty or clayey-silt-laden soils 6410 (identified as h-72 in the Report) - conduct the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified habitat at the line of the embankment; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.
- 2.24.7 At the sections at km 14+000 - 14+500 and 16+000 - 16+800 of the Widawa River, within and in the direct vicinity of the patches of the following natural habitat - Low-land and mountain fresh meadows used extensively 6510 (identified as h-71 and h-64 in the Report) - conduct the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified patches at the line of the embankment; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified patches.
- 2.24.8 At the section at km 15+300 - 16+500 of the Widawa River within the future mid-embankment (within and in the direct vicinity of the positions of Grass Lily, Common Snowdrop and Scarlet cup) - limit felling / cutting down of riverine trees and brushwood to the width of the embankment base and execute the construction of the

embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified positions at the line of the embankment; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified positions (at a distance exceeding 20 m from the positions).

- 2.24.9 At the section at km 15+300 - 16+500 of the Widawa River, within the position of Scarlet cup - apply tolerably efficient protection of tree trunks (e.g. by means of the so-called geo-textile). All the earth works should be conducted so that tree root systems (root hairs) are uncovered for the shortest possible period of time (any exposure of trees for drying or freezing of their root system elements should be avoided).
- 2.24.10 At the section at km 14+000 - 14+500 of the Widawa River - conduct works at a distance exceeding 10 m from the position of Giant puffball (identified as m-3 in the Report).
- 2.24.11 At the sections at km around 16+500 and at km around 15+650 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified as the habitats no. o-43, o-44 in the Report). Building / construction works should be performed beyond the projection area of tree crests. Within the boundaries of the area no storage sites and technological routes should be located as well. It is permitted only to make use of the existing roads (even if they are located within the projection area of tree crest). Then it is required to apply protection of tree trunks (execute by-trunk shields made of planks).
- 2.24.12 Within the places of occurrence of amphibians identified in the Report as follows: p-60 (km 16+200 within the river), p-17 (km 16+100 within the river), p-16 (km 16+200 within the river), p-14 (km 16+700 within the river), p-15 (km 16+500 within the river), p-59 (km 16+700 within the river), p-95 (km 15+300 - 16+900 within the river), p-63 (km 15+300 - 15+500 within the river), p-19 (km 15+700 within the river), p-18 (km 15+700 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.

- 2.24.13 Within the places of occurrence of amphibians identified in the Report as follows: p-59 (km 16+700 within the river), p-96 (km 15+000 - 16+100 within the river) and p-99 (km 13+000 - 14+500 within the river), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from either side of the embankment (land-side or water-side) - not colliding with the habitat. At the section of the embankment crossing the habitats - perform building / construction works from the embankment front (at the same time reducing the area used in the course of building / construction works) to the embankment base area. Do not locate storage sites and technological routes within the boundaries of the habitats. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.24.14 Within the places of occurrence of reptiles identified in the Report as follows: g-64 (km 16+200 within the river), g-65 (km 16+100 within the river), g-66 (km 16+200 within the river), g-67 (km 16+600 - 16+800 within the river), g-68 (km 16+500 within the river), g-71 (km 16+500 - 16+700 within the river), g-72 (km 15+300 - 16+900 within the river), g-77 (km 15+600 within the river), g-78 (km 15+800 within the river), g-79 (km 15+800 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.
- 2.24.15 Within the places of occurrence of amphibians identified in the Report as follows: g-69 (km 16+000 - 16+800 within the river), g-70 (km 16+600 - 16+800 within the river), g-80 (km 15+000 - 16+000 within the river), g-81 (km 12+900 - 14+500 within the river), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from either side of the embankment (land-side or water-side) - not colliding with the habitat. At the section of the embankment crossing the habitat - perform building / construction works from the embankment front (at the same time reducing the area used in the course of building / construction works) to the embankment base area. Do not locate storage sites and technological routes within the boundaries of the habitats. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.24.16 At the sections at km 16+700 and at km 16+600 of the Widawa River, within the habitats of Blue-throat and Great Reed Warbler, conduct all the works within a line of

- the embankment base or at the land-side of the future embankment. Locate technological routes, storage sites and parking lots at the land-side of the embankment.
- 2.24.17 At the section at km 16+500 of the Widawa River at the course of the embankment through the habitat of Common Rose-finch - conduct all the works within a line of the embankment base and locate storage sites and technological routes beyond the area of the above-specified habitat.
- 2.24.18 At the section at km 16+500 - 16+600 of the Widawa River, in the proximity of the breeding habitats of Western Marsh Harrier, Little Ringed Plover and Blue-throat, conduct building / construction works of the eastern part of the embankment at the settlers in Soltysowice in the period from 15 October up to the end of February.
- 2.24.19 Within the places of occurrence of Red-backed Shrike identified in the Report as follows: p-113 (km 13+500 within the river), p-122 (km 14+100 within the river), p-124 (km 13+500 within the river), p-126 (km 13+300 within the river), p-127 (km 13+200 within the river), p-128 (km 13+200 within the river), p-129 (km 13+300 within the river), p-132 (km 12+900 within the river), p-151 (km 14+000 within the river), p-78 (km 16+900 within the river), p-142 (km 11+500 within the river), p-143 (km 11+000 within the river), p-144 (km 10+800 within the river), perform building / construction works only within the embankment base area, making use of the technology of work from the embankment front. At the section of the embankment crossing the meadow habitat - conduct felling / cutting off trees and shrubs only within a line of the embankment base. Within the boundaries of the habitats - do not locate storage sites, parking lots of machines and equipment as well as technological routes.
- 2.24.20 At the section at km 13+300 - 13+400 of the Widawa River - do not conduct works, do not locate technological routes and parking lots of machines and equipment, do not store materials within meadows and bushes constituting the breeding habitat of Barred Warbler.

2.25 Recommendations for the task: Polanowice - the new embankment (WFS structure no. 44.16)

- 2.25.1 At the section at km 12+500 - 12+600 of the Widawa River, within the patch of the following habitat - oak, elm, ash riverine forests 91F0 (identified as h-76) - conduct works at the land-side of the embankment. Locate places of storage of materials and technological routes only at the water-side of the embankment and beyond the area of the above-specified habitat.

- 2.25.2 At the section at km 10+300 - 10+400 of the Widawa River, within the habitat patch - Cnidium meadows 6440 (identified as h-78 in the Report) - conduct all the works at the land-side of the embankment. Locate places of storage of materials and technological routes only at the land-side of the embankment and beyond the area of the above-specified habitat.
- 2.25.3 At the section at km 9+900 - 10+200 of the Widawa River, within the patch of the following habitat - low-land and mountain fresh meadows used extensively 6510 (identified as h-79 in the Report) - conduct all the works at the water-side of the embankment. Locate places of storage of materials and technological routes beyond the area of the above-specified habitat.
- 2.25.4 Within the places of occurrence of amphibians identified in the Report as the following habitats: p-21 (km 12+200 - 12+700 within the river), p-105 (km 9+700 - 10+500 within the river) and reptiles identified in the Report as the following habitats: g-87 (km 12+200 - 12+600 within the river) and g-91 (km 9+800 - 10+500 within the river) - conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.
- 2.25.5 At the section at km 10+300 and 17+200 of the Widawa River, within the breeding habitats of Great Reed Warbler, conduct works at the water-side within a line with its width not exceeding 30 m from the embankment.
- 2.25.6 Within the places of occurrence of Red-backed Shrike identified in the Report as follows: p-113 (km 13+500 within the river), p-122 (km 14+100 within the river), p-124 (km 13+500 within the river), p-126 (km 13+300 within the river), p-127 (km 13+200 within the river), p-128 (km 13+200 within the river), p-129 (km 13+300 within the river), p-132 (km 12+900 within the river), p-151 (km 14+000 within the river), p-78 (km 16+900 within the river), p-142 (km 11+500 within the river), p-143 (km 11+000 within the river), p-144 (km 10+800 within the river), perform building / construction works only within the embankment base area, making use of the technology of work from the embankment front. At the section of the embankment crossing the meadow habitat - conduct felling / cutting off trees and shrubs only within a line of the embankment base. Within the boundaries of the habitats - do not locate storage sites, parking lots of machines and equipment as well as technological routes.

2.26 Recommendations for the task: Prace Widawskie - the new embankment (WFS structure no. 44.17)

- 2.26.1 At the sections at km 8+700 and 9+000 - 9+500 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified as o-66, o-71 and o-72 in the Report). All the building / construction works should be conducted beyond the area of trees and their direct vicinity (beyond the projection area of tree crests). Within the boundaries of the area no storage sites and technological routes should be located as well.
- 2.26.2 At the sections at km 8+700, 9+000 - 9+500 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified as o-67, o-68 in the Report). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).
- 2.26.3 Within the places of occurrence of Red-backed Shrike and Barred Warbler identified in the Report as the following habitats: p-157 (km 8+700 within the river), p-158 (km 8+500 within the river), p-159 (km 7+700 within the river), p-161 (km 7+200 within the river), p-162 (km 7+250 within the river), p-156 (km 8+700 within the river) - perform felling / cutting down trees and shrubs only within a line of the embankment base. Within the boundaries of the habitats - do not locate storage sites, parking lots of machines and equipment as well as technological routes.

2.27 Recommendations for the task: Prace Widawskie - demolition of the embankment (WFS structure no. 46.2).

- 2.27.1 At the sections at km 7+500 - 7+700, 7+200 - 7+300, 7+100, 7+200, 8+300 - 8+600, 8+700 of the Widawa River - do not fell / cut down blackthorn brushwood constituting the habitat of Caterpillar Moth (identified in the Report as o-74, o-75, o-76, o-60, o-61, o-63, o-64). Conduct all the building / construction works beyond the area of shrubs and their direct vicinity. Within the boundaries of the area no storage sites and technological routes should be located as well.

2.28 Recommendations for the task: Swiniary - modernisation of the embankment (the WFS structure no. 44.18)

- 2.28.1 At the section at km 3+900 - 4+200 of the Widawa River, within the patch of the following habitat - oak, elm, ash riverine forests 91F0 (identified in the Report as h-

- 87) as well as the positions of Common Snowdrop - conduct all the works at the land-side of the embankment. Locate places of storage of materials and technological routes only at the land-side of the embankment and beyond the area of the above-specified habitat. Conduct all the works related to temporary occupation of land at the land-side of the embankment. Limit possible felling / cutting down of trees and shrubs to the width of the embankment base.
- 2.28.2 At the section at km 4+600 - 7+000 of the Widawa River within the future mid-embankment, within and in the direct vicinity of the patch of a mosaic of the following natural habitats - oak, elm, ash riverine forests 91F0 and oak-hornbeam forests 9170 (identified in the Report as h-82) as well as the positions of Common Snowdrop, Lily of the Valley and Broad-leaved Helleborine - limit felling / cutting down of riverine trees and brushwood to the width of the embankment base and execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified habitat at the line of the embankment; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.
- 2.28.3 At the sections at km: 3+900, 4+600, 8+300 - 8+600, 8+700, 7+100 of the Widawa River - do not fell / cut down blackthorn brushwood constituting the habitat of Caterpillar Moth (identified in the Report as o-113, o-79, o-63, o-64, o-66, o-60 and o-76). Conduct all the building / construction works beyond the area of shrubs and their direct vicinity. Within the boundaries of the area no storage sites and technological routes should be located as well.
- 2.28.4 In the period from February to the end of April under the supervision of a specialist - entomologist - collect eggs and cocoons of first larval stages from the positions (identified in the Report as o-60 and o-76) located at km 7+100 of the Widawa River and transfer to a habitat being appropriate for the species.
- 2.28.5 At the section at km 5+500 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified as the habitats no. o-120 in the Report). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in

- autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).
- 2.28.6 Within the places of occurrence of amphibians identified in the Report as the following habitats: p-108 (km 4+000 - 6+100 within the river), p-24 (km 5+300 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.
- 2.28.7 At the section at km 4+600 - 6+700 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-107 in the Report) and reptiles (identified as the habitat no. g-98 in the Report) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.28.8 Within the places of occurrence of reptiles identified in the Report as the following habitats: p-97 (km 4+000 - 6+000 within the river), p-99 (km 5+200 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.
- 2.28.9 At the section at km 6+500 of the Widawa, within the breeding habitat of Lapwing - locate access roads and places of storage of materials at the water-side of the embankment.
- 2.28.10 At the section at km 4+600 - 6+100 of the Widawa River - conduct felling / cutting down trees within the habitat of Grey-headed Woodpecker, Black Woodpecker, Middle Spotted Woodpecker only within a line of the embankment base. At the section at which the embankment runs through forest areas (at km 4+600 - 5+600 within the river) - conduct all the modernisation works from the embankment crest, then at the section where the embankment adheres the forest - at the water-side of the embankment (at km 5+600 - 6+100 of the river) - conduct works at the land-side of the embankment.
- 2.29 Recommendations for the task: Krzywoustego - the railway lines, modernisation of the embankment (the WFS structure no. 45.3).**

- 2.29.1 At the section at km 16+900 - 17+200 of the Widawa River, within and in the direct vicinity of the patch of the following habitat - willow, poplar, alder and ash carr *91E0 (identified in the Report as h-10) and the patch of a mosaic of the following habitats - low-land and mountain fresh meadows used extensively 6510 and Cnidium meadows 6440 (identified in the Report as h-11) - execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections crossing the above-specified habitats within a line of the embankment. Organise storage sites beyond the boundaries and beyond the vicinity of the above-specified habitats. Limit felling / cutting down of riparian trees and shrubs to the width of the projected embankment base.
- 2.29.2 At the section at km 16+900 - 17+200 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-92 in the Report) and reptiles (identified as the habitat no. g-22 in the Report) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.29.3 At the section at km 16+900 - 17+100 of the Widawa River, within the breeding habitat of Grasshopper Warbler - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front.

2.30 Recommendations for the task: Psie Pole - the new embankment (the WFS structure no. 44.4).

- 2.30.1 At the section at km 16+600 - 16+800 of the Widawa River - do not perform building / construction works within and in the direct proximity of the patch of the following habitat - Old river beds and natural eutrophic water reservoirs 3150 (identified as h-14 in the Report).
- 2.30.2 At the section at km 16+500 - 16+900 of the Widawa River, within the habitat patch - low-land and mountain fresh meadows used extensively 6510 (identified as h-4 in the Report) - execute the construction of the embankment at the section running through the habitat from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes

at the section crossing the above-specified habitat within a line of the embankment. Organise storage sites beyond the boundaries and beyond the direct vicinity of the above-specified habitat.

- 2.30.3 At the section at km 16+500 - 16+900 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-93 in the Report) and reptiles (identified as the habitat no. g-25 in the Report) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.30.4 At the section at km 16+500 - 16+700 of the Widawa River, within the breeding habitat of Grasshopper Warbler - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front. Within the boundaries of the habitat - do not locate storage sites, parking lots of machines and equipment as well as technological routes.

2.31 Recommendations for the task: Klokoczyce - the new embankment (the WFS structure no. 44.5).

- 2.31.1 At the section at km 15+100 - 16+500 of the Widawa River, within the patch of the following habitat - Low-land and mountain fresh meadows used extensively 6510 (identified as h-18 in the Report) - execute the construction of the embankment at the section running through the habitat from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the section crossing the above-specified habitat within a line of the embankment. Organise storage sites beyond the boundaries and beyond the direct vicinity of the above-specified habitat.
- 2.31.2 At the section at km 20+500 - 21+000 of the Widawa River - do not perform building / construction works within and in the direct proximity of the habitat patch - old river beds and natural eutrophic water reservoirs 3150 (identified as h-3 in the Report).
- 2.31.3 At the section at km 13+000 - 14+200 of the Widawa River, within and in the vicinity of the patch of the following habitat - Low-land and mountain fresh meadows used extensively 6510 (identified as h-19 in the Report) - do not locate technological routes and storage sites.

- 2.31.4 At the section at km 14+250 of the Widawa River - do not fell / cut down blackthorn brushwood constituting the habitat of Caterpillar Moth (identified in the Report as o-89). Conduct all the building / construction works beyond the area of shrubs and their direct vicinity (beyond the projection area of shrub crests). Within the boundaries of the area no storage sites and technological routes should be located as well.
- 2.31.5 Within the places of occurrence of amphibians identified in the Report as follows: p-97 (km 14+600 - 16+500 within the river), p-101 (km 14+500 - 14+800 within the river), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from either side of the embankment (land-side or water-side) - not colliding with the habitat. At the section of the embankment crossing the habitat - perform building / construction works from the embankment front (at the same time reducing the area used in the course of building / construction works) to the embankment base area. Do not locate storage sites and technological routes within the boundaries of the habitats. The existing network of roads and the technological road designated at the route of the embankment should be used for transportation purposes.
- 2.31.6 Within the places of occurrence of amphibians identified in the Report as the following habitats: p-98 (km 16+000 - 16+400 within the river) p-61 (km 16+000 within the river) p-62 (km 15+900 within the river), p-102 (km 13+400 - 14+200 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.
- 2.31.7 Within the places of occurrence of reptiles identified in the Report as follows: g-76 (km 15+100 - 16+500 within the river), g-82 (km 14+600 - 15+200 within the river), g-83 (km 14+500 - 14+800 within the river), conduct building / construction works only within the embankment base, making use of the technology of work from the embankment front or from either side of the embankment (land-side or water-side) - not colliding with the habitat. At the section of the embankment crossing the habitat - perform building / construction works from the embankment front (at the same time reducing the area used in the course of building / construction works) to the embankment base area. Do not locate storage sites and technological routes within the boundaries of the habitats. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.

- 2.31.8 At the section at km 14+200 of the Widawa River - do not locate the places of storage of materials, technological routes and parking lots of machines and equipment within shrubs constituting the breeding habitat of Red-backed Shrike. The western end of the embankment should be executed in a manner which does not damage the above-specified habitat.
- 2.31.9 At the section at km 15+400 - 16+400 of the Widawa River, within the breeding habitats of Grasshopper Warbler and Corn Crake - conduct all the works within a line of the embankment base. Locate technological routes, storage sites and parking lots at the land-side of the embankment and beyond the above-specified habitats.
- 2.31.10 At the construction of the western end of the projected embankment - do not allow to damage the river banks and the existing water and rush vegetation being the breeding habitat of Great Reed Warbler (at km 14+300 - 14+500 within the river).
- 2.31.11 At the section at km 16+300 of the Widawa River, within the boundaries of a forest being the breeding habitat of Grey-headed Woodpecker - do not locate the places of storage of materials and parking lots of machines and equipment. Execute felling / cutting down of riparian trees and shrubs only within a line of the embankment base.

2.32 Recommendations for the task: Krzyzanowice - the new embankment (the WFS structure no. 44.6)

- 2.32.1 At the section at km 12+200 - 12+500 of the Widawa River, within and in the direct vicinity of the patch of the following natural habitat - willow, poplar, alder and ash carr *91E0 (identified as h-20 in the Report) - execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections crossing the above-specified habitat within a line of the embankment. Organise storage sites beyond the boundaries and beyond the direct vicinity of the above-specified habitat. Limit felling / cutting down of riparian trees and shrubs to the width of the projected embankment base.
- 2.32.2 At the section at km 13+100 of the Widawa River, within the habitat of Blue-throat - do not locate technological routes and parking lots of machines and equipment, do not store materials.
- 2.32.3 At the section at km 12+900 of the Widawa River, within the habitat of Red-backed Shrike - do not locate technological routes and parking lots of machines and

equipment, do not store materials. Execute felling / cutting down of trees and shrubs only within a line of the embankment base.

2.33 Recommendations for the task: Krzyzanowice - modernisation of the embankment (the WFS structure no. 45.4).

2.33.1 At the section at km 12+200 of the Widawa River, within the habitat of Red-backed Shrike (identified in the Report as p-133), conduct all the modernisation works at the land-side within a line with its width not exceeding 20 m from the embankment.

Locate places of storage of materials and technological routes beyond the habitat.

2.34 Recommendations for the task: Psary - the new embankment (the WFS structure no. 44.7)

2.34.1 At the section at km 11+300 - 11+400 of the Widawa River, within the future mid-embankment - do not conduct building and construction works within and in the direct vicinity of the patch of a mosaic of the following habitats - Old river beds and natural eutrophic water reservoirs 3150 and willow, poplar, alder and ash carr *91E0 (identified in the Report as h-22) as well as the positions of Common Snowdrop, Broad-leaved Helleborine, Yellow Water-lily and White Water-lily. Organise technological routes and storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified patch. For the duration of the construction it is required to secure shrubs and trees within banks of the above-specified old river-bed against damage.

2.34.2 At the section at km 10+700 - 10+800 of the Widawa River, within the patch of the following habitat - oak, elm, ash riverine forests 91F0 (identified in the Report as h-25) - limit felling / cutting down of riverine trees and brushwood to the width of the embankment base and execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections intersecting the above-specified habitat at the line of the embankment; then at the remaining section - at the land-side. Organise storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the above-specified habitat.

2.34.3 At the sections at km 10+000 - 10+700 and 11+600 - 11+800 of the Widawa River - conduct works at a distance exceeding 20 m from the patches of the habitat - willow, poplar, alder and ash carr *91E0 (identified as h-21 and h-26 in the Report).

- 2.34.4 At the sections at km 10+800 - 11+000 and 11+100 - 11+300 of the Widawa River, within the patches of the habitat - Low-land and mountain fresh meadows used extensively 6510 (identified respectively in the Report as h-24 and h-23) as well as the positions of Grass Lily - execute the construction of the embankment at the section running through the habitat from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections crossing the above-specified patches within a line of the embankment. Organise storage sites beyond the boundaries and beyond the direct vicinity of the above-specified patches.
- 2.34.5 At the sections of the embankment at km: 10+800, 10+700, 9+700, 10+600 of the Widawa River - do not fell / cut down blackthorn brushwood constituting the habitat of Caterpillar Moth (identified in the Report as o-90, o-91, o-94, o-98, o-99). Conduct all the building / construction works beyond the area of shrubs and their direct vicinity (beyond the projection area of shrub crests). Within the boundaries of the area no storage sites and technological routes should be located as well.
- 2.34.6 At the section at km 10+700 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified in the Report as o-92). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).
- 2.34.7 At the sections at km: 10+000, 10+500 of the Widawa River - do not fell / cut down blackthorn brushwood constituting the habitat of Caterpillar Moth (identified in the Report as o-95, o-96 and o-97). Conduct all the building / construction works beyond the area of shrubs and their direct vicinity (beyond the projection area of shrub crests). Within the boundaries of the area no storage sites and technological routes should be located as well.
- 2.34.8 At the section at km 11+300 of the Widawa River, within the place of occurrence of amphibians (identified in the Report as the habitat no. p-22) and reptiles (identified in the Report as the habitat no. g-88), building / construction works should be conducted

beyond the above-specified habitat. Do not locate storage sites and technological routes within the boundaries of the habitat.

- 2.34.9 At the section at km 11+000 - 11+400 of the Widawa River, within the place of occurrence of amphibians (identified in the Report as the habitat no. p-104), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.34.10 Within the places of occurrence of reptiles identified in the Report as the following habitats: g-32 (km 11+200 - 11+500 within the river), g-33 (km 11+200 - 11+500 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.
- 2.34.11 At the section at km 11+000 - 11+500 of the Widawa River, within the place of occurrence of reptiles (identified as the habitat no. g-90 in the Report), perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of roads and the technological route designated at the route of the embankment should be used for transportation purposes.
- 2.34.12 At the section at km 11+100 of the Widawa River, within the habitat of Corn Crake (identified as p-139 in the Report) - conduct works only within a line of the embankment base (footing).
- 2.34.13 Within the places of occurrence of Red-backed Shrike, Corn Crake, Middle Spotted Woodpecker identified in the Report as the following habitats: p-135 (km 11+600 within the river), p-137 (km 11+400 within the river), p-138 (km 11+300 within the river), p-140 (km 11+000 within the river), p-141 (km 10+900 within the river), p-145 (km 10+800 within the river), p-146 (km 10+800 within the river) - perform felling / cutting down trees and shrubs only within a line of the embankment base. Within the boundaries of the habitats - do not locate storage sites, parking lots of machines and equipment as well as technological routes.

2.34.14 At the sections at km 9+700 - 10+000, 11+700 of the Widawa River, within the habitats of Grey-headed Woodpecker and Red-backed Shrike (identified respectively in the Report as p-150, p-134 and p-151) - do not locate any places of storage of materials and technological routes at the right bank of the river. Do not fell / cut down trees in the tree stand located east off the bridge as well as bushes located northern-east off the bridge (km 9+800 within the river).

2.35 Recommendations for the task B3.34 - Psary - the island embankment (the WFS structure no. 44.8).

- 2.35.1 At the section at km 8+400 - 8+700 of the Widawa River, within and in the direct vicinity of the patch of the following natural habitat - oak, elm, ash riverine forests 91F0 (identified in the Report as h-30) - limit felling / cutting down of riverine trees and brushwood to the width of the embankment base and execute the construction of the embankment from its front (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Locate technological routes at the sections crossing the above-specified habitat within a line of the embankment. Organise storage sites beyond the boundaries and beyond the direct vicinity of the above-specified habitat.
- 2.35.2 At the section at km 8+400 - 8+700 of the Widawa - do not perform building / construction works as well as do not locate technological routes and storage sites within the patch of the following habitat - low-land and mountain fresh meadows used extensively 6510 - identified as h-29.
- 2.35.3 At the sections at km: 8+500, 8+400 - 8+500, 8+600 of the Widawa River - do not fell / cut down blackthorn brushwood constituting the habitat of Caterpillar Moth (identified in the Report as o-100, o-101, o-102 and o-103). Conduct all the building / construction works beyond the area of shrubs and their direct vicinity (beyond the projection area of shrub crests). Within the boundaries of the area no storage sites and technological routes should be located as well.
- 2.35.4 At the section at km 9+700 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified in the Report as o-94). All the building / construction works should be conducted beyond the area of trees and their direct vicinity (beyond the projection area of tree crests). Within the boundaries of the area no storage sites and technological routes should be located as well.

2.35.5 At the section at km 9+000 of the Widawa, within the habitat of Red-backed Shrike (identified in the Report as p-152) - do not locate technological routes, storage sites and parking lots of machines and equipment.

2.36 Recommendations for the task: Szymanow - the new embankment (the WFS structure no. 44.9).

2.36.1 At the section at km 8+200 - 8+400 of the Widawa River - conduct works at a distance exceeding 10 m from the habitat patch - willow, poplar, alder and ash carr *91E0 (identified as h-31 in the Report). Locate technological routes and storage sites at the land-side of the embankment.

2.36.2 At the sections at km: 7+200 - 7+300, 8+500, 8+400 of the Widawa River - do not fell / cut down blackthorn brushwood constituting the habitat of Caterpillar Moth (identified in the Report as o-77, o-100, o-101 and o-104). Conduct all the building / construction works beyond the area of shrubs and their direct vicinity (beyond the projection area of shrub crests). Within the boundaries of the area no storage sites and technological routes should be located as well.

2.36.3 At the section at km 7+800 and 8+600 of the Widawa River - do not fell / cut down trees constituting the habitat of Great Capricorn (identified as the habitats no. o-103, o-78 in the Report). All the building / construction works should be conducted beyond the area of trees and their direct vicinity (beyond the projection area of tree crests). Within the boundaries of the area no storage sites and technological routes should be located as well.

2.36.4 Within the places of occurrence of amphibians and reptiles identified respectively in the Report as the following habitats: p-106 and g-94 (km 8+200 - 8+400 within the river), p-65 and g-93 (km 8+200 - 8+400 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.

2.36.5 At the section at km 8+000 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-66 in the Report) and reptiles (identified as the habitat no. g-96 in the Report) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment water-side. Do not locate storage sites and technological routes within the boundaries of the habitat. The existing network of

roads and the technological road designated at the route of the embankment should be used for transportation purposes.

- 2.36.6 At the section at km 8+300 - 8+400 of the Widawa River, within the habitats of Red-backed Shrike - do not locate technological routes and parking lots of machines and equipment, do not store materials. Perform works including felling / cutting down of trees and shrubs only within a line of the embankment base.

2.37 Recommendations for the task: Szewce - the new embankment (the WFS structure no. 44.10).

- 2.37.1 At the section at km 4+000 - 6+000 of the Widawa River within the future mid-embankment, within and in the direct vicinity of the patch of a mosaic of the following natural habitats - oak, elm, ash riverine forests 91F0 and oak-hornbeam forests 9170 (identified in the Report as h-34) as well as the positions of Common Snowdrop, Lily of the Valley and Broad-leaved Helleborine - execute the construction of the embankment from its land-side (at the same time with limiting the occupation of land down to the projected width of the embankment base (footing). Organise technological routes and storage sites at the land-side of the embankment and beyond the area of the above-specified patch.
- 2.37.2 At the section at km 4+000 - 6+000 of the Widawa River - conduct felling / cutting down of trees and shrubs only within 50-m section of the embankment - within the road in the direction of Oborniki Śląskie. Limit the felling / cutting down to the width of the embankment base.
- 2.37.3 At the section at km 3+000 - 3+600 of the Widawa River at which the route of the embankment is adjacent to the patch of a mosaic of the following habitats - oak, elm, ash riverine forests 91F0 and willow, poplar, alder and ash carr *91E0 (identified in the Report as h-36) as well as the positions of Common Snowdrop and Broad-leaved Helleborine - locate places of storage of materials and technological routes only at the land-side of the embankment and beyond the area of the above-specified patch. Conduct all the works related to temporary occupation of land at the land-side of the embankment.
- 2.37.4 At the section at km 6+600 - 7+000 of the Widawa River, within the future mid-embankment (within and in the direct vicinity of the patch of the following habitat - willow, poplar, alder and ash carr *91E0 (identified as h-32 in the Report) - execute the construction of the embankment at the land-side of the embankment (at the same

- time with limiting the occupation of land down to the projected width of the embankment base (footing)). Organise technological routes and storage sites at the land-side of the embankment and beyond the area of the above-specified patch.
- 2.37.5 At the sections at km: 6+400 and 5+200 - 5+700 of the Widawa River - do not fell / cut down blackthorn brushwood constituting the habitat of Caterpillar Moth (identified in the Report as o-108 and o-112). Conduct all the building / construction works beyond the area of shrubs and their direct vicinity (beyond the projection area of shrub crests). Within the boundaries of the area no storage sites and technological routes should be located as well.
- 2.37.6 At the section at km 6+500 of the Widawa River - do not fell / cut down trees constituting the habitats of Great Capricorn (identified in the Report as o-107). All the building / construction works should be conducted beyond the area of trees and their direct vicinity (beyond the projection area of tree crests). Within the boundaries of the area no storage sites and technological routes should be located as well.
- 2.37.7 At the sections at km 3+900 and 5+200 - 5+700 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified in the Report as o-38, o-112). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).
- 2.37.8 In the period from February to the end of April under the supervision of a specialist - entomologist - collect eggs and cocoons of first larval stages from the positions of Caterpillar Moth (identified in the Report as o-37, o-38, o-105, o-106, o-110, o-111, o-112) located at km 3+200 - 3+400, 3+900, 7+200, 6+700, 6+000 - 6+400, 5+200 - 5+700 of the Widawa River and transfer to a habitat being appropriate for the species.
- 2.37.9 At the sections at km: 3+000 - 3+100, 3+300 - 3+500 and 4+100 - 4+900 of the Widawa River - do not fell / cut down blackthorn brushwood constituting the habitat of Caterpillar Moth (identified in the Report as o-34, o-35, o-36 and o-111). Conduct all the building / construction works beyond the area of shrubs and their direct vicinity (beyond the projection area of shrub crests). Within the boundaries of the area no storage sites and technological routes should be located as well.

- 2.37.10 In the period from February to the end of April under the supervision of a specialist - entomologist - collect eggs and cocoons of first larval stages from the positions of Caterpillar Moth (identified in the Report as o-37, o-38, o-105, o-106, o-110, o-111, o-112) located at km 3+200 - 3+400, 3+900, 7+200, 6+700, 6+000 - 6+400, 4+900 - 5+100, 5+200 - 5+700 of the Widawa River and transfer to a habitat being appropriate for the species.
- 2.37.11 At the sections at km 4+600 - 5+300 of the Widawa River - do not fell / cut down trees constituting the habitat of Hermit Beetle and Great Capricorn (identified in the Report as 0-111). It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February).
- 2.37.12 At the section at km 3+400, 3+300, 3+050 - 3+200, 3+500 of the Widawa River - do not fell / cut down trees constituting the habitat of Great Capricorn (identified respectively in the Report as o-39, o-40, o-41, o-42). All the building / construction works should be conducted beyond the area of trees and their direct vicinity (beyond the projection area of tree crests). Within the boundaries of the area no storage sites and technological routes should be located as well.
- 2.37.13 Within the places of occurrence of amphibians identified in the Report as the following habitats: p-68 (km 3+800 - 4+000 within the river), p-126 (km 6+700 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.
- 2.37.14 At the section at km 4+000 - 6+100 of the Widawa River, within the place of occurrence of amphibians (identified as the habitat no. p-108 in the Report) and reptiles (identified as the habitat no. g-97 in the Report) - perform building / construction works only within the embankment base, making use of the technology of work from the embankment front or from the embankment land-side. Do not locate storage sites and technological routes within the boundaries of the habitat. Use the existing network of roads and the technological road designated at the route of the embankment for transportation purposes.

- 2.37.15 Within the places of occurrence of reptiles identified in the Report as the following habitats: g-107 (km 4+000 within the river), g-126 (km 6+800 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.
- 2.37.16 At the sections at km 3+400 - 4+000, 4+900 - 5+900 and 7+100 of the Widawa River within the habitats of Red-backed Shrike (identified in the Report as p-160, p-170, p-173, p-178, p-179) - conduct works at the land-side of the embankment and do not locate technological routes, parking lots for machines and equipment as well as storage sites at the land-side of the embankment.

2.38 Recommendations for the task: Paniowice - demolition of the flood-protection embankment (the WFS structure no. 19).

- 2.38.1 Conduct the demolition of fences at km around 2+700 of the Widawa River with no interference in the patches of the following habitat - Old river beds and natural eutrophic water reservoirs 3150 (identified in the Report as h-39 and h-40).
- 2.38.2 Limit places of the demolition within the embankment to the areas in the proximity of which mid-forest paths go (as they will serve as access roads as well as routes of transportation of materials from the demolition site).
- 2.38.3 Conduct all the works at the demolition of the embankment by means of light building / construction machines and equipment, e.g. mini excavator (with the capacity of its loading bucket p to 0,06 m³), means of transport (with their capacity up to 10 tonnes), mini excavator (with the capacity of its loading bucket p to 0,05 m³).
- 2.38.4 Limit all the required felling / cutting only to trees and shrubs growing at the embankment at places of its demolition, without disturbing the habitat, including trees being adjacent to the embankment.
- 2.38.5 Exclude sections of the embankment at km around 0+500, 1+600, 2+200, 2+250 of the Widawa River within and in the direct vicinity of the positions of Lily of the Valley and Yellow Water-lily out of the demolition.
- 2.38.6 Within the places of occurrence of amphibians identified in the Report as the following habitats: p-25 (km 2+700 within the river), p-31 (km 1+600 - 1+300 within the river), p-33 (km 0+000 within the river), p-28 (km 0+000 within the river), p-29 (km 0+000 within the river), p-116 (km 0+000 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.

- 2.38.7 Within the places of occurrence of amphibians identified in the Report as the following habitats: p-111 (km 2+100 - 3+000 within the river), p-113 (km 0+000 - 1+300 within the river), p-114 (km 0+000 - 1+800 within the river), p-115 (km 0+000 within the river), conduct all the works at the demolition of the embankment by means of light building / construction machines and equipment, e.g. mini excavator (with the capacity of its loading bucket p to 0,06 m³), means of transport (with their capacity up to 10 tonnes), mini excavator (with the capacity of its loading bucket p to 0,05 m³).
- 2.38.8 Within the places of occurrence of reptiles identified in the Report as the following habitats: g-34 (km 1+600 - 1+ 700 within the river), g-37 (km 2+700 within the river), g-109 (km 0+000 within the river), g-110 (km 0+000 within the river), g-113 (km 0+000 within the river), conduct building / construction works beyond the above-specified habitats. Do not locate storage sites and technological routes within the boundaries of the habitats.
- 2.38.9 Within the places of occurrence of reptiles identified in the Report as the following habitats: g-102 (km 0+000 - 1+800 within the river), g-103 (km 0+000 - 1+300 within the river), g-104 (km 0+000 within the river), g-106 (km 2+000 - 3+000 within the river), conduct all the works at the demolition of the embankment by means of light building / construction machines and equipment, e.g. mini excavator (with the capacity of its loading bucket p to 0,06 m³), means of transport (with their capacity up to 10 tonnes), mini excavator (with the capacity of its loading bucket p to 0,05 m³).
- 2.38.10 At the section of the embankment at km 0+000 - 2+000 of the Widawa River - leave sections of the embankment located within old trees (the oldest tree stand) as well as over-grown with older tree units. Limit felling / cutting off trees and shrubs to the sections covered by the demolition. Do not remove greenery in the direct vicinity of the embankment.

3. Requirements concerning the environmental protection required to consider in the documentation to issue a decision specified in article 72, clause 1 of the act *on sharing information about the environment and its conservation, public participation in environmental protection and environmental impact assessments*:

3.1 General Recommendations

- 3.1.1 Do not locate the background facilities of construction sites and manoeuvring places at the areas at which the occurrence of protected natural habitats is inventoried, within

mid-embankments and at a distance not shorter than 100 m from the existing water reservoirs and ponds, oxbow lakes and wetland areas.

- 3.1.2 Organise the construction site taking into account the principles of minimising the occupation of lands.
- 3.1.3 Locate technological routes at a distance not shorter than 100 m from water reservoirs, ponds and oxbow lakes.
- 3.1.4 Plan all the works consisting in the regulation, streamlining and strengthening the river-bed of the Widawa River only at sections under the re-built bridges and 50-m sections below and above the bridges.
- 3.1.5 Determine the manner of dealing with wastes and earth masses generated at the stage of implementation of the investment considering the terms and conditions included in point I.2.1.48-I.2.1.50 of the present decision.
- 3.1.6 Determine the manner of drainage of foundation ditches under the embankment culverts considering the recommendations indicated in point I.2.1.55.
- 3.1.7 Apply the so-called "quiet surface" at the re-constructed bridge structures ensuring the reduction of the level of noise.
- 3.1.8 Determine the manner of drainage of bridge structures considering the conditions indicated in point I.2.3.7, I.2.4.6, I.2.6.5, I.2.19.6, I.2.20.5.
- 3.1.9 Determine the manner of conducting works at the bridge structures, minimising their negative impact onto the adjacent areas - considering the terms and conditions specified in point I.2.3.4, I.2.4.4, I.2.6.2, I.2.7.2, I.2.19.4, I.2.20.3, I.2.21.3.
- 3.1.10 Determine the manner of embedding / seating of bridge structures considering the terms and conditions specified in point I.2.3.5, I.2.4.5, I.2.6.3, I.2.7.3, I.2.19.5, I.2.20.4.
- 3.1.11 Determine the manner of dealing with pumped-out waters considering the terms and conditions specified in I.2.2.8, I.2.3.6, I.2.4.6, I.2.6.4, I.2.7.40.

3.2 Recommendations for the task: Szewce - the new embankment (the WFS structure no. 44.10)

- 3.2.1 At the section at km 4+000 up to km 6+100 of the Widawa River - design the embankment route north off the patch of a mosaic of the following habitats: oak-hornbeam forests 9170 and oak, elm, ash riverine forests 91F0 (identified in the Report as h-34) at a distance exceeding 5 m off the edge of the above-specified habitat.

- 3.2.2 At the section at km 3+200 up to 3+500 of the Widawa River - design the route of the embankment north off the patch of a mosaic of the following habitats: oak, elm, ash riverine forests 91F0 and willow, poplar, alder and ash carr *91E0 (identified in the Report as h-36) at a distance exceeding 5 m off the edge of the above-specified habitat.

3.3 Recommendations for the task: Wilczyce - modernisation of the embankment (WFS structure no. 45.2).

- 3.3.1 At the sections at km 21+750, 21+700, 19+300 - 21+700 of the Widawa River in order to protect the habitats of Hermit Beetle and Great Capricorn (identified in the Report as o-19, o-20 and o-27) - apply prefabricated walls made of T or L elements for the construction of the embankment.

3.4 Recommendations for the task: Modernisation of the embankment (WFS structure no. 45.1).

- 3.4.1 At the sections at km 21+500, 21+700 of the Widawa River in order to protect the habitats of Hermit Beetle and Great Capricorn (identified in the Report as o-9, o-8) - apply prefabricated walls made of T or L elements for the construction of the embankment.

3.5 Recommendations for the task: Zgorzelisko (up to B. Krzywoustego Street) - the new embankment (the WFS structure no. 44.3).

- 3.5.1 At the sections at km 18+000, 19+500 - 19+600, 19+300 - 21+700 of the Widawa River in order to protect the habitats of Hermit Beetle and Great Capricorn (identified in the Report as o-29, o-28 and o-27) - apply prefabricated walls made of T or L elements for the construction of the embankment.

3.6 Recommendations for the task: Prace Widawskie - the new embankment (WFS structure no. 44.17)

- 3.6.1 At the sections at km 8+700 and 9+000 - 9+500 of the Widawa River in order to protect the habitats of Hermit Beetle and Great Capricorn (identified in the Report as o-66, o-71, o-72, o-67, o-68) - apply prefabricated walls made of T or L elements for the construction of the embankment.

3.7 Recommendations for the task: Swiniary - modernisation of the embankment (the WFS structure no. 44.18).

- 3.7.1 At the section at km 5+500 of the Widawa River in order to protect the habitats of Hermit Beetle and Great Capricorn (identified in the Report as o-120) - apply prefabricated walls made of T or L elements for the construction of the embankment.

3.8 Recommendations for the task: Psary - the new embankment (the WFS structure no. 44.7)

- 3.8.1 At the section at km 10+700 of the Widawa River in order to protect the habitats of Hermit Beetle and Great Capricorn (identified in the Report as o-92) - apply prefabricated walls made of T or L elements for the construction of the embankment.

3.9 Recommendations for the task: Szewce - the new embankment (the WFS structure no. 44.10)

- 3.9.1 At the sections at km 4+600 - 5+300, 3+900 and 5+200 - 5+700 of the Widawa River in order to protect the habitats of Hermit Beetle and Great Capricorn (identified in the Report as o-111, o-38 and o-112) - apply prefabricated walls made of T or L elements for the construction of the embankment.

III. I state it necessary:

1. to conduct environmental compensation:

- 1.1 For the destruction of the habitats of butterflies: Dusky Large Blue *Maculinea nausitous* and Scarce Large Blue *Maculinea teleius* with its total area of 1,04 ha - at the land plot no. 3, Precinct of Swiniary, AM-23 - restore meadows with their area not lower than 2 ha. The restored meadows should have appropriate species composition (for the above-specified species) similar to flora composition of the damaged habitats, considering flood plants both for caterpillars as well as nectar-giving plants for adults of the above-specified butterflies.
- 1.2 For the destruction of the habitats of amphibians with their total area of around 0,71 ha - at the land plots no. 7/2, 10 and 11, Precinct of Swojczyce, AM-24 - execute new water reservoirs with their total area of water surface not lower than 1 ha. The reservoirs should have favourable parameters for the breeding of amphibians: their depth - up to 1-1,5 metre at the deepest place, so that once per several years they get dry, tilt of their slopes - around 1:3 - 1:5 both over the water surface as well as under the water surface. There should be shallows made at one of the banks and the opposite bank(s) should be planted with shrubs. Do not fish the reservoirs.
- 1.3 For the destruction of patches of the natural habitat - low-land and mountain fresh meadows used extensively (code - 6510) with their area of around 14,2 ha - at the land

plots no. 2/1, Precinct of Psie Pole AM-16, no. 5, Precinct of Psie Pole, AM-2, no. 1, Precinct of Widawa, AM-1, no. 3, Precinct of Widawa, AM-1, no. 10, Precinct of Zgorzelisko, AM-12, no. 15, Precinct of Zgorzelisko AM-12 - conduct activities consisting in annual, at least once, mowing and removing of mowed biomass, removing foreign species of plants aimed to improve the state of conservation of patches of fresh meadows located in the valley of the Widawa River at the area not lower than 29 ha. Perform the activities for the period of 5 years.

- 1.4 For the destruction of patches of the natural habitat - oak, elm, ash riverine forests (code - 91F0) with their area of 1,6 ha - at the land plot no. 3, Precinct of Swiniary, AM-23 - restore riparian forests with their area of 1,5 ha. The compensation should be conducted through forestation of the area taking into account appropriate tree species (for the type of natural habitats). The basic principles of forest cultivation should be maintained. All the detailed solutions should be implemented under the guidance of a specialist - phyto-sociologist.
- 1.5 Start the performance of the activities specified in point II.1.1, II.1.3 and II.1.4 (prepare the surface for the restoration of meadows, mow with a mixture of grasses and dicotyledonous plants, conduct at least one mowing with biomass collection and prepare the surface and plant with tree seedlings) prior to the start of commencement of the considered tasks.
- 1.6 Finish the performance of the activities specified in point II.1.2 (execute the reservoirs together with managing their vegetation) prior to the commencement of the considered tasks.

2. Monitoring the impact of the Works Contract onto the environment:

- 3.1 At the performance of the investment - conduct - with the participation of specialists - constant natural supervision considering the proper accomplishment of preventive and minimising measures in reference to the protected natural habitats as well as the species of fauna and flora. The supervision should include:
 - 3.1.1 Pre-implementation monitoring conducted by an entomologist in terms of the location of occurrence of (among others) places and populations of the protected species of insects.
 - 3.1.2 Pre-implementation monitoring conducted by a chiropterologist in order to identify the potential living places of bats.

- 3.1.3 Monitoring (by specialists in the field of zoology and botany) of the occupation of the area and the correctness of the executed works within and in the direct vicinity of the protected natural habitats as well as the habitats of the species of plants and animals.
- 3.1.4 Supervision of an ichthyologist at the conduct of works at the section in the proximity of the habitat of occurrence of Ray-finned fish *Sabanejewia aurata* (1146).
- 3.1.5 Supervision of a zoologist or herpetologist covering the monitoring of occurrence of amphibians and reptiles at the area(s) of the conducted building / construction works.
- 3.1.6 In case of statement of low effectiveness of the introduced minimising measures in the course of such supervision, immediately develop appropriate modifications with the participation of specialists and implement them.
- 3.2 Every year at the peaks of growing seasons of the species - within 2 years from the time of moving plants - with the participation of a botanist - examine the state of the protected plants moved from the area of the investment.
- 3.3 For a period of 5 years at least from the completion of works at particular WFS structures - with the involvement of a specialist - phyto-sociologist - conduct the monitoring of the natural habitats. The monitoring should include: spatial range of these habitats, extent of their structure formation, state of their preservation, forms of degeneration, presence of characteristic species and observed changes of these features.
- 3.4 For a period of at least 5 years from the completion of works at particular WFS structures - with the involvement of specialists in the field of botany and zoology - conduct the monitoring of the protected species of plants and animals covering the occurrence of the species and the conservation status of their populations. The monitoring should be conducted at growing seasons.
- 3.5 For a period of at least 5 years from the completion of works at particular WFS structures within the investment - conduct - by trained people - annual monitoring of the occurrence of invasive plants, including thickets of Knot-weed (*Reynourtia spp*). In case of observing the occurrence of any positions of invasive plants (shoots and seedlings) - take appropriate remedial measures to eliminate the identified positions and to prevent its further spread.

3.6 Submit the results of the monitoring with the assessment and analysis carried out by specialists to the Regional Director of the Environmental Protection in Wroclaw till 31 January of every year following the year of observation.

IV. I do not impose an obligation

- 1. to conduct the assessment of the impact of the Works Contract onto the environment within the proceedings on issuing a decision specified in article 72, clause 1 of the act *on sharing information about the environment and its conservation, public participation in environmental protection and environmental impact assessments*;**
- 2. to conduct the proceedings in the scope of the cross-border impact of the Works Contract on the environment**

(...)

In the course of the conducted proceedings on issuing the considered decision, the environmental authority take anything as evidence which contribute to the proper resolution of the case, in essence, and the assessment of the whole evidence material gathered in the course of the proceedings is the grounds for its resolution. Through that the authority has met the provisions of article 75, paragraph 1 and article 80 of the Code of Administrative proceedings.

Given the above, it was declared as stated in the sentence of the decision.

Notice

The present decision can be appealed to the General Director for Environmental Protection, made through the Regional Director of Environmental Protection in Wroclaw, within 14 days from the date of delivery of the present decision.

To be received by:

1. Michal Lenartowski (the proxy of the investor) - EKOCENTRUM LTD. - 62 Podwale Street, room 103, Wroclaw
2. Lower Silesia Board of Amelioration and Water Structures in Wroclaw - 5 Jana Matejki Alley, 50-333 Wroclaw
3. "WWF Poland - World Wide Fund for Nature"
4. "My Paniowce" - Association for the Development of Paniowce

5. Other parties to the proceedings on the basis set out in article 49 of the act - Code of Administrative Proceedings
6. files

APPENDIX 5. LOCALITY MAP

APPENDIX 6 - DESCRIPTION, LOCATION AND SIGNIFICANCE OF NATURAL OBJECTS

Place of occurrence	Description of the environment	Description of occurring species
Flora		
WFS 40, 45.5 Structure no. f-1, at km 2+600 - 3+000 of the channel	A patch with its area of 22.47 ha. It includes a gathering of transitional nature between flood-plain meadows (Conidian) and fresh meadows (Arrhenatherion) and is characterized by a good state of preservation.	<u>Plants:</u> a place of occurrence of endangered species - Meadow-rue <i>Thalictrum lucidum</i> (the species at the Lower Silesia is endangered with near extinction - LC category). The potential habitat of the following protected species: Fen Violet <i>Viola stagnina</i> and the endangered species: Mouse garlic <i>Allium angulosum</i> and Marsh cnidium <i>Cnidium dubium</i> (both species are endangered with extinction - V category).
WFS 44.1, 44.11, 45.1 Structure no. f-2, at km 0+000 - 1+300 of the channel	The structure with its area of 25.69 ha. Therefore there are flood-plain meadows with Cnidion-based communities in a mosaic with Reed canary grass <i>Phalaridetum arundinaceae</i> and Common reed <i>Phragmitetum australis</i> . The most valuable patches of floodplain meadows are maintained in good condition.	<u>Plants:</u> a place of occurrence of the following protected species: Fen Violet <i>Viola stagnina</i> and Gallic Rose <i>Rosa gallica</i> as well as the endangered species: Mouse garlic <i>Allium angulosum</i> , Marsh cnidium <i>Cnidium dubium</i> , Marsh Euphorbia <i>Euphorbia palustris</i> L. (the species are endangered with extinction in Poland - V category), Mouse-ear chickweed <i>Cerastium dubium</i> (the species in rare and potentially endangered with extinction in Poland - R category).
WFS 44.3, 45.2 Structure no. f-3 at km 20+500 - 21+500 of the river	The structure with its area of 6.97 ha covers a line of trees made of oak, ash and elm.	<u>Plants:</u> a place of potential occurrence of the following protected species - Common Snowdrop <i>Galanthus nivalis</i>
WFS 44.3 Structure no. f-4 at km 20+500 - 21+000 of the river	A small-sized object with its area of 1.08 ha covers the over-grown old river-bed. There is a number of rush communities constituting typical stages of succession of such reservoirs. The structure is characterized by a good state of preservation	<u>Plants:</u> a place of potential occurrence of the protected species - Yellow Water-lily <i>Nuphar lutea</i> and White Water-lily <i>Nymphaea alba</i> as well as the potential habitat of the endangered species - Water Pineapple <i>Stratiotes aloides</i> (the species is fairly endangered with extinction at the Lower Silesia - LC category).
WFS 45.6, 44.12 Structure no. f-5 at km 19+500 - 20+200 of the river	The structure covers a well-preserved patch of flood-plain meadows with Conidian-based communities. The area of the patch is equal to 8.28 ha.	<u>Plants:</u> a place of potential occurrence of the protected species: Fen Violet <i>Viola stagnina</i> as well as the potential occurrence of the endanger species: Mouse garlic <i>Allium angulosum</i> , Marsh cnidium <i>Cnidium dubium</i> (the species are endangered with extinction in Poland - V category).
WFS 44.3 Structure no. f-6 at km 19+500 - 20+000 of the river	The structure with its area of 1.08 ha covers riparian forest habitat.	<u>Plants:</u> a place of potential occurrence of the protected species - Common Snowdrop <i>Galanthus nivalis</i> and Broad-leaved Helleborine <i>Epipactis helleborine</i> .
WFS 44.3 Structure no. f-7 at km 19+200 - 19+400 of the river	The structure covers a well-preserved over-grown old river-bed with its area of 0.24 ha.	<u>Plants:</u> a place of potential occurrence of the protected species - Yellow Water-lily <i>Nuphar lutea</i> and White Water-lily <i>Nymphaea alba</i> as well as the potential habitat of the endangered species - Water Pineapple <i>Stratiotes aloides</i> (the species is fairly endangered with extinction at the Lower Silesia - LC category).
WFS 44.13, 42.1 Structure no. f-8 at km 17+250 - 19+400 of the river	A large patch of alluvial meadows made by Cnidion-based communities (the protected habitat). It is characterized with a good state of preservation and high richness of species.	<u>Plants:</u> a place of occurrence of the following protected species: Fen Violet <i>Viola stagnina</i> , the endangered species: Marsh cnidium <i>Cnidium dubium</i> as well as the potential occurrence of the species: Mouse garlic <i>Allium angulosum</i> (both species are endangered with extinction in Poland - V category).

Place of occurrence	Description of the environment	Description of occurring species
	The area of the structure is equal to 35.84 ha.	
Natural habitats		
WFS 44.3, 45.2 Structure no. h-1 at km 19+800 - 21+900 of the river	The structure covers a patch of flood-plain meadows with Cnidion-based communities, at poor state of preservation. The area of the patch is equal to 16.13 ha.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats Directive - Cnidium meadows (Cnidion dubii, habitat code - 6440).
WFS 44.3 Structure no. f-2 at km 20+400 - 22+200 of the river	The area includes a forest complex in the form of ash and alder carr, characterized by a poor state of conservation. The area of the habitat is equal to 4.76 ha.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats Directive - willow, poplar, alder and ash carr (Salicetum albo-fragilis, Popule-tum albae, Alnenion) - there are ash and alder carr here. Habitat code - 91E0.
WFS 44.3 Structure no. f-3 at km 20+500 - 21+000 of the river	A small-sized object with its area of 1.08 ha covers the over-grown old river-bed. There is a number of rush communities constituting typical stages of succession of such reservoirs. The structure is characterized by a good state of preservation	<u>Natural habitats</u> : a well-preserved (though over-growing) old river (Old river beds and natural eutrophic water reservoirs with gatherings of Nympeion, Potamion - habitat code 3150) - the natural habitat from the First (I) Appendix of the Habitats Directive.
WFS 44.3 Structure no. f-4 at km 19+500 - 20+700 of the river	The structure covers a patch of degenerated fresh meadows with patches of sedges, at poor state of preservation. The area of the patch is equal to 15.43 ha.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats - low-land and mountain fresh meadows used extensively (Arrhenatherion elatioris). Habitat Code - 6510.
WFS 44.3 Structure no. h-5 at km 19+500 - 20+000 of the river	The structure with its area of 1.08 ha covers riparian forest habitat.	<u>Natural habitats</u> : a well-preserved patch of oak-elm-ash carr (Ficario-Ulmetum - habitat code 91F0) - the natural habitat from the First (I) Appendix of the Habitats.
WFS 44.3 Structure no. h-6 at km 19+200 - 19+400 of the river	The structure covers a well-preserved over-grown old river-bed with its area of 0.24 ha.	<u>Natural habitats</u> : a well-preserved patch of oak - elm - ash carr (Ficario-Ulmetum - habitat code 91F0) - the natural habitat from the First (I) Appendix of the Habitats.
WFS 44.3 Structure no. f-7 at km 18+700 - 19+600 of the river	The structure covers a degenerated patch of flood-plain meadows with Cnidion-based communities, at poor state of preservation. The area of the patch is equal to 5.51 ha.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats Directive - Cnidium meadows (Cnidion dubii, habitat code - 6440).
WFS 44.3 Structure no. h-8 at km 17+300 - 19+200 of the river	The structure covers a degenerated patch between fresh meadows and flood-plain meadows with Cnidion-based communities at poor state of preservation. The area of the patch is equal to 38.53 ha.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats - low-land and mountain fresh meadows used extensively (Arrhenatherion elatioris). Habitat code - 6510 aggregated with Cnidium meadows (Cnidion dubii). Habitat code - 6440.
WFS 44.3 Structure no. h-9 at km 17+300 - 17+500 of the river	The area includes a minor forest complex within the mid-embankment of the Widawar river - degenerated willow - poplar - alder - ash carr characterized by a poor state of conservation. The area of the habitat is equal to 2.46 ha.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats Directive - willow, poplar, alder and ash carr (Salicetum albo-fragilis, Popule-tum albae, Alnenion)- there are willow - poplar carr. Habitat code - 91E0.
WFS 44.11, 45.1	A complex of willow carr trees by the Odra	<u>Natural habitats</u> : Willow carr (Salicetum albae, Popule-tum albae, Alnenion glutinoso-incanae) (habitat code 91E0) -

Place of occurrence	Description of the environment	Description of occurring species
Structure no. h-53 at km 0+000 - 0+050 of the channel	channel (91E0). The area of the structure – 0.39 ha characterized by a poor state of conservation.	the natural habitat from 1st (I) Appendix of the Habitats.
WFS 40, 45.5 Structure no. h-54 at km 2+600 - 3+000 of the channel	A patch with its area of 22.47 ha. It includes a gathering of transitional nature between flood-plain meadows (Cnidion) and fresh meadows (Arrhenatherion) and is characterized by a good state of preservation.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats Directive - a complex of Cnidium meadows (Cnidion dubii) and fresh meadows (Arrhenatherion elatioris) - the habitat code 6440/6510.
WFS 45.5 Structure no. h-55 at km 2+500 - 2+600 of the channel	The area includes a minor riparian forest complex characterized by a good state of preservation. The area of the habitat is equal to 1.27ha.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats Directive - willow, poplar, alder and ash carr (Salicetum albo-fragilis, Popule-tum albae, Alnenion). Habitat code - 91E0.
WFS 44.11 Structure no. h-56 at km 1+900 of the channel	The area covers old river-beds characterized by a poor state of preservation located at the behind-embankment. The area of the habitat is equal to 1.54ha.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats - Old river-beds and natural eutrophic water reservoirs with gatherings of Nympeion, Potamion. Habitat Code - 3150.
WFS 44.1, 44.11, 45.1 Structure no. h-57 at km 0+000 - 1+300 of the channel	The structure with its area of 25.69 ha. Therefore there are flood-plain meadows with Cnidion-based communities in a mosaic with Reed canary grass Phalaridetum arundinaceae and Common reed Phragmitetum australis. The most valuable patches of floodplain meadows are maintained in good condition.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats Directive - a complex of Cnidium meadows (Cnidion dubii) - habitat code 6440.
WFS 45.1 Structure no. h-58 at km 21+600 - 21+600 of the river	The area covers a minor forest complex - willow carr characterized by a good state of conservation. The area of the habitat is equal to 0.9 ha.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats Directive - willow, poplar, alder and ash carr (Salicetum albo-fragilis, Popule-tum albae, Alnenion) - there are willow carr here. Habitat code - 91E0.
WFS 44.3 Structure no. h-60 at km 20+600 - 20+900 of the river	The structure covers a patch of flood-plain meadows with Cnidion-based communities, at poor state of preservation. The area of the patch is equal to 2.42 ha.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats Directive - Cnidium meadows (Cnidion dubii, habitat code - 6440).
WFS 45.6 Structure no. h-61 at km 20+200 - 20+400 of the river	The area covers a minor forest complex by the banks of the Widawa River - willow carr characterized by a poor state of conservation. The area of the habitat is equal to 0.69ha.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats Directive - willow, poplar, alder and ash carr (Salicetum albo-fragilis, Popule-tum albae, Alnenion) - there are willow carr here. Habitat code - 91E0.
WFS 45.6, 44.12 Structure no. h-62 at km 19+500 - 20+200 of the river	The structure covers a well-preserved patch of flood-plain meadows with Cnidion-based communities. The area of the patch is equal to 8.28 ha.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats Directive - Cnidium meadows (Cnidion dubii, habitat code - 6440).
WFS 44.13, 42.1 Structure no. h-63 at km 17+250 - 19+400 of the river	A large patch of alluvial meadows made by Cnidion-based communities (the protected habitat). It is characterized with a good state of preservation and high richness of species.	<u>Natural habitats</u> : a natural habitat from the First (I) Appendix of the Habitats Directive - Cnidium meadows (Cnidion dubii, habitat code - 6440).

Place of occurrence	Description of the environment	Description of occurring species
	The area of the structure is equal to 35.84 ha.	
Insects		
WFS 40 Structure no. o-1 at km 2+700 of the channel	An oak growing at the embankment crest, at the behind-embankment.	The potential breeding habitat (including: feeding and breeding base) of Hermit beetle <i>Osmoderma eremita</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive). The structure with trees in its vicinity constitutes an ecological corridor for the species. A habitat of Great Capricorn Beetle <i>Cerambyx cerdo</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 40 Structure no. o-2 at km 1+400 of the channel	Two small clusters of blackthorn by the asphalt (paved) road and close to the railway lines.	The habitat of the following protected species: Caterpillar Moth <i>Eriogaster catax</i> (species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 44.1 Structure no. o-3 at km 1+200 of the channel	A narrow cluster of blackthorn with its length of 18 m and width of 2 m at the behind-embankment, close to the fencing of allotment gardens.	
WFS 45.1 Structure no. o-4 at km 1+100 of the channel	A narrow cluster of blackthorn with its length of 50 m and width of 3-4 m at the behind-embankment, close to the fencing of allotment gardens (0-4).	
WFS 45.1 Structure no. o-5 at km 0+400 of the channel	A cluster of blackthorn with its length of 8 m and width of 8 m at the fore-embankment.	
WFS 45.1 Structure no. o-6 at km 0+300 of the channel	A cluster of blackthorn with its length of 10 m and width of 8 m at the fore-embankment.	
WFS 45.1 Structure no. o-7 at km 0+300 of the channel	A cluster of blackthorn with its length of 50 m and width of 18 m at the fore-embankment.	
WFS 45.1 Structure no. o-8 at km 21+500 of the river	An oak at the fore-embankment with a narrow gap from the base up to the level of 2 m and a small hollow at the level of 8 m.	The potential breeding habitat (including: feeding and breeding base) of Hermit beetle <i>Osmoderma eremita</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive). A potential breeding habitat of Great Capricorn Beetle <i>Cerambyx cerdo</i> (the species from the Second (II) Appendix of the Habitats Directive).
WFS 45.1 Structure no. o-9 at km 21+700 of the river	The end of the embankment, a small culvert, at the behind-embankment - a small grove with a group of oaks.	
WFS 44.12, 46.1 Structure no. o-10 at km 0+500 of the channel	A cluster of blackthorn being perpendicular to the channel with its length of 15 m, the beginning - 10 m from the embankment towards the fields.	The habitat of the following protected species: Caterpillar Moth <i>Eriogaster catax</i> (species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 44.12 Structure no. o-11 at km 20+100 - 20+250 of the river	A meadow with a minor number of Great Burnet.	The habitat of Dusky Large Blue <i>Maculinea nausitous</i> and Scarce Large Blue <i>Maculinea teleius</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 44.12, 45.6 Structure no. o-12 at km 21+100 - 21+300 of the	An outlet of the transit channel to the Widawa River - the western bank of the channel overgrown with Great Water Dock.	The habitat of Large Copper <i>Lycaena dispar</i> , Scarce Fritill <i>Euphydryas maturna</i> and Green snake-tail <i>Ophiogomphus cecilia</i> (the species from the Second (II) and Fourth (IV) Appendix of the Environmental Directive).

Place of occurrence	Description of the environment	Description of occurring species
river		
WFS 44.13 Structure no. o-13 at km 18+400 - 19+000 of the river	A meadow of Great Burnet at the spreading shrub of a willow.	The habitat of Dusky Large Blue <i>Maculinea nausitous</i> and Scarce Large Blue <i>Maculinea teleius</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 44.13 Structure no. o-14 at km 17+400 of the river	A monumental poplar, the new embankment comes to the old embankment by the Widawa River.	The potential breeding habitat (including: feeding and breeding base) of Hermit beetle <i>Osmoderma eremita</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 45.6 Structure no. o-15 at km 19+550 - 19+700 of the river	A patch of Great Burnet by the old embankment over the Widawa River.	The habitat of Dusky Large Blue <i>Maculinea nausitous</i> and Scarce Large Blue <i>Maculinea teleius</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 45.6 Structure no. o-16 at km 19+900 - 20+000 of the river	Three grand, monumental, spreading willows at the fore-embankment.	The potential breeding habitat (including: feeding and breeding base) of Hermit beetle <i>Osmoderma eremita</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 44.2 Structure no. o-17 at km 23+000 of the river	A stand-alone oak with a forming hollow at the level of 2,5 m.	
WFS 45.2 Structure no. o-18 at km 21+700 of the river	A cluster of blackthorn by a field path (road).	The habitat of the following protected species: Caterpillar Moth <i>Eriogaster catax</i> (species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 45.2 Structure no. o-19 at km 21+750 of the river	The last oak within a line of trees at the embankments.	The potential breeding habitat (including: feeding and breeding base) of Hermit beetle <i>Osmoderma eremita</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive). A habitat of Great Capricorn Beetle <i>Cerambyx cerdo</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 45.2 Structure no. o-20 at km 21+700 of the river	An oak at the behind-embankment, by the embankment crest.	
WFS 45.2 Structure no. o-21 at km 21+600 of the river	A dry oak.	
WFS 45.2 Structure no. o-22 at km 21+600 of the river	An oak with its stem being deprived of bark partially.	
WFS 45.5 Structure no. o-23 at km 3+000 of the channel	An alley of oaks at the embankment crest, oaks at the behind-embankment.	
WFS 45.5 Structure no. o-24 at km 3+000 of the channel	A linear cluster of blackthorn (with its length of 175 m) at the behind-embankment.	The habitat of the following protected species: Caterpillar Moth <i>Eriogaster catax</i> (species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 45.5 Structure no. o-25 at km 3+000 of the channel	A linear cluster of blackthorn (with its length of 32 m) at the mid-embankment.	
WFS 45.5	A large cluster of blackthorn.	

Place of occurrence	Description of the environment	Description of occurring species
Structure no. o-26 at km 3+000 of the channel		
WFS 45.2 Structure no. o-27 at km 19+300 - 21+700 of the river	A long linear tree-coverage mainly composed of oaks over-growing the embankment crest.	Among all the trees (often - very impressive ones) there are a lot of potential habitats of Hermit Beetle <i>Osmoderma eremita</i> (the species from the Second (II) and Fourth (IV) Appendix of the Environmental Directive) as well one existing breeding habitat. Potential and existing breeding habitats of Great Capricorn Beetle <i>Cerambyx cerdo</i> (the species from the Second (II) Appendix of the Environmental Directive).
WFS 44.3 Structure no. o-28 at km 19+500 - 19+600 of the river	A grouping of tree vegetation consisting mainly of oaks.	The potential breeding habitat (including: feeding and breeding base) of Hermit beetle <i>Osmoderma eremita</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive). Potential and existing breeding habitats of Great Capricorn Beetle <i>Cerambyx cerdo</i> (the species from the Second (II) Appendix of the Environmental Directive).
WFS 44.3 Structure no. o-29 at km 18+000 of the river	A poplar with a birds hollow at the base.	The potential breeding habitat (including: feeding and breeding base) of Hermit beetle <i>Osmoderma eremita</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 44.3, 45.2 Structure no. o-30 at km 21+500 of the river	Large clusters of Great Water Dock by the Widawa River.	A habitat of Large Copper <i>Lycaena dispar</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 44.3 Structure no. o-31 at km 20+900 of the river	A wet meadow by the Widawa River with single units of Great Burnet.	The habitat of Dusky Large Blue <i>Maculinea nausitous</i> and Scarce Large Blue <i>Maculinea teleius</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 44.3 Structure no. f-32 at km 18+700 - 19+250 of the river	A wet meadow between the Widawa River and the embankment, single units of Great Burnet.	The habitat of Dusky Large Blue <i>Maculinea nausitous</i> and Scarce Large Blue <i>Maculinea teleius</i> (the species from the Second (II) and Fourth (IV) Appendix of the Habitats Directive).
WFS 44.3 Structure no. f-33 at km 18+800 - 19+200 of the river	Not-mown, wet meadow, numerous Great Burnet, at the northern side - a line of reeds, at the west - the Widawa embankment, at the east - a field path (road) and fields, a thin line of oaks several years old in the middle.	
Mammals - without bats		
WFS 44.11, 45.5 Structure no. s-1 at km 1+700 - 2+000 of the channel	2 water reservoirs with the surrounding trees and shrubs.	A place of occurrence of mammals from the Second (II) Appendix of the Habitats Directive: the presence of Eurasian Beaver <i>Castor fiber</i> - indicated. The potential reservoirs are a permanent or seasonal feeding area of European Otter <i>Lutra lutra</i> . This is also a potential position of European Water Vole <i>Arvicola amphibius</i> and Water Shrew <i>Neomys fodiens</i> .
WFS 40, 45.5, 45.1, 44.1, 44.11, 41.3, 41.1, 41.2, 44.12 Structure no. s-2 at km 1+000 - 1+600 of the channel and 20+900 - 21+700 of the river	Meadows and waste lands within the mid-embankment.	The place of occurrence of mammals from the Second (II) Appendix of the Habitats Directive: the presence of the following species was indicated: European Otter <i>Lutra lutra</i> and the species covered by full species protection: Common Shrew <i>Sorex araneus</i> , Eurasian Pygmy Shrew <i>Sorex minutus</i> , Hedgehog <i>Erinaceus</i> as well as the species covered by partial species protection: European Water Vole <i>Arvicola amphibius</i> , European Mole <i>Talpa europaea</i> . The channel probably constitutes also a migration corridor for Eurasian Beaver <i>Castor fiber</i> and the habitat of Water Shrew <i>Neomys fodiens</i> .
WFS 45.2, 44.2, 42.1, 42.1. Structure no. s-3 at km 0+000 - 23+000 of the river	The Widawa River together with its bank-side area.	The place of occurrence of the species from the Second (II) Appendix of the Habitats Directive: European Otter <i>Lutra lutra</i> and Eurasian Beaver <i>Castor fiber</i> as well as the species covered by full species protection: Common Shrew <i>Sorex araneus</i> , Eurasian Pygmy Shrew <i>Sorex minutus</i> , Eurasian Water Shrew <i>Neomys fodiens</i> , Hedgehog <i>Erinaceus europaeus</i> , Ermine <i>Mustela erminea</i> , Least weasel <i>Mustela nivalis</i> as well as the species covered by

Place of occurrence	Description of the environment	Description of occurring species
		partial protection: European Water Vole <i>Arvicola amphibius</i> , European Mole <i>Talpa europaea</i> .
WFS 44.3 Structure no. s-4 at km 20+600 - 20+900 of the river	An old river-bed together its bank-side trees.	The place of occurrence of the species from the Second (II) Appendix of the Habitats Directive: European Otter <i>Lutra lutra</i> and Eurasian Beaver <i>Castor fiber</i> , the species covered with full species protection: Common Shrew <i>Sorex araneus</i> , Eurasian Pygmy Shrew <i>Sorex minutus</i> as well as the species covered with partial species protection: European Water Vole <i>Arvicola amphibius</i> , probably the position of Water Shrew <i>Neomys fodiens</i> , Ermine <i>Mustela erminea</i> and Least weasel <i>Mustela nivalis</i> . The place of occurrence of mammals covered by the full species protection: Common Shrew <i>Sorex araneus</i> , Eurasian Pygmy Shrew <i>Sorex minutus</i> , Hedgehog <i>Erinaceus</i> as well as covered by partial species protection: European Water Vole <i>Arvicola amphibius</i> , European Mole <i>Talpa europaea</i> . Probably the place of occurrence of Least weasel <i>Mustela nivalis</i> and Ermine <i>Mustela erminea</i> .
WFS 44.3 Structure no. s-5 at km 17+200 - 20+900 of the river	Open flood-plains in the valley of the Widawa River with minor drying and old river-beds and trees.	
WFS 44.13, 45.6 Structure no. s-6 at km 17+200 - 20+500 of the river	Open flood-plains in the valley of the Widawa River with minor drying and old river-beds and trees.	
Bats		
WFS 45.5 Structure no. n-1 at km 2+700 - 3+000 of the channel WFS 40 Structure no. n-4 at km 2+200 - 2+500 of the channel	Forest complex	<ul style="list-style-type: none">▪ The potential breeding place of Bechstein's Bat and Barbastelle (the species from the Second (II) Appendix of the Habitats Directive) as well as Natterer's Bat, Whiskered Bat / Brandt's Bat, Daubenton's Bat, Common Pipistrelle, Soprano Pipistrelle, Nathusius's Pipistrelle, Common Noctule, Lesser Noctule, Brown long-eared bat (the species from the Fourth (IV) Appendix of the Habitats Directive);▪ potential mating positions of Common Pipistrelle, Soprano Pipistrelle, Nathusius's Pipistrelle, Common Noctule (the species from the Fourth (IV) Appendix of the Habitats Directive);▪ potential shelter of Greater mouse-eared bat, Bechstein's Bat and Barbastelle (the species from the Second (II) Appendix of the Habitats Directive) as well as Natterer's bat, Whiskered bat / Brandt's Bat, Daubenton's Bat, Nathusius's Pipistrelle, Brown long-eared bat (the species from the Fourth (IV) Appendix of the Habitats Directive);▪ potential overwintering area for Common Noctule (species from the 4th (IV) Appendix of the Environmental Directive);▪ potential feeding place of Greater mouse-eared bat, Bechstein's Bat and Barbastelle (the species from the Second (II) Appendix of the Habitats Directive) as well as Natterer's bat, Whiskered bat / Brandt's Bat, Daubenton's Bat, Brown long-eared bat (the species from the Fourth (IV) Appendix of the Habitats Directive).
WFS 44.1 Structure no. n-5 at km 0+500 - 1+500 of the channel	An alley of trees.	
WFS 45.1 Structure no. n-8 at km 21+300 - 21+800 of the river Structure no. n-14 at km	Tree coverage.	
WFS 44.3 19+300 - 21+700 of the river	Tree coverage.	
WFS 40, 45.5 Structure no. n-2 at km 2+600 - 3+000 of the channel	Meadows, fields.	The potential breeding place of Greater mouse-eared bat (the species from the Second (II) Appendix of the Habitats Directive) and Natterer's bat, Serotine bat, Common Pipistrelle, Soprano Pipistrelle, Nathusius's Pipistrelle, Common Noctule, Brown long-eared bat (the species from the Fourth (IV) Appendix of the Habitats Directive)
WFS 40 Structure no. n-3 at km	Standing water reservoir.	The potential feeding place of Pond Bat, Bechstein's Bat and Barbastelle (the species from the Second (II) Appendix of the Habitats Directive) as well as Whiskered bat / Brandt's Bat, Daubenton's Bat, Serotine bat, Common

Place of occurrence	Description of the environment	Description of occurring species
2+500 of the channel		Pipistrelle, Soprano Pipistrelle, Nathusius's Pipistrelle, Common Noctule, Lesser Noctule, Brown long-eared bat (the species from the Fourth (IV) Appendix of the Habitats Directive).
WFS 41.3 Structure no. n-6 at km 0+000 - 1+600 of the channel	Meadows.	The potential breeding place of Greater mouse-eared bat (the species from the Second (II) Appendix of the Habitats Directive) and Natterer's bat, Serotine bat, Common Pipistrelle, Soprano Pipistrelle, Nathusius's Pipistrelle, Common Noctule (the species from the Fourth (IV) Appendix of the Habitats Directive).
WFS 41.3 Structure no. n-7 at km 1+200 of the channel	Post-German concrete bunker	The potential over-wintering area for Greater mouse-eared bat, Barbastelle (the species from the Second (II) Appendix of the Habitats Directive), Brown long-eared bat, Daubenton's Bat, Natterer's bat (the species from the Fourth (IV) Appendix of the Habitats Directive).
WFS 44.2 Structure no. n-9 at km 22+600 - 24+000 of the river	Meadows, single trees.	The potential breeding place of Greater mouse-eared bat (the species from the Second (II) Appendix of the Habitats Directive) and Natterer's bat, Serotine bat, Common Pipistrelle, Soprano Pipistrelle, Nathusius's Pipistrelle, Common Noctule (the species from the Fourth (IV) Appendix of the Habitats Directive).
WFS 44.2 Structure no. n-11 at km 22+300 - 22+400 of the river	Standing water reservoir.	The potential feeding place of Pond Bat, Bechstein's Bat and Barbastelle (the species from the Second (II) Appendix of the Habitats Directive) as well as Whiskered bat / Brandt's Bat, Daubenton's Bat, Serotine bat, Common Pipistrelle, Soprano Pipistrelle, Nathusius's Pipistrelle, Common Noctule, Brown long-eared bat (the species from the Fourth (IV) Appendix of the Habitats Directive).
WFS 44.3 Structure no. n-15 at km 20+600 - 20+900 of the river	Standing water reservoir.	
WFS 44.3 Structure no. n-17 at km 19+400 of the river	Standing water reservoir.	
WFS 44.3 Structure no. n-12 at km 20+600 - 20+900 of the river	Meadows.	The potential breeding place of Greater mouse-eared bat (the species from the Second (II) Appendix of the Habitats Directive) and Natterer's bat, Serotine bat, Common Pipistrelle, Soprano Pipistrelle, Nathusius's Pipistrelle, Common Noctule (the species from the Fourth (IV) Appendix of the Habitats Directive).
WFS 44.3 Structure no. n-13 at km 20+800 - 21+500 of the river	Meadows, single trees.	
WFS 44.3 Structure no. n-16 at km 19+300 - 20+700 of the river	Meadows, fields.	
WFS 44.3 Structure no. n-18 at km 17+200 - 19+600 of the river	Meadows, fields, single trees.	
Fish		
Natural object: r-1 (Piskorna river)	The Piskorna River running through the transit channel is the natural object. This is a water course carrying very little water at	(The WFS structure no. 40). The position of occurrence of European weather loach (the species from the Second (II) Appendix of the Habitats Directive, covered by the species protection in Poland) which at dry periods reaches considerable population in the river. (The WFS structure no. 41.1, 41.2). Above the bridges the Piskorna River is the

Place of occurrence	Description of the environment	Description of occurring species
	precipitation-free periods. The Piskorna River runs through small, drying old river-bed being the habitat of European weather loach. At dry periods European weather loach moves to the river. Below the bridges the waters of the Piskorna River are stacked by backwaters from the Widawa River.	position of occurrence of European weather loach (the Species from the Second (II) Appendix of the Habitats Directive, covered by the species protection in Poland) which at dry periods reaches considerable population, below the bridges European weather loach and Bitterling Rhodeus occur (the Species from the Second (II) Appendix of the Habitats Directive, covered by the species protection in Poland). The section of the Piskorna River (channel) between the bridges and the Widawa Rivers is a spawning-ground of Pike and Ide.
Natural object: r-2 (Widawa)	The Widawa River is a natural object. This is a clay and sand based river, settled (regulated), with its levelled width (around 15 m) and minor depth (around 0,6 m on average). The river banks are strengthened with loose sand coverage overgrown with rush communities. In the river there are numerous submerged macrophytes constituting up to 50% of the bottom coverage - mainly made of Pondweed Potamogeton and aqueous forms of Flowering rush Butomus umbellatus and Bur-reed Sparganium. In corridors between clusters of plants the bottom is gravel-based, in other places - sandy or muddy. At the bottom there are numerous mussels from Unionidae family which determine the presence of European Bitterling Rhodeus sericeus amarus (it lays eggs in the body of mussels).	(The WFS structures no. 42.1, 42.1.1, 42.2, 42.3, 42.3.1, 43, 44.2). Within the Widawa River there are favourable spawning grounds for fish of all their breeding groups. The area of the specified objects is the habitat of Spined loach, European weather loach, European bitterling and Stone loach. Above the connection with the transit channel (the Piskorna River) in the Widawa River (the area of the WFS structure no. 42) there is a position of Ray-finned fish Sabanejewia aurata which, in spite of numerous studies, has never been found below the mouth of the Piskorna River. The position of Ray-finned fish Sabanejewia aurata is the only one in the catchment of the Widawa River and one of several within the whole basin of the Odra River. The position of the species covers a very short, several-metre section of the Widawa River. The planned Works Contract borders with the lower area of occurrence of the species in the Widawa River. Spined loach Cobitis taenia, Ray-finned fish Sabanejewia aurata, European weather loach and European Bitterling Rhodeus sericeus amarus are the species from the Second (II) Appendix of the Habitats Directive, covered by the species protection in Poland. Stone Loach Barbatula barbatula is a species covered by the species protection in Poland.
Amphibians and reptiles		
WFS 40 Structure no. p-1, g-2 at km 2+800 of the channel	A small pond located among meadows, thickets and poplar trees between the Lanieska Dyke and the Janowicko-Swojczycka Dyke. Both Water Pineapple Stratiotes aloides and Floating Fern Salvinia natans occur in the pond.	The breeding place of several species of amphibians, including the species from the 2nd (II) Appendix of the Habitats Directive - European Fire-bellied Toad Bombina bombina. Moreover, at this position the following species breed: Moor Frog Rana arvalis (the 4th (IV) Appendix of the Habitats Directive), European Tree Frog Hyla arborea (the 4th (IV) Appendix of the Habitats Directive) as well as Edible Frog Pelophylax esculentus and Smooth Newt Lissotriton vulgaris. The place of occurrence of Sand Lizard Lacerta agilis (the 4th (IV) Appendix of the Habitats Directive), Viviparous Lizard Lacerta vivipar, Slow Worm Anguis fragilis and Grass Snake Natrix natrix.
Structure no. p-2, g-1 at km 2+500 - 2+700 of the channel	The backwaters of the Piskorna River and its surrounding wet meadows, sedge and reed areas.	
WFS 40 Structure no. p-3 at km 2+500 - 2+700 of the channel	A large pond located among meadows, thickets and poplar trees between the Lanieska Dyke and the Janowicko-Swojczycka Dyke. The pond is over-grown with reeds and water sticks.	
WFS 45.5, 46.1, 44.1 Structure no. g-3 at km 1+800 of the channel	The backwaters of the melioration ditch, over-grown with reeds and willow trees.	The backwaters and the area around the backwaters is a place of occurrence of Viviparous lizard Lacerta vivipara and the potential place of occurrence of Grass Snake Natrix natrix.

Place of occurrence	Description of the environment	Description of occurring species
WFS 41.3 Structure no. p-4 at km 1+500 - 3+000 of the channel	The transit channel of flood waters from the Odra River to the Widawa River, the channel is largely over-grown with water and rush vegetation.	The breeding and living place of amphibians, including Edible Frog <i>Pelophylax esculentus</i> . In addition, this is the potential breeding place of European Tree Frog <i>Hyla arborea</i> (the 4th (IV) Appendix of the Habitats Directive), Smooth Newt <i>Lissotriton vulgaris</i> and Common Frog <i>Rana temporaria</i> .
WFS 45.5, 46.1, 44.11 Structure no. p-5 at km 1+900 of the channel	Ponds used, heavily fished.	The place of occurrence of amphibians. The presence of Edible Frog <i>Pelophylax esculentus</i> and Common Toad <i>Bufo bufo</i> was identified.
WFS 45.5, 46.1, 44.11 Structure no. p-6 at km 1+700 of the channel	The backwaters of the melioration ditch, over-grown with reeds and willow trees.	The breeding place of Moor Frog <i>Rana arvalis</i> (the 4th (IV) Appendix of the Habitats Directive) - at least 100 calling males - and Common Toad <i>Bufo bufo</i> . Potential place of occurrence of European Fire-bellied Toad <i>Bombina bombina</i> (the 2nd (II) Appendix of the Habitats Directive), European Tree Frog <i>Hyla arborea</i> (the 4th (IV) Appendix of the Habitats Directive) and Edible Frog <i>Pelophylax esculentus</i> .
Structure no. p-7 at km 20+800 of the river	The backwaters of the Widawa River, heavily overgrown with rush vegetation. The left-bank forks of the transit channel of flood waters from the Odra River to the Widawa River at the north-east off Swojczyce.	Breeding place of amphibians. The presence of Moor Frog <i>Rana arvalis</i> (the 4th (IV) Appendix of the Habitats Directive) and Common Frog <i>Rana temporaria</i> . In addition, this is the potential breeding place of European Tree Frog <i>Hyla arborea</i> (the 4th (IV) Appendix of the Habitats Directive), Smooth Newt <i>Lissotriton vulgaris</i> and Edible Frog <i>Pelophylax esculentus</i> .
WFS 45.2, 44.3 Structure no. p-8 at km 20+600 - 20+900 of the river	The old river-bed of the Widawa River, partly over-grown with rushes passing into sedges.	The breeding place of Edible Frog <i>Pelophylax esculentus</i> . The potential breeding place of several species of amphibians, including the species from the 2nd (II) Appendix of the Habitats Directive - European Fire-bellied Toad <i>Bombina bombina</i> and Great Crested Newt <i>Triturus cristatus</i> . Moreover, at this position the following species breed: Common Spadefoot <i>Pelobates fuscus</i> (the 4th (IV) Appendix of the Habitats Directive), European Tree Frog <i>Hyla arborea</i> (the 4th (IV) Appendix of the Habitats Directive), Moor Frog <i>Rana arvalis</i> (the 4th (IV) Appendix of the Habitats Directive) as well as Common Toad <i>Bufo bufo</i> and Smooth Newt <i>Lissotriton vulgaris</i> . The breeding place of Edible Frog <i>Pelophylax esculentus</i> . The potential breeding place of several species of amphibians, including Common Spade-foot <i>Pelobates fuscus</i> (the 4th (IV) Appendix of the Habitats Directive), European Tree Frog <i>Hyla arborea</i> (the 4th (IV) Appendix of the Habitats Directive) as well as Common Toad <i>Bufo bufo</i> and Smooth Newt <i>Lissotriton vulgaris</i> .
WFS 45.2 Structure no. p-9 at km 20+400 of the river	A small household pond overgrown with water duckweed.	
WFS 44.3 Structure no. p-10 at km 18+800 - 9+100 of the river	A small pond over-grown with willows, surrounded with over-growing meadows.	
WFS 41.3 Structure no. p-39 at km 2+500 of the channel	A small pond, partially over-grown, fished.	The potential breeding place of amphibians, including: Edible Frog <i>Pelophylax esculentus</i> and Common Toad <i>Bufo bufo</i> .
WFS 41.3 Structure no. p-40 at km 1+600 of the channel	A water pond over-grown with water sticks and reeds.	The potential place of occurrence of amphibians. The following species can occur: European Fire-bellied Toad <i>Bombina bombina</i> (the 2nd (II) Appendix of the Habitats Directive), European Tree Frog <i>Hyla arborea</i> (the 4th (IV) Appendix of the Habitats Directive), Common Toad <i>Bufo bufo</i> and Edible Frog <i>Pelophylax esculentus</i> .
WFS 44.2 Structure no. p-41 at km 23+000 - 24+000 of the river	A complex of meadows, sedges, reed marshes and backwaters of the Widawa River.	The potential breeding and living place of several species of amphibians, including the species from the 2nd (II) Appendix of the Habitats Directive - Great Crested Newt <i>Triturus cristatus</i> and European Fire-bellied Toad <i>Bombina bombina</i> , from the 4th (IV) Appendix of the Habitats Directive - European Tree Frog <i>Hyla arborea</i> , Moor Frog <i>Rana arvalis</i> as well as the species protected under national law - Smooth Newt <i>Lissotriton vulgaris</i> , Common Toad <i>Bufo</i>

Place of occurrence	Description of the environment	Description of occurring species
Structure no. p-44 at km 21+500 of the river	An old river-bed of the Widawa River, in the mid-embankment of the Widawa River, at the left bank of the river, east (around 100 metres) off the mouth of the Channel at the inlet of the Widawa River. The old river-bed overgrown with reeds and willows.	bufo, Common Frog <i>Rana temporaria</i> and Edible Frog <i>Pelophylax esculentus</i> .
WFS 41.3 Structure no. p-45 at km 1+300 - 1+400 of the channel	Backwaters of the transit channel of flood waters from the Odra River to the Widawa River.	The potential breeding place of amphibians, including: Smooth Newt <i>Lissotriton vulgaris</i> , Common Frog <i>Rana temporaria</i> and Edible Frog <i>Pelophylax esculentus</i> .
WFS 41.3 Structure no. p-46 at km 1+400 - 1+500 of the channel	Backwaters of the transit channel of flood waters from the Odra River to the Widawa River.	
WFS 44.11 Structure no. p-47 at km 0+500 of the channel	Backwaters at the ruderal area, formed by the conducted building / construction works and land levelling.	The potential breeding place of European green toad <i>Pseudepidelea viridis</i> (the 4th (IV) Appendix of the Habitats Directive).
WFS 45.2, 44.3 Structure no. p-48 at km 20+000 of the river	A small household pond overgrown with water duckweed.	The potential breeding place of several species of amphibians, including Common Spade-foot <i>Pelobates fuscus</i> (the 4th (IV) Appendix of the Habitats Directive), European Tree Frog <i>Hyla arborea</i> (the 4th (IV) Appendix of the Habitats Directive) as well as Smooth Newt <i>Lissotriton vulgaris</i> , Common Toad <i>Bufo bufo</i> and Edible Frog <i>Pelophylax esculentus</i> .
WFS 44.11, 45.6, 44.13 Structure no. p-49 at km 19+500 - 20+000 of the river	backwaters of the melioration ditch overgrown with reeds and drying at summer periods.	
WFS 44.3 Structure no. p-50 at km 19+500 of the river	Sedges / backwaters drying at summer periods.	
WFS 45.2, 44.3 Structure no. p-51 at km 19+500 of the river	Sedges / backwaters drying at summer periods.	
WFS 45.2, 44.3 Structure no. p-52 at km 19+400 of the river		
WFS 45.2, 44.3 Structure no. p-53 at km 19+100 - 19+500 of the river		

Place of occurrence	Description of the environment	Description of occurring species
WFS 45.2, 44.3, 44.11 Structure no. p-55 at km 19+100 - 19+300 of the river	Backwaters of the melioration ditch, partially over-grown with reeds, at numerous places water retains with rich water and rush vegetation growing within.	
WFS 45.6, 44.3, 44.11 Structure no. p-56 at km 19+000 - 19+100 of the river	Backwaters / sedges drying at summer periods.	
WFS 45.6, 44.3, 44.11 Structure no. p-57 at km 17+500 - 19+000 of the river	A melioration ditch, partially over-grown with reeds, at numerous places water retains with rich water and rush vegetation growing within.	
WFS 44.14 Structure no. p-58 at km 17+000 of the river	A small water pond and its backwaters, partially over-grown with willows, partially with reeds.	
Structure no. p-73 at km 2+200 - 2+500 of the channel	A deciduous forest with a large share of elm-oak riparian forests and riverine forests.	The potential feeding and over-wintering place of amphibians, including the species from the 2nd (II) Appendix of the Habitats Directive - European Fire-bellied Toad <i>Bombina bombina</i> and Great Crested Newt <i>Triturus cristatus</i> as well as Moor Frog <i>Rana arvalis</i> (the 4th (IV) Appendix of the Habitats Directive), Common Frog <i>Rana temporaria</i> , Common Toad <i>Bufo bufo</i> , and Smooth Newt <i>Lissotriton vulgaris</i> .
Structure no. p-74 at km 2+700 - 3+000 of the channel	Wet meadows with a deciduous forest being adjacent to them.	The potential feeding and over-wintering place of amphibians, including the species from the 2nd (II) Appendix of the Habitats Directive - European Fire-bellied Toad <i>Bombina bombina</i> and from the 4th (IV) Appendix of the Habitats Directive - European Tree Frog <i>Hyla arborea</i> and Moor Frog <i>Rana arvalis</i> as well as the species protected under the national law - Common Toad <i>Bufo bufo</i> .
Structure no. p-75 at km 21+200 - 21+700 of the river	A complex of meadows east off the mouth of the transit channel of flood waters from the Odra River to the Widawa River, at the left bank of the Widawa River.	The potential feeding and over-wintering place of amphibians, including the species from the 2nd (II) Appendix of the Habitats Directive - European Fire-bellied Toad <i>Bombina bombina</i> and Great Crested Newt <i>Triturus cristatus</i> as well as European Tree Frog <i>Hyla arborea</i> (the 4th (IV) Appendix of the Habitats Directive), Moor Frog <i>Rana arvalis</i> (the 4th (IV) Appendix of the Habitats Directive), Common Frog <i>Rana temporaria</i> , Common Toad <i>Bufo bufo</i> , and Smooth Newt <i>Lissotriton vulgaris</i> .
Structure no. p-76 at km 20+900 - 21+900 of the river	A complex of meadows and waste lands being adjacent to the Widawa River, in the mid-embankment, at the right bank of the river, south-west off Wilczyce (meadows and waste lands with some over-growing parts)	
Structure no. p-77 at km 21+000 - 21+500 of the river	A complex of meadows at the behind-embankment of the Widawa River, at the right bank of the river, south-west off Wilczyce. Meadows - some well-developed.	

Place of occurrence	Description of the environment	Description of occurring species
WFS 45.2, 44.3 Structure no. p-78 at km 20+400 - 21+400 of the river	A deciduous forest.	
WFS 45.2, 44.3 Structure no. p-79 at km 20+900 - 21+400 of the river	A complex of meadows at the behind- embankment of the Widawa River, at the right bank of the river, south-west off Wilczyce.	
Structure no. p-80 at km 20+600 - 21+300 of the river	A complex of meadows and waste lands at the left-bank of the Widawa River, west off the mouth of the transit channel of flood waters from the Odra River to the Widawa River. Meadows and post-agricultural waste lands.	
Structure no. p-81 at km 20+600 - 20+900 of the river	Meadows and sedges surrounded by the old river-bed of the Widawa River, at the mid- embankment of the Widawa River at the right bank of the river, between Zgorzelisko and Wiczyce.	
Structure no. p-82 at km 19+500 - 20+400 of the river Structure no. p-84 at km 19+700 - 20+600 of the river	A complex of meadows and waste lands at the left bank of the Widawa River, north off Lechitow Street. Wet meadows at the mid-embankment of the Widawa River at the right bank of the river between Zgorzelisko and Wilczyce.	
Structure no. p-85 at km 19+500 - 20+000 of the river	Wet meadows at the right bank of the Widawa River, at the behind-embankment, south off Gorlice (the WFS structure no. 45.2, 44.3)	
Structure no. p-86 at km 19+300 - 19+800 of the river	Meadows over-grown with trees at the right bank of the Widawa River, at the mid- embankment, south-west off Gorlice.	
Structure no. p-87 at km 17+200 - 19+400 of the river	A complex of meadows, sedges and post- agricultural waste lands at the left bank of the Widawa River, north off Kowale.	
Structure no. p-88 at km 17+600 - 19+100 of the river	A complex of meadows, sedges and post- agricultural waste lands at the right bank of the Widawa River, south off Psie Pole.	

Place of occurrence	Description of the environment	Description of occurring species
Structure no. g-4 at km 20+600 - 21+200 of the river	A complex of meadows and waste lands at the left-bank of the Widawa River, west off the mouth of the transit channel of flood waters from the Odra River to the Widawa River.	The place of occurrence of Sand Lizard <i>Lacerta agilis</i> (the 4th (IV) Appendix of the Habitats Directive) as well as Grass Snake <i>Natrix natrix</i> .
Structure no. g-5 at km 19+500 - 20+400 of the river	A complex of meadows and waste lands at the left bank of the Widawa River, north off Lechitow Street.	
Structure no. g-11 at km 17+200 - 19+400 of the river	A complex of meadows, sedges and post-agricultural waste lands at the left bank of the Widawa River, north off Kowale.	
Structure no. g-18 at km 17+600 - 19+100 of the river	A complex of meadows, sedges and post-agricultural waste lands at the right bank of the Widawa River, south off Psie Pole.	
Structure no. g-21 at km 17+200 of the river	(WFS structure no. 45.3) Small water ponds and backwaters at the right bank of the Widawa River, between the railway lines leading to Psie Pole and the road over-pass leading traffic to Psie Pole.	
Structure no. g-6 at km 19+500 - 20+000 of the river	Backwaters of the melioration ditch located north-east off Kowale at the left bank of the Widawa River (the WFS structures 44.11, 45.6, 44.13).	The place of occurrence of Grass Snake <i>Natrix natrix</i> .
Structure no. g-7 at km 19+200 - 19+400 of the river	Backwaters of the melioration ditch located north off Kowale at the left bank of the Widawa River (the WFS structures 44.11, 45.6, 44.13).	
Structure no. p-8 at km 19+000 - 19+200 of the river	Backwaters / sedges by the melioration ditch, north of Kowale, at the left bank of the Widawa River (the WFS structures 44.11, 45.6, 44.13).	
Structure no. g-10 at km 17+500 - 19+000 of the river	A melioration ditch located north-east off Kowale at the left bank of the Widawa River (the WFS structures 44.11, 45.6, 44.13, 44.3, 45.2).	
Structure no. g-12 at km 19+600 of the river	Sedges / backwaters, at the behind-embankment of the Widawa River, at the right bank of the river, in the southern part of Gorlice.	

Place of occurrence	Description of the environment	Description of occurring species
Structure no. g-13 at km 19+600 of the river	(WFS structure no. 45.2, 44.3) Sedges / backwaters, at the mid-embankment of the Widawa River being adjacent to the embankment at the water-side, at the right bank of the river, in the southern part of Gorlice.	The place of occurrence of Sand Lizard <i>Lacerta agilis</i> (the 4th (IV) Appendix of the Habitats Directive) as well as Grass Snake <i>Natrix natrix</i> .
Structure no. g-14 at km 19+300 - 19+400 of the river	Old river-bed of the Widawa River, at the mid-embankment of the Widawa River, at the right bank of the river, south off Gorlice (the WFS structure no. 45.2, 44.3).	
Structure no. g-15 at km 19+000 - 19+500 of the river	A melioration ditch located south off Gorlice, at the right bank of the Widawa River (the WFS structure no. 45.2, 44.3).	
Structure no. g-16 at km 19+000 of the river	(WFS structure no. 45.2, 44.3) A small water reservoir by the melioration ditch running through meadows, at the right bank of the Widawa River, south-west off Zgorzelisko.	
Structure no. g-17 at km 18+000 - 19+000 of the river	A melioration ditch located south off Psie Pole, at the right bank of the Widawa River (the WFS structure no. 45.2, 44.3).	
Structure no. p-20 at km 17+300 - 17+500 of the river	A deciduous forest at the behind-embankment of the Widawa River, surrounded by meadows, at the right bank of the river, south-west off Psie Pole, by the road towards Warsaw.	
Structure no. p-28 at km 19+000 - 19+200 of the river	(WFS structure no. 45.2, 44.3) Backwaters / sedges being the remnants of the old river-bed of the Widawa River, at the mid-embankment of the Widawa River, at the right bank of the river, south off Gorlice.	
Structure no. g-19 at km 17+200 - 18+000 of the river	A complex of meadows, sedges and post-agricultural waste lands at the right bank of the Widawa River, south off Psie Pole, adjacent to the road towards Warsaw.	
Structure no. p-29 at km 18+700 - 19+300 of the river	A complex of meadows and sedges at the right bank of the Widawa River, at the mid-embankment, south-west off Gorlice.	
Structure no. p-30 at km 19+300 - 19+800 of the river	Meadows over-grown with trees at the right bank of the Widawa River, at the mid-embankment, south-west off Gorlice.	

Place of occurrence	Description of the environment	Description of occurring species
Structure no. p-40 at km 1+500 - 3+000 of the channel	(WFS structure no. 41.3) Wrocław - Strachocin, the transit channel of flood waters from the Odra River to the Widawa River.	The potential place of occurrence of Grass Snake <i>Natrix natrix</i> .
Structure no. p-41 at km 2+500 of the channel	(WFS structure no. 41.3) Wrocław, Strachocin, at the mid-embankment of the transit channel of flood waters from the Odra River to the Widawa River.	
Structure no. p-42 at km 2+700 - 3+000 of the channel	Strachocin, south off Chalupnicza Street. Wet meadows with a deciduous forest being adjacent to them.	
Structure no. p-44 at km 2+000 of the channel	Strachocin, south off Chalupnicza Street (the WFS structure no. 45.5, 46.1, 44.11)	
Structure no. p-45 at km 1+600 of the channel	Strachocin, water pond east off the end of Chalupnicza Street.	
Structure no. g-49 at km 21+500 of the river	An old river-bed of the Widawa River, in the mid-embankment of the Widawa River, at the left bank of the river, east (around 100 metres) off the mouth of the Channel at the inlet of the Widawa River.	
Structure no. p-55 at km 1+300 of the channel	(WFS structure no. 41.3) Backwaters of the transit channel of flood waters from the Odra River to the Widawa River, by the bridge going from Swojczyce to Strachocin (at the northern side of the bridge).	
Structure no. p-56 at km 1+500 of the channel	(WFS structure no. 41.3) Backwaters of the transit channel of flood waters from the Odra River to the Widawa River, by the bridge going from Swojczyce to Strachocin (at the southern side of the bridge).	
Structure no. g-57 at km 20+700 - 21+000 of the river	The left-bank forks of the transit channel of flood waters from the Odra River to the Widawa River at the north-east off Swojczyce.	

Place of occurrence	Description of the environment	Description of occurring species
Structure no. g-58 at km 20+600 - 20+900 of the river	(WFS structure no. 45.2, 44.3) Old river-bed of the Widawa River at the mid-embankment of the Widawa River, at the right bank of the river between Zgorzelisko and Wilczyce.	
Structure no. g-59 at km 20+400 of the river	(WFS structure no. 45.2, 44.3) A small household pond at the south-eastern part of Zgorzelisko.	
Structure no. g-62 at km 19+900 of the river	A household pond at the southern part of Zgorzelisko (the WFS structure no. 45.2, 44.3).	
Structure no. g-64 at km 16+200 of the river	(WFS structure no. 45.2, 44.3) Settlers of the closed sugar factory, at the left bank of the Widawa River, east off Soltysowice.	
Structure no. p-43 at km 2+200 - 2+500 of the channel	A forest by the flood-protection embankment at Strachocin (at its land-side), east off the transfer channel of flood waters from the Odra River to the Widawa River.	The potential place of occurrence of Slow Worm <i>Anguis fragilis</i> and Grass Snake <i>Natrix natrix</i> .
Structure no. g-54 at km 20+400 - 21+500 of the river	A deciduous forest at the behind-embankment of the Widawa River, at the right bank of the river, south-west off Wilczyce (the WFS structure no. 45.2, 44.3).	
Structure no. g-46 at km 23+000 - 24+000 of the river	(WFS structure no. 44.2) A complex of meadows, sedges, reed areas and backwaters of the Widawa River, at the right bank of the river, east off Wilczyce.	The potential place of occurrence of Sand Lizard <i>Lacerta agilis</i> (the 4th (IV) Appendix of the Habitats Directive), Viviparous Lizard <i>Lacerta vivipar</i> , Slow Worm <i>Anguis fragilis</i> and Grass Snake <i>Natrix natrix</i> .
Structure no. g-50 at km 21+300 - 21+700 of the river	A complex of meadows east off the mouth of the transit channel of flood waters from the Odra River to the Widawa River, at the left bank of the Widawa River.	
Structure no. g-51 at km 20+800 - 21+900 of the river	A complex of meadows and waste lands being adjacent to the Widawa River, in the mid-embankment, at the right bank of the river, south-west off Wilczyce.	
Structure no. g-52 at km 21+000 - 21+500 of the river	A complex of meadows at the behind-embankment of the Widawa River, at the right bank of the river, south-west off Wilczyce.	

Place of occurrence	Description of the environment	Description of occurring species
Structure no. g-53 at km 20+400 - 21+500 of the river	A complex of meadows at the behind-embankment of the Widawa River, at the right bank of the river, south-west off Wilczyce (the WFS structure no. 45.2, 44.3).	
Structure no. g-60 at km 19+800 - 20+800 of the river	Wet meadows at the mid-embankment of the Widawa River at the right bank of the river between Zgorzelisko and Wilczyce.	
Structure no. g-61 at km 20+300 - 20+400 of the river	Meadows over-growing at the right bank of the Widawa River, at the behind-embankment, south-east off Gorlice (the WFS structure no. 45.2, 44.3)	
Structure no. g-63 at km 19+500 - 20+000 of the river	Wet meadows at the right bank of the Widawa River,south off Gorlice.	
Positions of birds		
Structure p-6, at km 2+600 of the channel (WFS structures 40)	The species was found present only at 1 position in the vicinity of the investment.	[A021] Eurasian Bittern Botaurus stellaris - the species covered by the full species protection in Poland, listed at the First (I) Appendix of the Birds Directive as well as the Second (II) Appendix of the Bonn Convention and Berne Convention.
Structure p-18, at km 21+400 of the channel (WFS structures 45.1) Structure p-27, at km 23+000 of the channel (WFS structures 44.2) Structure p-36, at km 20+700 of the channel (WFS structures 44.3) Structure p-61, at km 18+100 of the channel (WFS structures 44.3)	The presence of 7 stationary males was identified in the proximity of the investment, though taking into consideration the fact that all the inventory works were completed at the beginning of the return of birds from over-wintering periods, it should be considered that the population of the species within the area can be higher and equal at least a dozen pairs.	[A122] Corn Crake Crex crex - the species covered by the full species protection in Poland, listed at the First (I) Appendix of the Birds Directive as well as the Second (II) Appendix of the Bonn Convention and Berne Convention.
Structure no. p-34 at km 20+700 of the river (WFS structure no. 44.3)	The species was found present at 1 position in the vicinity of the investment.	[A123] Moorhen Gallinula chloropus - the species covered by the full species protection in Poland, listed at the First (I) Appendix of the Birds Directive as well as the Third (III) Appendix of the Berne Convention.
Structure p-24, at km 22+300 of the channel (WFS structures 44.2)	During the field inventory the species was found present at 4 positions in the proximity of the investment (single pairs), though the actual number of the species should be estimated at least twice as high.	[A233] Eurasian Wryneck Jynx torquilla - the species covered by the full species protection in Poland.
Structure p-38, at km 20+600 of the channel	The presence of 5 pairs was identified in the proximity of the investment, though taking into	[A234] Grey-headed Woodpecker Picus canus - the species covered by the full species protection in Poland, listed at the First (I) Appendix of the Birds Directive as well as the Second (II) Appendix of the Berne Convention.

Place of occurrence	Description of the environment	Description of occurring species
(WFS structures 44.3)	consideration the availability of potential habitats, its actual populations can be estimated at around 10 pairs.	
Structure p-7, at km 2+500 of the channel (WFS structures 40)	The presence of 4 pairs of the species was identified in the proximity of the investment.	[A236] Black Woodpecker <i>Dryocopus martius</i> - the species covered by the full species protection in Poland, listed at the First (I) Appendix of the Birds Directive as well as the Second (II) Appendix of the Berne Convention.
Structure p-67, at km 18+300 of the channel (WFS structures 44.13)	The presence of 2 pairs of the species was identified in the proximity of the investment.	[A276] Stone-chat <i>Saxicola rubicola</i> - the species covered by the strict species protection in Poland.
Structure p-1, at km 2+900 of the channel (WFS structures 45.5) Structure p-12, at km 0+800 of the channel (WFS structures 44.12) Structure p-16, at km 0+500 of the channel (WFS structures 45.1) Structure p-19, at km 21+500 of the channel (WFS structures 45.1) Structure p-22, at km 21+800 of the channel (WFS structures 45.2) Structure p-25, at km 23+000 of the channel (WFS structures 45.2) Structure p-28, at km 21+300 of the channel (WFS structures 44.3) Structure p-3, at km 2+800 of the channel (WFS structures 45.5) Structure p-35, at km 20+700 of the channel (WFS structures 44.3) Structure p-4, at km 2+700 of the channel (WFS structures 45.5) Structure p-41, at km 20+400 of the channel (WFS structures 44.3) Structure p-45, at km	The presence of 35 singing males of the species was identified in the proximity of the investment, however the current population of the species is likely to be higher and can reach up to 50 stationary males.	[A290] Grasshopper Warbler <i>Locustella naevia</i> - the species covered by the full species protection in Poland, listed at the Second (II) Appendix of the Berne Directive as well as the Second (II) Appendix of the Bonn Convention.

Place of occurrence	Description of the environment	Description of occurring species
20+100 of the channel (WFS structures 45.6) Structure p-46, at km 20+200 of the channel (WFS structures 44.12) Structure p-47, at km 19+800 of the channel (WFS structures 45.6) Structure p-48, at km 20+100 of the channel (WFS structures 44.3) Structure p-52, at km 19+600 of the channel (WFS structures 45.6) Structure p-55, at km 19+000 of the channel (WFS structures 44.3) Structure p-58, at km 18+700 of the channel (WFS structures 44.3) Structure p-62, at km 18+200 of the channel (WFS structures 44.3) Structure p-63, at km 18+600 of the channel (WFS structures 44.3) Structure p-66, at km 18+500 of the channel (WFS structures 44.13) Structure p-69, at km 18+100 of the channel (WFS structures 44.13) Structure p-70, at km 18+000 of the channel (WFS structures 44.13) Structure p-76, at km 17+000 of the channel (WFS structures 45.3) Structure p-77, at km 17+000 of the channel (WFS structures 44.14)		
Structure p-20, at km 21+700 of the channel (WFS structures 45.2) Structure p-42, at km	The presence of the species was identified only at 5 positions, though the level is certainly significantly higher than the actual one. Taking into consideration the availability	[A291] River Warbler <i>Locustella fluviatilis</i> - the species covered by the full species protection in Poland, listed at the Third (III) Appendix of the Berne Directive as well as the Second (II) Appendix of the Bonn Convention.

Place of occurrence	Description of the environment	Description of occurring species
20+100 of the channel (WFS structures 44.3) Structure p-51, at km 19+300 of the channel (WFS structures 44.3)	of the potential habitats of the species, its population can be estimated even at 20 stationary males.	
Structure p-10, at km 1+700 of the channel (WFS structures 44.11) Structure p-21, at km 21+700 of the channel (WFS structures 45.2) Structure p-23, at km 22+000 of the channel (WFS structures 45.2) Structure p-29 at km 21+000 of the channel (WFS structures 44.3) Structure p-33, at km 20+800 of the channel (WFS structures 44.3) Structure p-37, at km 20+700 of the channel (WFS structures 44.3) Structure p-43, at km 20+100 of the channel (WFS structures 44.3) Structure p-5, at km 2+600 of the channel (WFS structures 40) Structure p-50, at km 19+400 of the channel (WFS structures 44.3) Structure p-56, at km 18+900 of the channel (WFS structures 44.3) Structure p-57, at km 18+700 of the channel (WFS structures 44.3) Structure p-59, at km 18+600 of the channel (WFS structures 44.3) Structure p-64, at km 18+600 of the channel (WFS structures 44.3) Structure p-65, at km	The occurrence of the species at 28 positions was identified in the proximity of the investment. In the majority of cases the presence of 1 - 2 singing males at particular positions was identified. The total population of the species can be estimated at 40 - 50 stationary males.	[A298] Great Reed Warbler <i>Acrocephalus arundinaceus</i> - the species covered by the full species protection in Poland, listed at the Second (II) Appendix of the Berne Directive as well as the Second (II) Appendix of the Bonn Convention.

Place of occurrence	Description of the environment	Description of occurring species
18+400 of the channel (WFS structures 44.13) Structure p-74, at km 17+200 of the channel (WFS structures 44.13) Structure p-8, at km 2+500 of the channel (WFS structures 45.5)		
Structure p-11, at km 0+800 of the channel (WFS structures 46.1) Structure p-13, at km 0+800 of the channel (WFS structures 45.1) Structure p-14 at km 0+500 of the channel (WFS structures 44.12) Structure p-15 at km 0+500 of the channel (WFS structures 44.12) Structure p-17, at km 21+500 of the channel (WFS structures 45.1) Structure p-2, at km 3+000 of the channel (WFS structures 45.5) Structure p-26 at km 23+000 of the channel (WFS structures 44.2) Structure p-30, at km 20+600 of the channel (WFS structures 44.12) Structure p-31, at km 20+500 of the channel (WFS structures 44.12) Structure p-32 at km 20+400 of the channel (WFS structures 44.12) Structure p-39 at km 20+400 of the channel (WFS structures 44.3) Structure p-40, at km 20+450 of the channel (WFS structures 44.3) Structure p-44, at km	In the proximity of the investment the presence of 66 pairs of the species was identified, but - given the fact that the time of conducting the works did not allow to detect all the individuals located within the territories upon the return from their over-wintering period - it should be considered that the number is not full and the actual population can be much higher.	[A338] Red-backed Shrike <i>Lanius collurio</i> - the species covered by the full species protection in Poland, listed at the First (I) Appendix of the Birds Directive as well as the Second (II) Appendix of the Berne Convention.

Place of occurrence	Description of the environment	Description of occurring species
20+200 of the channel (WFS structures 44.12) Structure p-39 at km 20+300 of the channel (WFS structures 44.3) Structure p-53, at km 19+600 of the channel (WFS structures 45.6) Structure p-54, at km 19+000 of the channel (WFS structures 44.3) Structure p-60, at km 18+700 of the channel (WFS structures 44.3) Structure p-68, at km 18+200 of the channel (WFS structures 44.13) Structure p-71, at km 17+700 of the channel (WFS structures 44.13) Structure p-73, at km 17+300 of the channel (WFS structures 44.3) Structure p-75, at km 17+500 of the channel (WFS structures 44.3) Structure p-9, at km 1+900 of the channel (WFS structures 44.11)		
Structure p-72, at km 17+400 of the channel (WFS structures 44.3)	The presence of nearly 1 pair of the species was identified in the proximity of the investment. Probably the actual number of the species can be higher.	[A340] Great Grey Shrike <i>Lanius excubitor</i> - the species covered by the full species protection in Poland and listed at the Second (II) Appendix of the Berne Convention.

**APPENDIX 7 - LIST AND DESCRIPTION OF HABITATS' AND SPECIES' RESOURCES
IN AREA OF WORKS CONTRACT IMPACT**

Species name	Protection status		Presence in Poland	Presence within the Natura 2000 area	Presence within the potential natural object impact zone					
	in the European Union	in Poland			Natural object / location					
					WFS no. 40	WFS 41.1, 41.2, 41.3	WFS no. 44.1, 44.2, 44.3, 44.11, 44.12, 44.13,	WFS no. 45.1, 45.2, 45.5, 45.6,	WFS no. 46.1	WFS 42.1, 42.11
Natural habitats										
[91F0] Riparian mixed forests of Quercus robur, Ulmus laevis and Ulmus minor, Fraxinus excelsior or Fraxinus angustifolia, along the great rivers (Ficario-Ulmetum)	1st (I) Appendix of the Habitats Directive		Quite frequent	SAC "Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") 2083 ha			44.3 (h-5)			
[3150] Old river beds and natural eutrophic water reservoirs with gatherings made of Nympeion and Potamion	1st (I) Appendix of the Habitats Directive	-	fairly common	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") around 347.3 ha			44.1 (h-56), 1,54 ha 44.3 (h-3), 1,08 ha			
[6440] Cnidium meadows (Cnidion dubii)	1st (I) Appendix of the Habitats Directive	-	fairly common	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") around 347 ha	40 (h-54)		44.1, 44.11 (h-57) 44.12 (h-62) 44.13 (h-63) 44.3 (h-1, h-7, h-8)	45.5 (h-54), 45.6 (h62), 45.1 (h57), 45.2 (h-1)		42.1 (h-63)
[*91E0] Alluvial forests with Alnus glutinosa and Fraxinus excelsior (Salicetum albo-fragilis, Populetum albae, Alnenion, arge bittercress)	1st (I) Appendix of the Habitats Directive	-	fairly common	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") around 695 ha			44.3 (h-2) 44.4 (h-17)	45.5 (h-55), 45.6 (h-61), 45.1 (h-58), 45.2 (h-59),		
[6510] Low-land and mountain fresh meadows used extensively (Arrhenatherion elatioris)	1st (I) Appendix of the Habitats Directive	-	common	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") 208 ha	40 (h-54)		44.3 (h-4) 44.15 (h-64, h-67, h-72, h-71, h-74)	45.5 (h-54)		
Plants										
Gallic Rose Rosa	-	Strict	limited	Not applicable				45.1 (f-2)		

Species name	Protection status		Presence in Poland	Presence within the Natura 2000 area	Presence within the potential natural object impact zone					
	in the European Union	in Poland			Natural object / location					
					WFS no. 40	WFS 41.1, 41.2, 41.3	WFS no. 44.1, 44.2, 44.3, 44.11, 44.12, 44.13,	WFS no. 45.1, 45.2, 45.5, 45.6,	WFS no. 46.1	WFS 42.1, 42.11
gallica		protection								
Common Snowdrop Galanthus nivalis	-	Strict protection	numerously	Not applicable			44.3 (f-2, f-6)	45.2 (f-3)		
Yellow Water-lily Nuphar lutea	-	partial	numerously	Not applicable			44.3 (4, f-7)			
White Water-lily Nymphaea alba	-	partial	numerously	Not applicable			44.3 (4, f-7)			
Fen Violet Viola stagnina	-	strict protection	numerously	Not applicable	40 (f-1)		44.11 (f-5), 44.13 (f-8)	45.5 (f-1), 45.6 (f-5), 45.1 (f-2)		42.1 (f-8)
Broad-leaved Helleborine Epipactis helleborine	-	strict protection	numerously	Not applicable			44.3 (f-6)			
Southern adderstongue Ophioglossum vulgatum	-	strict protection	numerously	Not applicable						
Endangered plant species										
Thalictrum lucidum - Meadow-rue Allium angulosum - Mouse garlic Cnidium dubium - Marsh cnidium Cerastium dubium - Mouse-ear chickweed Euphorbia palustris L. - Marsh Euphorbia		LC category V category V category R category V category	threatened with extinction	Not applicable	40 (f-1)		44.12 (f-5) 44.13 (f-8)	45.5 (f-1) 45.6 (f-5) 45.1 (f-2)		
Stratiotes aloides - Water Pineapple		LC category	threatened with extinction				44.3 (f-4, f-7)			
Mushrooms (none)										
Invertebrates										
[1037] Green snaketail Ophiogomphus cecilia	The Second (II) and Fourth (IV) Appendix of the Habitats	Full species protection	numerously	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River")			44.12 (o-12)	45.6 (o-12)		

Species name	Protection status		Presence in Poland	Presence within the Natura 2000 area	Presence within the potential natural object impact zone Natural object / location					
	in the European Union	in Poland			WFS no. 40	WFS 41.1, 41.2, 41.3	WFS no. 44.1, 44.2, 44.3, 44.11, 44.12, 44.13,	WFS no. 45.1, 45.2, 45.5, 45.6,	WFS no. 46.1	WFS 42.1, 42.11
	Directive			1 position						
[1052] Scarce Fritillaria Euphydryas maturna	The Second (II) and Fourth (IV) Appendix of the Habitats Directive	Full species protection	numerously	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") Isolated population (A)			44.12 (o-12)	45.6 (o-12)		
[1059] Scarce Large Blue Phengaris [=Maculinea] telei	The Second (II) and Fourth (IV) Appendix of the Habitats Directive	Species protection	Not estimated, threatened	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") 20 positions			44.12 (o-12, o-11), 44.13 (o-13, o-14), 44.3 (o-31, o-32, o-33)	45.6 (o-12, o-15)		
[1061] Dusky Large Blue Phengaris [=Maculinea] nausithous	Protection all over the European Union	Strict protection	200 positions	Oak-hornbeam forests 22 locations, population number - not known			44.11 (o-11) 44.13 (o-13, o-14) 44.3 (o-31, o-32, o-33)	45.6 (o-15)		
[1060] Large Copper Lycaena dispar	The Second (II) and Fourth (IV) Appendix of the Habitats Directive	Strict protection	250 positions	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") 12 locations, population number - not known			44.12 (o-12), 45.2 (o-30), 44.3 (o-30)			
[1074] Tent Caterpillar Moth Eriogaster catax	The Second (II) and Fourth (IV) Appendix of the Habitats Directive	Species protection	Population number - not estimated	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") 4 locations, population number - not known			44.11 (o-10), 44.12 (o-10) 44.3 (o-18)	45.1 (o-1, 2, 3, 4, 5, 6, 7) 45.2 (o-18)	46.1 (o-10)	
[*1084] Hermit Beetle Osmoderma eremita	The Second (II) and Fourth (IV) Appendix of	Species protection	Several thousand in number	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the	40 (o-1)		44.13 (o-14) 44.2 (o-17) 44.3 (o-20, 21, 22, 29, 28, 27)	45.5 (o-23, o-1, o-16) 45.2 (o19, 20, 21, 22, 27)		

Species name	Protection status		Presence in Poland	Presence within the Natura 2000 area	Presence within the potential natural object impact zone Natural object / location					
	in the European Union	in Poland			WFS no. 40	WFS 41.1, 41.2, 41.3	WFS no. 44.1, 44.2, 44.3, 44.11, 44.12, 44.13,	WFS no. 45.1, 45.2, 45.5, 45.6,	WFS no. 46.1	WFS 42.1, 42.11
	the Habitats Directive			Odra River") 9 locations, population number - not known						
[1088] Great Capricorn Beetle <i>Cerambyx cerdo</i>	The Second (II) and Fourth (IV) Appendix of the Habitats Directive	Species protection	10 -100000	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") 13 locations, population number - not known	40 (o-1)		44.3 (o-20, 21, 22, 29, 28, 27)	45.5 (o-23, o-1) 45.1 (o-8, o-9), 45.2 (o19, 20, 21, 22, 27)		
Fish										
[1134] Spined loach <i>Cobitis taenia</i>	2nd (II) Appendix of the Habitats Directive	species protection	No data	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") population number - not estimated			44.2 (r-2)			42.1, 42.11 (r-2)
[1146] Ray-finned fish <i>Sabanejewia aurata</i>	2nd (II) Appendix of the Habitats Directive	species protection	No data	-			44.2 (r-2)			
[1145] European weather loach <i>Misgurnus fossilis</i>	2nd (II) Appendix of the Habitats Directive	strict species protection	No data	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") population number - not estimated	40 (r-1)	41.1 (r-1), 41.2 (r-1)	44.2 (r-2)			42.1, 42.11 (r-1)
[1134] European Bitterling <i>Rhodeus sericeus amarus</i>	2nd (II) Appendix of the Habitats Directive	strict species protection	No data	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") population number - not estimated		41.1 (r-1), 41.2 (r-1)	44.2 (r-2)			42.1, 42.11 (r-1)
Stone Loach	-	species	No data	-			44.2 (r-2)			42.1, 42.11 (r-

Species name	Protection status		Presence in Poland	Presence within the Natura 2000 area	Presence within the potential natural object impact zone Natural object / location					
	in the European Union	in Poland			WFS no. 40	WFS 41.1, 41.2, 41.3	WFS no. 44.1, 44.2, 44.3, 44.11, 44.12, 44.13,	WFS no. 45.1, 45.2, 45.5, 45.6,	WFS no. 46.1	WFS 42.1, 42.11
Barbatula barbatula		protection								1)
Amphibians										
[1166] Great Crested Newt Triturus cristatus	The Second (II) and Fourth (IV) Appendix of the Habitats Directive	Strict species protection	No data	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") population number - not estimated			44.11 (p-49, 55, 57) 44.13 (p-49, 55, 57) 44.2 (p-41) 44.3 (p-49, 55, 57) 45.2 (p-78, 79, 83, 85, 53, 54, 8, 51, 52)	45.6 (p-49, 55, 57) 45.2 (p-78, 79, 83, 85, 53, 54, 8, 51, 52)		
[1188] European Fire-bellied Toad Bombina bombina	The Second (II) and Fourth (IV) Appendix of the Habitats Directive	Strict species protection	No data	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") population number - not estimated	40 (p-1, 3)		44.11 (p-6, 49, 55, 56, 57), 44.13 (p-49, 55, 56, 57) 44.2 (p-41) 44.3 (p-78, 79, 83, 85, 53, 54, 8, 52, 124)	45.6 (p-49, 55, 56, 57) 45.2 (p-78, 79, 83, 85, 53, 54, 8, 52, 124)	46.1 (p-6)	
[1203] European Tree Frog Hyla arborea	The Fourth (IV) Appendix of the Habitats Directive	Strict species protection	No data	Not applicable	40 (p-1, 3)		44.11 (p-6, 49, 55, 56, 57), 44.13 (p-49, 55, 56, 57) 44.2 (p-41) 44.3 (p-78, 79, 83, 85, 53, 54, 8, 52, 124)	45.6 (p-49, 55, 56, 57) 45.2 (p-78, 79, 83, 85, 53, 54, 8, 52, 124)	46.1 (p-6)	
[1197] Common Spadefoot Pelobates fuscus	The Fourth (IV) Appendix of the Habitats Directive	Strict species protection	No data	Not applicable			44.3 (p-10, 8, 9, 48, 52)	45.2 (p-8, 9, 48, 52)		
[1210] Edible Frog Pelophylax esculentus (=Rana esculenta)	-	Strict species protection	No data	Not applicable	40 (p-1, 3)	41.3 (p-4, 39, 45, 46)	44.11 (p-5, 6, 49, 55, 56, 57) 44.13 (p-49, 55, 56, 57) 44.2 (p-41) 44.3 (p-10, 53,	45.5 (p-5, 6, 49, 55, 56, 47) 45.2 (p-53, 54, 8, 48, 51, 52, 124) 45.5 (p-11)	46.1 (p-5, 6)	

Species name	Protection status		Presence in Poland	Presence within the Natura 2000 area	Presence within the potential natural object impact zone Natural object / location					
	in the European Union	in Poland			WFS no. 40	WFS 41.1, 41.2, 41.3	WFS no. 44.1, 44.2, 44.3, 44.11, 44.12, 44.13,	WFS no. 45.1, 45.2, 45.5, 45.6,	WFS no. 46.1	WFS 42.1, 42.11
							54, 9, 48, 51, 52, 124)			
[1213] Common Frog <i>Rana temporaria</i>	The Third (III) Appendix of the Berne Convention	Strict protection	No data	Not applicable		41.3 (p-4, 45, 46)	44.11, 44.13 (p-49, 55, 56, 57), 44.2 (p-41) 44.3 (p-50, 78, 79, 83, 85, 53, 54, 51, 124)	45.6 (p-49, 55, 56, 57), 45.2 (p-78, 79, 83, 85, 53, 54, 51, 124)		
[1214] Moor Frog <i>Rana arvalis</i>	The Fourth (IV) Appendix of the Habitats Directive	Strict species protection	No data	Not applicable	40 (p-1, 3)		44.11 (p-5, 6, 49, 55, 57), 44.13 (p-49, 55, 57) 44.2 (p-41) 44.3 (p-50, 78, 79, 83, 85, 53, 54, 8, 51, 52) 44.14 (p-58, 91) 44.4 (p-93)	45.6 (p-49, 55, 57) 45.2 (p-78, 79, 83, 85, 53, 54, 8, 51, 52) 45.3 (p-92)		
Common Toad <i>Bufo bufo</i>	The Third (III) Appendix of the Berne Convention	Strict species protection	Commonly No data	Not applicable			44.11 (p-5, 6) 44.2 (p-41) 44.3 (p-10, 78, 79, 83, 85, 53, 54, 8, 9, 48, 52)	45.5 (p-5, 6) 45.2 (p-78, 79, 83, 85, 53, 54, 8, 9, 51, 52)	46.1 (5.6)	
Smooth Newt <i>Lissotriton vulgaris</i>	The Third (III) Appendix of the Berne Convention	Strict species protection	All over the country No data	Not applicable	40 (p-1, 3)	41.3 (p-4, 45, 46)	44.11 (p-49, 55, 56, 57) 44.13 (p-49, 55, 56, 57), 44.2 (p-41) 44.3 (p-10, 78, 79, 83, 85, 53, 54, 8, 9, 48, 52, 124) 44.4 (p-93)	45.6 (p-49, 55, 56, 57), 45.2 (78, 79, 83, 85, 53, 54, 8, 9, 48, 51, 52, 124)		
European green toad <i>Pseudepidalea viridis</i>	The Fourth (IV)	Strict protection	Commonly No data	Not applicable			44.11 (p-47, 56)	45.6 (p-56)		

Species name	Protection status		Presence in Poland	Presence within the Natura 2000 area	Presence within the potential natural object impact zone Natural object / location					
	in the European Union	in Poland			WFS no. 40	WFS 41.1, 41.2, 41.3	WFS no. 44.1, 44.2, 44.3, 44.11, 44.12, 44.13,	WFS no. 45.1, 45.2, 45.5, 45.6,	WFS no. 46.1	WFS 42.1, 42.11
previously Bufo viridis	Appendix of the Habitats Directive						44.13 (p-56)			
Reptiles										
[1261] Sand Lizard Lacerta agilis	The Fourth (IV) Appendix of the Habitats Directive	Strict species protection	numerously No data	Not applicable	40 (g-2)		44.2 (g-46) 44.3 (g-51, 61, 63) 44.4 (g-25)	45.2 (g-53, 61, 63)		
Viviparous lizard Lacerta (Zootoca) vivipara	The Third (III) Appendix of the Berne Convention	Strict species protection	numerously No data	Not applicable	40 (g-2)		44.11 (g-3) 44.2 (g-46) 44.3 (g-51, 61, 63)	45.5 (g-3) 45.2 (g-53, 61, 63)	46.1 (g-3)	
Slow Worm Anguis fragilis	The Third (III) Appendix of the Berne Convention	Strict species protection	numerously No data	Not applicable	40 (g-2)		44.2 (g-46) 44.3 (g-51, 54, 61, 63), 44.2 (g-25)	45.5 (g-3) 45.2 (g-53, 54, 61, 63) 45.3 (g-21, 22)		
Grass Snake Natrix natrix	The Third (III) Appendix of the Berne Convention	Strict species protection	numerously No data	Not applicable	40 (g-2)		44.11 (g-44, 3, 6, 7, 8, 10) 44.13 (g-6, 7, 8, 10) 44.2 (g-46, 44, 3) 44.3 (g-10, 16, 53, 54, 61, 63, 15, 17, 13, 14, 28, 58, 59, 62)	45.2 (g-53, 54, 61, 63, 15, 17, 13, 14, 28, 58, 59, 62)	46.1 (g-44, 3)	
Birds										
[A021] Eurasian Bittern Botaurus stellaris	The First (I) Appendix of the Birds Directive	full protection	fairly numerous	-	40 (p-6)					
[A122] Corn Crake Crex crex	The First (I) Appendix of the Birds Directive	full protection	fairly numerous	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River")			44.2 (p-27) 44.3 (p-36, 61)	45.1 (p-18)		

Species name	Protection status		Presence in Poland	Presence within the Natura 2000 area	Presence within the potential natural object impact zone Natural object / location					
	in the European Union	in Poland			WFS no. 40	WFS 41.1, 41.2, 41.3	WFS no. 44.1, 44.2, 44.3, 44.11, 44.12, 44.13,	WFS no. 45.1, 45.2, 45.5, 45.6,	WFS no. 46.1	WFS 42.1, 42.11
				20 territorial males						
[A123] Moorhen Gallinula chloropus	The First (I) Appendix of the Birds Directive	full protection	sparsely numerous	-			44.3 (p-34)			
[A233] Eurasian Wryneck Jynx torquilla	-	full protection	sparsely numerous	-			44.2 (p-24)			
[A234] Grey-headed Woodpecker Picus canus	The First (I) Appendix of the Birds Directive	Full species protection	2000-3000 pairs	"Grady Odrzańskie" ("Odra oak-hornbeam forests") 25 pairs			44.3 (p-38)			
[A236] Black Woodpecker Dryocopus martius	-	Strict species protection	4000-8000 pairs	Not applicable	40 (p-7)					
[A276] Stone-chat Saxicola rubicola	-	Strict species protection	25000-35000 pairs	"Grady Odrzańskie" ("Odra oak-hornbeam forests") 2 pairs			44.13 (p-67), 44.4 (p-88)			
[A290] Grasshopper Warbler Locustella naevia	The Second (II) Appendix of the Berne Convention	Full species protection	100000-200000 pairs	-			44.12 (p-12, 46) 44.13 (p-66, 69, 70) 44.3 (p-28, 35, 41, 48, 55, 58, 62, 63)	45.5 (p-1, 3, 4) 45.6 (p-45, 47, 52) 45.1 (p-16, 19) 45.2 (p-22, 25)		
[A291] River Warbler Locustella fluviatilis	The Second (II) Appendix of the Berne Convention	Full species protection	50000-80000 pairs	-			44.3 (p-42, 51)	45.2 (p-20)		
[A298] Great Reed Warbler Acrocephalus arundinaceus	The Second (II) Appendix of the Berne Convention	Full species protection	20000-50000 pairs	-	40 (p-5)		44.11 (p-10) 44.13 (p-65, 74) 44.3 (p-33, 37, 43, 50, 56, 57,	45.5 (p-8) 45.2 (p-21, 23)		

Species name	Protection status		Presence in Poland	Presence within the Natura 2000 area	Presence within the potential natural object impact zone Natural object / location					
	in the European Union	in Poland			WFS no. 40	WFS 41.1, 41.2, 41.3	WFS no. 44.1, 44.2, 44.3, 44.11, 44.12, 44.13,	WFS no. 45.1, 45.2, 45.5, 45.6,	WFS no. 46.1	WFS 42.1, 42.11
							59, 64)			
[A338] Red-backed Shrike <i>Lanius collurio</i>	The First (I) Appendix of the Birds Directive	Full species protection	200000-400000 pairs	Not applicable			44.11 (p-9) 44.12 (p-14, 15, 30, 31, 32, 44) 44.13 (p-68, 71), 44.2 (p-26) 44.3 (p-39, 40, 49, 54, 60, 73, 75)	45.5 (p-2) 45.6 (p-53)	46.1 (p-11)	
[A340] Great Grey Shrike <i>Lanius excubitor</i>	The Second (II) Appendix of the Berne Convention	Full species protection	10000-20000 pairs	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") 10 pairs			44.3 (p-72)			
Mammals										
[1355] European Otter <i>Lutra lutra</i>	The Second (II) and Fourth (IV) Appendix of the Habitats Directive	Partial species protection	common	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") number not known		44.1, 44.11, 44.12 (s-2) 44.2 (s-3) 44.3 (s-4) 44.4 (s-7,8)	45.5 (s-1) 45.1 (s-2) 45.2 (s-3)			42.1, 42.11 (s-3)
[1337] Eurasian Beaver <i>Castor fiber</i>	The Second (II) and Fourth (IV) Appendix of the Habitats Directive	Strict species protection	20-25 thousand specimen	"Grady w dolinie Odry" ("Oak-hornbeam forests in the valley of the Odra River") frequent		41.1, 41.2, 41.3 (s-2) 44.1, 44.12 (s-2), 44.2 (s-3), 44.3 (s-4) 44.4 (s-7)	45.4 (s-3)			42.1, 42.11 (s-3)
European Mole <i>Talpa europaea</i>	-	Full species protection	Not known	Not applicable	All over the area	All over the area	All over the area	All over the area	All over the area	All over the area
Common Shrew <i>Sorex araneus</i>	-	strict species protection	Not known	Not applicable	All over the area	All over the area	All over the area	All over the area	All over the area	All over the area
Eurasian Pygmy Shrew <i>Sorex minutus</i>	-	strict species protection	Not known	Not applicable	All over the area	All over the area	All over the area	All over the area	All over the area	All over the area

Species name	Protection status		Presence in Poland	Presence within the Natura 2000 area	Presence within the potential natural object impact zone Natural object / location					
	in the European Union	in Poland			WFS no. 40	WFS 41.1, 41.2, 41.3	WFS no. 44.1, 44.2, 44.3, 44.11, 44.12, 44.13,	WFS no. 45.1, 45.2, 45.5, 45.6,	WFS no. 46.1	WFS 42.1, 42.11
Eurasian Water Shrew <i>Neomys fodiens</i>	-	strict species protection	Not known	Not applicable		41.1, 41.2 (s-2) 41.3 (s-2, 4)	44.1 (s-2) 44.11 (s-2) 44.2 (s-3) 44.3 (s-5)	45.1 (s-2) 45.5 (s-1) 45.2 (s-3)		42.1, 42.11 (s-3)
Western / eastern hedgehog <i>Erinaceus europaeus/concolor</i>	-	strict species protection	common	Not applicable		41.1, 41.2 (s-2) 41.3 (s-2)	44.1 (s-2) 44.11 (s-1, 2) 44.12 (s-2) 44.13 (s-6) 44.2 (s-3) 44.3 (s-5)	45.1 (s-2) 45.5 (s-1) 45.2 (s-3) 45.6 (s-6)		42.1, 42.11 (s-3)
European Water Vole <i>Arvicola amphibius</i> (= <i>A. terrestris</i>)	-	Partial species protection	numerous	Not applicable	All over the area	All over the area	All over the area	All over the area	All over the area	All over the area
Least weasel <i>Mustela nivalis</i>	-	strict species protection	common	Not applicable			44.13 (s-6) 44.2 (s-3) 44.3 (s-4, 5)	45.6 (s-6) 45.2 (s-3)		42.1, 42.11 (s-3)
Ermine <i>Mustela erminea</i>	-	strict species protection	common	Not applicable			44.13 (s-6) 44.2 (s-3) 44.3 (s-4, 5)	45.6 (s-6) 45.2 (s-3)		42.1, 42.11 (s-3)
Mammals bats										
[1322] Natterer's Bat <i>Myotis nattereri</i>	The Fourth (IV) Appendix of the Habitats Directive	Full species protection	commonly	Not applicable	40 (n-3, 2, 4)	41.1, 41.2, 41.3 (n-6, 7)	44.1 (n-6, 5) 44.11 (n-6) 44.12 (n-19) 44.13 (19, 10), 44.2 (11, 9, 10) 44.3 (n-18, 17, 14, 15, 10, 12, 16)	45.6 (19) 45.1 (n-8, 9, 10) 45.2 (n-10, 14, 12)	46.1 (n-6, 7)	42.1, 42.11 (n-20, 21, 23, 10)
[1323] Bechstein's Bat <i>Myotis bechsteinii</i>	The Second (II) and Fourth (IV) Appendix of the Habitats Directive	Full species protection	individual specimen	Not applicable	As above	As above	As above	As above	As above	As above
[1324] Greater Mouse-Eared Bat <i>Myotis myotis</i>	The Second (II) and Fourth (IV)	Full species protection	individual specimen	Not applicable	As above	As above	As above	As above	As above	As above

Species name	Protection status		Presence in Poland	Presence within the Natura 2000 area	Presence within the potential natural object impact zone Natural object / location					
	in the European Union	in Poland			WFS no. 40	WFS 41.1, 41.2, 41.3	WFS no. 44.1, 44.2, 44.3, 44.11, 44.12, 44.13,	WFS no. 45.1, 45.2, 45.5, 45.6,	WFS no. 46.1	WFS 42.1, 42.11
	Appendix of the Habitats Directive									
[1318] Pond Bat Myotis dasycneme	The Second (II) and Fourth (IV) Appendix of the Habitats Directive	Full species protection	individual specimen	Not applicable	As above	As above	As above	As above	As above	As above
[1314] Daubenton's Bat Myotis daubentonii	The Fourth (IV) Appendix of the Habitats Directive	Full species protection	All over Poland	Not applicable	As above	As above	As above	As above	As above	As above
[1327] Serotine Eptesicus serotinus	The Fourth (IV) Appendix of the Habitats Directive	Full species protection	All over Poland	Not applicable	As above	As above	As above	As above	As above	As above
[1309] Common Pipistrelle Pipistrellus pipistrellus	The Fourth (IV) Appendix of the Habitats Directive	Full species protection	All over Poland	Not applicable	As above	As above	As above	As above	As above	As above
[1309] Soprano Pipistrelle Pipistrellus pygmaeus	The Fourth (IV) Appendix of the Habitats Directive	Full species protection	All over Poland	Not applicable	As above	As above	As above	As above	As above	As above
[1317] Nathusius's Pipistrelle Pipistrellus nathusii	The Fourth (IV) Appendix of the Habitats Directive	Full species protection	All over Poland, unequally	Not applicable	As above	As above	As above	As above	As above	As above
[1312] Common Noctule Nyctalus noctula	The Fourth (IV) Appendix of the Habitats Directive	Full species protection	All over Poland,	Not applicable	As above	As above	As above	As above	As above	As above

Species name	Protection status		Presence in Poland	Presence within the Natura 2000 area	Presence within the potential natural object impact zone Natural object / location					
	in the European Union	in Poland			WFS no. 40	WFS 41.1, 41.2, 41.3	WFS no. 44.1, 44.2, 44.3, 44.11, 44.12, 44.13,	WFS no. 45.1, 45.2, 45.5, 45.6,	WFS no. 46.1	WFS 42.1, 42.11
[1326] Brown Long-Eared Bat <i>Plecotus auritus</i>	The Fourth (IV) Appendix of the Habitats Directive	Full species protection	All over Poland,	Not applicable	As above	As above	As above	As above	As above	As above
[1308] Barbastelle <i>Barbastella barbastellus</i>	The Second (II) and Fourth (IV) Appendix of the Habitats Directive	Full species protection	All over Poland,	Not applicable	As above	As above	As above	As above	As above	As above
[1330/1320] Whiskered Bat / Brandt's Bat <i>Myotis mystacinus</i> / <i>Myotis brandti</i>	The Fourth (IV) Appendix of the Habitats Directive	Full species protection	All over Poland, quite unequally	Not applicable	As above	As above	As above	As above	As above	As above

Appendix 8 - Summary of mitigation and compensation measures

8.1 Methods for minimizing the impact of the Works Contract on natural habitats and species protected under the Natura 2000 areas "Grady w dolinie Odry"

8.2 . Summary of impacts on species and habitats located in the region, of Works Contract and methods for minimizing the impact of the Works Contract

8.3. Summary of interactions that require the implementation of compensation and how it is carried out

Table. 8.1. Methods for minimizing the impact of the Works Contract on natural habitats and species protected under the Natura 2000 areas "Grady w dolinie Odry"

Notes:

The Works Contract impacts were presented at the 4-grade scale: 0 - no impact, 1 - negative impact, however insignificant, 2 - negative impact, significant, however, possible to be effectively minimised with the use of appropriate mitigation measures, 3 - negative impact, significant, impossible to be effectively minimised, requiring the use of compensatory measures.

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Insects					
Great Capricorn Beetle Cerambyx cerdo, Hermit Beetle Osmoderma eremita.	40	Felling of trees in the course of building / construction works - destruction of the habitat of the protected species (O-1).	2	Abandonment of tree felling.	0
Caterpillar Moth Eriogaster catax.	45.5	Conducting building / construction works - destruction or partial damage of blackthorn brushwood (the object no. O-25, O-26).	2	Leave blackthorn brushwood intact.	0
Great Capricorn Beetle Cerambyx cerdo, Hermit Beetle Osmoderma eremita.	45.5	Building / construction works can lead to the destruction or disruption of the habitat of species within the following natural objects: O-23 and O-1.	2	It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February). All the works around trees should be performed so that to minimise the negative impact of the works and machines / heavy equipment onto their future operation. The protection of tree trunks, e.g. through wrapping them with geo-textile. All the opencast works should be conducted so that tree root systems (root hairs) are uncovered for the shortest possible period of time - any exposure of trees for drying or freezing of their root system elements should be avoided.	1
Amphibians					
European Fire-bellied Toad Bombina bombina.	40	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes in the direct vicinity and within the natural objects: no. 1 and no. 3. Possible destruction of the breeding sites of amphibians	2	Leaving the natural objects no. 1 and no. 3 unchanged. Conduct all the works without interfering with the natural objects.	0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
		(the natural objects no. 1 and no. 3).			
European Fire-bellied Toad Bombina bombina.	45.5 46.1 44.11	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes in the direct vicinity and within the natural object no. 6. Possible destruction of the breeding sites of amphibians (the natural object no. 6).	2	Leaving the natural objects no. 5 and no. 6 unchanged. Conduct all the works without interfering with the natural objects.	0
Bats					
Bechstein's Bat Myotis bechstein, Pond Bat Myotis dasycneme, Greater Mouse-Eared Bat Myotis myotis, Barbastelle Barbastella barbastellus.	40 45.5	Damage of trees at the conduct of building / construction works - loss of the habitat of species, potential reduction in the number of available shelters, possible temporary decrease of the area or loss of feeding sites completely.	2	Protection of trees during building / construction works.	0
Bechstein's Bat Myotis bechstein, Pond Bat Myotis dasycneme, Greater Mouse-Eared Bat Myotis myotis, Barbastelle Barbastella barbastellus.	40 45.5	Conducting building / construction works - startling (disturbance) of bats at the conduct of building / construction works, possible temporary decrease of the area of feeding places, possible temporary leaving of shelters by bats.	2	In case of finding occupied shelters of bats (especially in their breeding period, namely from the beginning of May to the end of July), temporary abandonment of building / construction works with the use of machines and heavy equipment within 50 m at minimum from any found shelter as well as chiropterological consultation to determine the safe for bats) date(s) of re-starting the works.	1
Bechstein's Bat Myotis bechstein, Pond Bat Myotis dasycneme, Greater Mouse-Eared Bat Myotis myotis, Barbastelle Barbastella barbastellus.	40 45.5	Felling of trees - loss of the habitat of species, potential reduction in the number of available shelters, possible temporary decrease of the area or loss of feeding sites completely.	2	Resignation from felling trees within the Natura 2000 area.	0
Bechstein's Bat Myotis bechstein, Pond Bat Myotis dasycneme, Barbastelle Barbastella barbastellus.	40 45.5	Elimination of the water reservoir - loss of the habitat of species, decrease of the area or loss of feeding sites completely.	2	Leaving the water reservoir intact.	0
Fish					
[1145] European weather loach Misgurnus fossilis	40	Due to conducting the works related to the execution of the over-flow under the protection of the existing shield and sheet piling walls, the impact of the Works Contract onto the species will be minor.	1	Prior to the start of placement of the sheet piling walls, it is possible to fish out European weather loach found nearby with their transfer to the Widawa River, which completely eliminate their potential losses.	0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Mammals					
[1355] European Otter Lutra lutra	<u>40</u> <u>45.5</u>	The negligible impact of the investment onto the species is projected as a result of the modernisation of the embankment and the execution of the over-flow resulting in the destruction of some habitats of the species. This is due to the fact that most findings of the species have been recorded beyond the area of undertaken direct actions and the whole valley of the Widawa River together with the channel constitutes the living habitat of otters.	1	Mitigating measures are not required due to the insignificant impact of the investment on the species.	1
[1337] Eurasian Beaver Castor fiber	<u>40</u> <u>45.5</u>	The negligible impact of the investment onto the species is projected as a result of the modernisation of the embankment and the execution of the over-flow (destruction of some potential habitats of the species) due to the remoteness of their positions from the planned investment activities as well as the occurrence of numerous positions of the species in the valley of the Widawa River. The channel - both currently as well as upon the construction period - can be used as a migration corridor for beavers.	1	Mitigating measures are not required due to the insignificant impact of the investment on the species.	1

Table. 8.2. Summary of impacts on species and habitats located in the region, of Works Contract and methods for minimizing the impact of the Works Contract

Notes:

The Works Contract impacts were presented at the 4-grade scale: 0 - no impact, 1 - negative impact, however insignificant, 2 - negative impact, significant, however, possible to be effectively minimised with the use of appropriate mitigation measures, 3 - negative impact, significant, impossible to be effectively minimised, requiring the use of compensatory measures.

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Natural habitats					
[91F0] Riparian mixed forests of <i>Quercus robur</i> , <i>Ulmus laevis</i> and <i>Ulmus minor</i> , <i>Fraxinus excelsior</i> or <i>Fraxinus angustifolia</i> , along the great rivers (Ficario-Ulmetum)	<u>45.2</u>	Destruction of a part of the habitat (together with felling of trees at the embankment base) within the area of around 0.3 ha as a result of the expansion of the embankment body and the execution of exits (permanent occupation) as well as the occupation of lands for technological routes and storage sites (temporary occupation) at the natural object no. 3. (Note: possible cumulative impact with the WFS structure no. 44.3).	2	Organise possible storage sites at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the object. Minimisation of possible felling / cutting down of trees and shrubs only to the extent required to expand the embankment. Location of technological routes at the embankment crest. Execution of exits at the routes of the existing roads. Application of the technology for the execution of superstructure of the embankment and its crest. Securing (in the form of fencing) of riparian trees and shrubs within the habitat not covered by the felling / cutting down against accidental damage for the duration of the construction.	1
	<u>44.3</u>	Destruction of a part of the habitat at the section of around 300 m with its area of around 0.2 ha as a result of the construction of the new embankment, passages (permanent occupation) as well as the occupation of lands for technological routes and storage sites (temporary occupation) at the natural object 3. (Note: possible cumulative impact with the WFS structure no. 44.3).	2	Execution of the construction of the embankment at the land-side, with abandonment, or limitation to the required minimum, of the occupation of lands within the mid-embankment. Use of the existing mid-field paths (roads) within the habitat for technological routes. Securing (in the form of fencing) of trees and shrubs within the habitat against accidental damage for the duration of the construction.	0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
		Possible destruction of a small, marginal part of the habitat at the natural object no. 10 as a result of the location of technological routes and storage places (temporary occupation).	1	Locate all the building / construction works as well as places of storage of materials and technological routes at a distance not exceeding (at maximum) 30 m from the investment structure (the embankment).	0
[6440] Cnidium meadows (Cnidion dubii)	<u>42.1</u>	Destruction of a small part of the habitat with its area of around 0.3 ha located at the left-bank part of the valley as a result of the reconstruction of the bridge, traffic of vehicles and machinery, possible execution of a storage site (temporary occupation) at the natural object no. 102. <i>(Note: possible cumulative impact with the WFS structure no. 44.13).</i>	1	Resignation from the location of storage and construction sites within the embankment. The occupation of lands should be minimised at the conduct of building / construction works and all the works should be performed at a distance of 20 - 30 m (at maximum) from the bridge (within a part covered by the habitat).	1/0
	<u>45.6</u>	Destruction of nearly half of the habitat, namely the area of around 1.3 ha, as a result of the construction of the new embankment (permanent occupation) as well as the occupation of lands for technological routes and storage sites (temporary occupation) at the natural object no. 101. <i>(Note: possible cumulative impact with the WFS structure no. 44.12).</i>	2	Locate places of storage of materials and technological routes only at the land-side of the embankment. Perform all the building / construction works at the erection of the embankment at the mid-embankment maximally up to the course of the existing ground road.	0
	<u>44.12</u>	Destruction of a small part of the habitat at the section of around 100 m with its area of around 0.4 ha as a result of the construction of the new embankment (permanent occupation) as well as the occupation of lands for technological routes and storage sites (temporary occupation) at the natural object no. 101. <i>(Note: possible cumulative impact with the WFS structure no. 45.6).</i>	2	Locate places of storage of materials and technological routes only at the land-side of the embankment. Perform all the building / construction works at the erection of the embankment at the mid-embankment maximally up to the course of the existing ground road.	0
	<u>44.13</u>	Destruction of a large part of the habitat with its area of around 5.2 ha (the total area of the habitat is equal to 35.84 ha) as a result of the construction of the new embankment (permanent occupation) as well as the occupation of lands for technological routes and storage sites (temporary occupation) at the natural object no. 102. <i>(Note: possible cumulative impact with the WFS structure no. 42.1).</i>	2	Organise possible storage sites and technological routes at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the habitat. Alternatively, placement of a technological route at the embankment crest. Technology of conducting the construction of the embankment from its front with the simultaneous limitation of the occupation of lands to the required minimum.	1
Plants					
Gallic Rose Rosa gallica	<u>45.1</u>	Possible destruction of the position of the species at the modernisation of the embankment - the habitat object no. 95.	1	In the course of implementing the investment, the population of Gallic Rose should be taken under consideration and all the renovation and transportation works should be planned so to by-pass its position.	0
Common Snowdrop Galanthus nivalis	<u>45.2</u>	No identified positions. It is possible to damage a part of the potential habitat of the species (the object no. 3) as a result of the construction of the new embankment.	2	Execution of the construction of the embankment at the land-side, with abandonment, or limitation to the required minimum, of the occupation of lands within the	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
				mid-embankment. Use of the existing mid-field paths (roads) within the habitat for technological routes. Securing (in the form of fencing) of trees and shrubs in the proximity of the forest habitat against accidental damage for the duration of the construction.	
	44.3	No identified positions. Then it is possible to damage a small part of the potential habitat of the species (the object no. 10) as a result of the construction of the new embankment.	1	Locate all the building / construction works as well as places of storage of materials and technological routes at a distance not exceeding (at maximum) 30 m from the investment structure (the embankment).	0
Yellow Water-lily <i>Nuphar lutea</i>	44.3	No identified positions. Then it is possible to damage a small part of the potential habitats of the species (overgrown old river-beds) as a result of the construction of the new embankment. It refers to the following natural objects: 5 and 14.	1	Locate all the building / construction works as well as places of storage of materials and technological routes at a distance not exceeding (at maximum) 15 m from the construction (structure) so as not to cause damage to the habitats.	0
White Water-lily <i>Nymphaea alba</i>	44.3	No identified positions. Then it is possible to damage a small part of the potential habitats of the species (overgrown old river-beds) as a result of the construction of the new embankment. It refers to the following natural objects: 5 and 14.	1	Locate all the building / construction works as well as places of storage of materials and technological routes at a distance not exceeding (at maximum) 15 m from the construction (embankment) so as not to cause damage to the habitats.	0
Fen Violet <i>Viola stagnina</i>	40	No threat for the identified positions because of the distance. Then it is possible to damage a small part of the potential habitat of the species as a result of the execution of the over-flow. The threat applies to the object no. 88.	1	Situate technological routes and storage places beyond within and in the direct vicinity of the habitat. Intensify all the building / construction works at the opposite side of the over-flow in relation to the habitat. Conduct works at the side of the habitat, if required for the construction of the over-flow, 10 - 20 m from the object at maximum.	1/0
	42.1	It is possible to directly damage a part of the population and the habitat of the species at the natural object no. 102 as a result of the construction of the bridge.	2	Resignation from the location of storage and construction sites within the embankment. The occupation of lands should be minimised at the conduct of building / construction works and all the works should be performed at a distance of 20 - 30 m (at maximum) from the bridge (within a part covered by the habitat).	1/0
	44.12	No identified positions. Then it is possible to damage a part of the potential habitat of the species as a result of the construction of the embankment. The threat applies to the object no. 101.	2	Locate places of storage of materials and technological routes only at the land-side of the embankment. Perform all the building / construction works at the erection of the embankment at the mid-embankment maximally up to the course of the existing ground road. It is possible to improve the state of the habitat and the population of the species in the post-implementation period in reference to shifting the embankments off the river-bed and - at the same time - allowing to flood meadows.	0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
	44.13	It is possible to directly damage a larger part of the population and the habitat of the species at the natural object no. 102 as a result of the execution of the embankment.	2	Organise possible storage sites and technological routes at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the habitat. Alternatively, placement of a technological route at the embankment crest. The technology of conducting the construction of the embankment from its front with the simultaneous limitation of the occupation of lands to the required minimum, especially at the mid-embankment side. It is possible to improve the state of the habitat and the population of the species in the post-implementation period in reference to shifting the embankments off the river-bed and - at the same time - allowing to flood meadows.	1
	45.5	No identified positions. Then it is possible to damage a small part of the potential habitat of the species as a result of the modernisation of the embankment. The threat applies to the object no. 88. <i>(Note: in case of the habitat of the species, possible cumulative impact with the WFS structure no. 40).</i>	2	Conduct all the works related to the reconstruction of the embankment at its land-side.	1/0
	45.6	No identified positions. Then it is possible to damage a part of the potential habitat of the species as a result of the construction of the embankment. The threat applies to the object no. 101.	2	Locate places of storage of materials and technological routes only at the land-side of the embankment. Perform all the building / construction works at the erection of the embankment at the mid-embankment maximally up to the course of the existing ground road. It is possible to improve the state of the habitat and the population of the species in the post-implementation period as a result of shifting the embankments off the river-bed and - at the same time - allowing to flood meadows.	0
	45.1	The identified positions of the species are located beyond the scope of the threat. Then it is possible to damage a large part of the potential habitat of the species as a result of the modernisation of the embankment. The threat applies to the object no. 95. <i>(Note: in case of the habitat of the species, possible cumulative impact with the WFS structure no. 44.11).</i>	2	In order to prevent damage of the position or deterioration of the state of its habitat, all the works should be conducted at the land-side of the embankment, including: technological routes and storage sites.	1/0
	44.11	The identified positions of the species are located beyond the scope of the threat. Then it is possible to damage a part of the potential habitat of the species as a result of the construction of the new embankment. The threat applies to the object no. 95. <i>(Note: in case of the habitat of the species, possible cumulative impact with the WFS structure no. 45.1).</i>	2	In order to prevent damage of the positions or deterioration of the state of the habitat, all the works should be conducted at the land-side of the existing embankment, including: technological routes and storage sites.	0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Broad-leaved Helleborine Epipactis helleborine	<u>44.3</u>	No identified positions. Then it is possible to damage a part of the potential habitat of the species as a result of the construction of the embankment. The threat applies to the object no. 10.	1	Locate all the building / construction works as well as places of storage of materials and technological routes at a distance not exceeding (at maximum) 30 m from the investment structure (the embankment).	0
Mushrooms					
Giant puffball Langermannia gigantea	<u>44.4</u>	One position of the species located at a greater distance from the projected embankment (around 80 m) and - at the same time - from the building / construction works. They are assessed as not being threatened.	0	No projected detailed minimizing recommendations due to their numerous occurrence in the vicinity of the Works Contract.	0
Endangered plant species					
Meadow-rue Thalictrum lucidum Mouse garlic Allium angulosum Marsh cnidium Cnidium dubium	<u>40</u>	One position of the species - Meadow-rue Thalictrum lucidum has been located within the object no. 88, however completely beyond possible threat. Then the natural object no. 88 constitutes a potential habitat of the considered endangered species. It is possible to damage a small part of the potential habitat of the species as a result of the execution of the over-flow.	1	Situate technological routes and storage places beyond within and in the direct vicinity of the habitat. Intensify all the building / construction works at the opposite side of the over-flow in relation to the habitat. Conduct works at the side of the habitat, if required for the construction of the over-flow, 10 - 20 m from the object at maximum.	1/0
Mouse garlic Allium angulosum Marsh cnidium Cnidium dubium	<u>44.12</u>	No identified positions. Then it is possible to damage a part of the potential habitats of the species as a result of the construction of the embankment. This applies to the natural object no. 101.	2	Locate places of storage of materials and technological routes only at the land-side of the embankment. Perform all the building / construction works at the erection of the embankment at the mid-embankment maximally up to the course of the existing ground road.	0
Mouse garlic Allium angulosum Marsh cnidium Cnidium dubium	<u>44.13</u>	Within the object no. 102 there are 4 positions of Marsh cnidium Cnidium dubium found (1 of which is located within the area of possible threat with damage). It is possible to damage a significant part of the potential habitats of the species as a result of the construction of the embankment.	2	Organise possible storage sites and technological routes at the land-side of the embankment, beyond the boundaries and beyond the direct vicinity of the habitat. Alternatively, placement of a technological route at the embankment crest. The technology of conducting the construction of the embankment from its front with the simultaneous limitation of the occupation of lands to the required minimum, especially at the mid-embankment side. The above solutions exclude the threat for the existing position of Marsh cnidium Cnidium dubium as well as significantly minimise any possible transformation of the potential habitat.	1
Meadow-rue Thalictrum lucidum Mouse garlic Allium angulosum Marsh cnidium Cnidium dubium	<u>45.5</u>	One position of the species - Meadow-rue Thalictrum lucidum has been located within the object no. 88, however completely beyond possible threat. Then the natural object no. 88 constitutes a potential habitat of the considered endangered species. It is possible to damage a part of the potential habitat of the species as a result of the execution of the over-	2	Conduct all the works related to the reconstruction of the embankment at its land-side.	1/0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
		flow.			
Mouse garlic <i>Allium angulosum</i> Marsh cnidium <i>Cnidium dubium</i>	45.6	No identified positions. Then it is possible to damage a part of the potential habitats of the species as a result of the construction of the embankment. This applies to the natural object no. 101.	2	Locate places of storage of materials and technological routes only at the land-side of the embankment. Perform all the building / construction works at the erection of the embankment at the mid-embankment maximally up to the course of the existing ground road.	0
Mouse-ear chickweed <i>Cerastium dubium</i> Marsh Euphorbia <i>Euphorbia palustris</i> Mouse garlic <i>Allium angulosum</i> Marsh cnidium <i>Cnidium dubium</i>	45.1	The identified positions of the species are located beyond the scope of the threat. Then it is possible to damage a large part of the potential habitat of the endangered species as a result of the modernisation of the embankment. The threat applies to the object no. 95.	2	In order to prevent damage of the habitat, all the works should be conducted at the land-side of the embankment, including: technological routes and storage sites.	1/0
Water Pineapple <i>Stratiotes aloides</i>	44.3	No identified positions. Then it is possible to damage a small part of the potential habitats of the species (overgrown old river-beds) as a result of the construction of the new embankment. It refers to the following natural objects: 5 and 14.	1	Locate all the building / construction works as well as places of storage of materials and technological routes at a distance not exceeding (at maximum) 15 m from the construction (embankment) so as not to cause damage to the habitats.	0
Sedge <i>Carex tomentosa</i> Marsh cnidium <i>Cnidium dubium</i>	44.15	The identified positions of the species are located beyond the scope of the threat. Then it is possible to damage a part of the potential habitat of the endangered species as a result of the construction of the embankment. The threat applies to the object no. 119.	2	At the section being adjacent to the object, locate all the building / construction works as well as places of storage of materials and access / technological routes only at the land-side of the embankment.	1
Insects					
Great Capricorn Beetle <i>Cerambyx cerdo</i> , Hermit Beetle <i>Osmoderma eremita</i> .	40	Felling of trees in the course of building / construction works - destruction of the habitat of the protected species (O-1).	2	Abandonment of tree felling.	0
Caterpillar Moth <i>Eriogaster catax</i> .	41.1	Complete removal or partial destruction of blackthorn bushes - the destruction of the habitat of the protected species (O-2).	2	All the blackthorn brushwood should be left intact. In case of no capabilities to meet the condition from the requirement no.1, actions should be taken to transfer egg deposits and cocoons of first larval stages within the period from February to the end of April under the supervision of a specialist entomologist.	1
Caterpillar Moth <i>Eriogaster catax</i> .	41.2	Complete removal or partial destruction of blackthorn bushes - the destruction of the habitat of the protected species (O-2).	2	All the blackthorn brushwood should be left intact. In case of no capabilities to meet the condition from the requirement no.1, actions should be taken to transfer egg deposits and cocoons of first larval stages within the period from February to the end of April under the supervision of a specialist entomologist.	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Caterpillar Moth Eriogaster catax.	<u>44.1</u>	Complete removal or partial destruction of blackthorn brushwood - the destruction of the habitat of the protected species (O-3, O-4).	2	All the blackthorn brushwood should be left intact. In case of no capabilities to meet the condition from the requirement no.1, actions should be taken to transfer egg deposits and cocoons of first larval stages within the period from February to the end of April under the supervision of a specialist entomologist.	1
Caterpillar Moth Eriogaster catax.	<u>44.11</u>	Complete removal or partial destruction of blackthorn bushes - the destruction of the habitat of the protected species (O-2).	2	All the blackthorn brushwood should be left intact. In case of no capabilities to meet the condition from the requirement no.1, actions should be taken to transfer egg deposits and cocoons of first larval stages within the period from February to the end of April under the supervision of a specialist entomologist.	1
Caterpillar Moth Eriogaster catax.	<u>44.12</u>	Complete removal or partial destruction of blackthorn bushes - the destruction of the habitat of the protected species (O-10).	2	All the blackthorn brushwood should be left intact. In case of no capabilities to meet the condition from the requirement no.1, actions should be taken to transfer egg deposits and cocoons of first larval stages within the period from February to the end of April under the supervision of a specialist entomologist.	1
Dusky Large Blue Maculinea nausitous, Scarce Large Blue Maculinea teleius.	<u>44.12</u>	The occupation of lands by the newly-formed embankment, transformation of the area by the way of conducting building / construction works - destruction of the habitats of the protected species (O-11).	2	Leaving the object no. O-11 unchanged.	0
Large Copper Lycaena dispar, Green snaketail Ophiogomphus cecilia, Scarce Fritillary Euphydryas maturna.	<u>44.12</u>	No significant impact occurs due to a great distance of the construction from the positions (O-12) of the protected species.	0	None	0
Dusky Large Blue Maculinea nausitous, Scarce Large Blue Maculinea teleius.	<u>44.13</u>	The occupation of lands by the newly-formed embankment, transformation of the area by the way of conducting building / construction works - destruction of the habitats of the protected species (O-13, O-14).	2	Leaving the object no. O-13 and O-14 unchanged.	0
Dusky Large Blue Maculinea nausitous, Scarce Large Blue Maculinea teleius.	<u>45.6</u>	No significant impact occurs due to a great distance of the construction from the positions (O-15) of the protected species.	0	None	0
Hermit Beetle Osmoderma eremita.	<u>45.6</u>	No significant impact occurs due to a great distance of the construction from the positions (O-16) of the protected species.	0	None	0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Hermit Beetle <i>Osmoderma eremita</i> .	<u>44.2</u>	Building / construction works can lead to the destruction or disruption of the habitat of species within the following natural object: O-17.	2	It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February). All the works around trees should be performed so that to minimise the negative impact of the works and machines / heavy equipment onto their future operation. The protection of tree trunks, e.g. through wrapping them with geo-textile. All the opencast works should be conducted so that tree root systems (root hairs) are uncovered for the shortest possible period of time - any exposure of trees for drying or freezing of their root system elements should be avoided.	1
Caterpillar Moth <i>Eriogaster catax</i> .	<u>45.5</u>	Conducting building / construction works - destruction or partial damage of blackthorn brushwood (the object no. O-24, O-25, O-26).	2	Leave blackthorn brushwood unchanged (absolutely - in case of the object no. O-25 and O-26, if possible - in case of the object no. O-24). In case of no capabilities to meet the condition from the requirement no.1, actions should be taken to transfer egg deposits and cocoons of first larval stages within the period from February to the end of April under the supervision of a specialist entomologist. The recommendation no. 2 refers to the object no. O-24 only.	0/1
Great Capricorn Beetle <i>Cerambyx cerdo</i> , Hermit Beetle <i>Osmoderma eremita</i> .	<u>45.5</u>	Building / construction works can lead to the destruction or disruption of the habitat of species within the following natural objects: O-23 and O-1.	2	It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February). All the works around trees should be performed so that to minimise the negative impact of the works and machines / heavy equipment onto their future operation. The protection of tree trunks, e.g. through wrapping them with geo-textile. All the opencast works should be conducted so that tree root systems (root hairs) are uncovered for the shortest possible period of time - any exposure of trees for drying or freezing of their root system elements should	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
				be avoided.	
Caterpillar Moth Eriogaster catax.	<u>45.2</u>	Conducting building / construction works - destruction or partial damage of blackthorn brushwood (the object no. O-18).	2	All the blackthorn brushwood should be left intact. In case of no capabilities to meet the condition from the requirement no.1, actions should be taken to transfer egg deposits and cocoons of first larval stages within the period from February to the end of April under the supervision of a specialist entomologist.	1
Great Capricorn Beetle Cerambyx cerdo, Hermit Beetle Osmoderma eremita.	<u>45.2</u>	Building / construction works can lead to the destruction or disruption of the habitat of species within the following natural objects: O-19, O-20, O-21, O-22 and O-27.	2	It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February). All the works around trees should be performed so that to minimise the negative impact of the works and machines / heavy equipment onto their future operation. The protection of tree trunks, e.g. through wrapping them with geo-textile. All the opencast works should be conducted so that tree root systems (root hairs) are uncovered for the shortest possible period of time - any exposure of trees for drying or freezing of their root system elements should be avoided.	1
Caterpillar Moth Eriogaster catax.	<u>45.1</u>	Conducting building / construction works - destruction or partial damage of blackthorn brushwood (the object no. O-5, O-6 and O-7).	2	All the blackthorn brushwood should be left intact. In case of no capabilities to meet the condition from the requirement no.1, actions should be taken to transfer egg deposits and cocoons of first larval stages within the period from February to the end of April under the supervision of a specialist entomologist.	1
Great Capricorn Beetle Cerambyx cerdo, Hermit Beetle Osmoderma eremita.	<u>45.1</u>	Building / construction works can lead to the destruction or disruption of the habitat of species within the following natural object: O-8, O-9.	2	It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February). All the works around trees should be performed so that to minimise the	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
				negative impact of the works and machines / heavy equipment onto their future operation. The protection of tree trunks, e.g. through wrapping them with geo-textile. All the opencast works should be conducted so that tree root systems (root hairs) are uncovered for the shortest possible period of time - any exposure of trees for drying or freezing of their root system elements should be avoided.	
Caterpillar Moth <i>Eriogaster catax</i> .	<u>46.1</u>	Conducting building / construction works - destruction or partial damage of blackthorn brushwood (the object no. O-10).	2	All the blackthorn brushwood should be left intact. In case of no capabilities to meet the condition from the requirement no.1, actions should be taken to transfer egg deposits and cocoons of first larval stages within the period from February to the end of April under the supervision of a specialist entomologist.	1
Caterpillar Moth <i>Eriogaster catax</i> .	<u>44.3</u>	Conducting building / construction works - destruction or partial damage of blackthorn brushwood (the object no. O-18).	2	All the blackthorn brushwood should be left intact. In case of no capabilities to meet the condition from the requirement no.1, actions should be taken to transfer egg deposits and cocoons of first larval stages within the period from February to the end of April under the supervision of a specialist entomologist.	1
Great Capricorn Beetle <i>Cerambyx cerdo</i> .	<u>44.3</u>	Building / construction works can lead to the destruction or disruption of the habitat of species within the following natural objects: O-20, O-21, O-22, O-28 and O-27.	2	It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and completed prior to the start of the growing season (namely by the end of February). All the works around trees should be performed so that to minimise the negative impact of the works and machines / heavy equipment onto their future operation. The protection of tree trunks, e.g. through wrapping them with geo-textile. All the opencast works should be conducted so that tree root systems (root hairs) are uncovered for the shortest possible period of time - any exposure of trees for drying or freezing of their root system elements should be avoided.	1
Hermit Beetle <i>Osmoderma eremita</i> .	<u>44.3</u>	Building / construction works can lead to the destruction or disruption of the habitat of species within the following natural objects: O-20, O-21, O-22, O-28, O-29, O-27.	2	It is allowed to perform modernisation and refurbishment works of the embankment (removing a top layer of humus at the embankment crest and its hardening). These works, however, must be executed in autumn and winter, with all the required precautions undertaken (with respect to the use of heavy machines and equipment in the immediate vicinity of trees) and	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
				completed prior to the start of the growing season (namely by the end of February). All the works around trees should be performed so that to minimise the negative impact of the works and machines / heavy equipment onto their future operation. The protection of tree trunks, e.g. through wrapping them with geo-textile. All the opencast works should be conducted so that tree root systems (root hairs) are uncovered for the shortest possible period of time - any exposure of trees for drying or freezing of their root system elements should be avoided.	
Dusky Large Blue Maculinea nausitous, Scarce Large Blue Maculinea teleius.	<u>44.3</u>	The occupation of lands by the newly-formed embankment, transformation of the area by the way of conducting building / construction works - destruction of the habitats of the protected species (O-33, O-32, O-31).	2	Leaving the objects no. O-33, O-32, O-31 unchanged.	0
Large Copper Lycaena dispar.	<u>44.3</u>	The occupation of lands by the newly-formed embankment, transformation of the area by the way of conducting building / construction works - destruction of the habitats of the protected species (O-30).	2	Leaving the object no. O-30 unchanged.	0
Fish					
[1145] European weather loach Misgurnus fossilis [1134] European Bitterling Rhodeus sericeus amarus	<u>41.1</u> <u>41.2</u>	Periodic pollution of water with suspensions at the conduct of works by the bridges. Due to the high immunity of the species onto this type of pollution, the impact of the Works Contract will be minor and limited directly to the area of the Works Contract.	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species.	1
[1149] Spined loach Cobitis taenia [1145] European weather loach Misgurnus fossilis Stone Loach Barbatula barbatula	<u>42.1</u> <u>42.1.1</u>	Periodic pollution of water with suspensions at the conduct of works by the bridges. The impact is short-term and limited in scope (in the Widawa River there are a lot of macrophytes which quickly absorb suspensions).	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species.	1
[1134] European Bitterling Rhodeus sericeus amarus	<u>42.1</u> <u>42.1.1</u>	Periodic pollution of water with suspensions at the conduct of works by the bridges. The impact is short-term and limited in scope (in the Widawa River there are a lot of macrophytes which quickly absorb suspensions).	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species.	1
		Destruction of mussels at the execution of the Works Contract (bridges) constituting an important element in the development of the species. At the execution of the Works Contract, a small area of the river banks will be subject to destruction - in practical terms it is irrelevant to the sub-population of	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species. However, it is recommended to release / put any mussels extracted from the bottom back to water, above the bridges.	1/0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
		European Bitterling <i>Rhodeus sericeus amarus</i> within the area.			
[1149] Spined loach <i>Cobitis taenia</i> [1145] European weather loach <i>Misgurnus fossilis</i> [1134] European Bitterling <i>Rhodeus sericeus amarus</i> Stone Loach <i>Barbatula barbatula</i>	44.2	Periodic pollution of water with suspensions at the conduct of works at the construction of the bridges within the area where the embankment goes in the vicinity of the river-bed. The impact is short-term and limited in scope (in the Widawa River there are a lot of macrophytes which quickly absorb suspensions).	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species.	1
Amphibians					
European Fire-bellied Toad <i>Bombina bombina</i> , Moor Frog <i>Rana arvalis</i> , European Tree Frog <i>Hyla arborea</i> , Edible Frog <i>Pelophylax esculentus</i> , Smooth Newt <i>Lissotriton vulgaris</i> .	40	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes in the direct vicinity and within the natural objects: no. 1 and no. 3. Possible destruction of the breeding sites of amphibians (the natural objects no. 1 and no. 3).	2	Leaving the natural objects no. 1 and no. 3 unchanged. Conduct all the works without interfering with the natural objects.	0
Edible Frog <i>Pelophylax esculentus</i> , European Tree Frog <i>Hyla arborea</i> , Smooth Newt <i>Lissotriton vulgaris</i> , Common Frog <i>Rana temporaria</i> , Common Toad <i>Bufo bufo</i> .	41.3	Widening the channel bed at the bottom to the width of 50 m at the section from the weir at the inlet to the Strachocinskie bridges and below the bridges to 35 m up to joining the Widawa River. Possible direct damage of four natural objects being the breeding place of amphibians (the natural object no. 4) and the potential breeding places of amphibians (the natural objects no. 39, 45 and 46).	3	Any minimisation is not possible. It is required to perform compensation.	3
Edible Frog <i>Pelophylax esculentus</i> , Common Toad <i>Bufo bufo</i> , Moor Frog <i>Rana arvalis</i> , European Fire-bellied Toad <i>Bombina bombina</i> , European Tree Frog <i>Hyla arborea</i> ,	45.5 46.1 44.11	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes in the direct vicinity and within the following natural objects: 5 and 6. Possible destruction of the breeding sites of amphibians (the natural objects no. 5 and no. 6).	2	Leaving the natural objects no. 5 and no. 6 unchanged. Conduct all the works without interfering with the natural objects.	0
Great Crested Newt <i>Triturus cristatus</i> , European Fire-bellied Toad <i>Bombina bombina</i> , European Tree Frog <i>Hyla arborea</i> , Moor Frog <i>Rana arvalis</i> , Smooth Newt <i>Lissotriton vulgaris</i> , Common Toad <i>Bufo bufo</i> , Common Frog <i>Rana temporaria</i> and Edible Frog <i>Pelophylax esculentus</i> .	44.2	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, localisation of technological routes in the vicinity and within the natural object no. 41. All the works will be conducted in the direct proximity of the natural object. The object is very valuable. Possible destruction of the potential breeding and living places of amphibians.	2	Leaving the natural object no. 41 unchanged. Conduct all the works without interfering with the natural object.	0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
European green toad <i>Pseudepipedeia viridis</i>	<u>44.11</u>	Construction of the new embankment no. 44.11. Direct damage of the potential breeding place of amphibians - the natural object no. 47.	3	Any minimisation is not possible. It is required to perform compensation.	3
Great Crested Newt <i>Triturus cristatus</i> , European Fire-bellied Toad <i>Bombina bombina</i> , European Tree Frog <i>Hyla arborea</i> , Moor Frog <i>Rana arvalis</i> , Smooth Newt <i>Lissotriton vulgaris</i> , Common Frog <i>Rana temporaria</i> , Edible Frog <i>Pelophylax esculentus</i> , European green toad <i>Pseudepipedeia viridis</i>	<u>44.11 45.6 44.13</u>	Cleaning and deepening melioration ditches running parallel to the Widawa River-bed. The cleaning of melioration ditches means the same as the elimination of the potential breeding places of amphibians such as backwaters of ditches and ditches themselves - the natural objects no. 49, 55, 56 and 57.	2	Withdrawal from the cleaning of melioration ditches.	0
Great Crested Newt <i>Triturus cristatus</i> , European Tree Frog <i>Hyla arborea</i> , Moor Frog <i>Rana arvalis</i> , Smooth Newt <i>Lissotriton vulgaris</i> , Common Frog <i>Rana temporaria</i> , Edible Frog <i>Pelophylax esculentus</i> , Common Spadefoot <i>Pelobates fuscus</i> , Common Toad <i>Bufo bufo</i> .	<u>44.3</u>	Construction of the new embankment no. 44.3. Direct damage of the breeding place of amphibians - the natural object no. 10 and the potential breeding place of amphibians - the natural object no. 50.	3	Any minimisation is not possible. It is necessary to reconstruct two water reservoirs being the breeding site of amphibians with their area corresponding to the destroyed objects.	3
European Fire-bellied Toad <i>Bombina bombina</i> , Great Crested Newt <i>Triturus cristatus</i> , Moor Frog <i>Rana arvalis</i> , Common Frog <i>Rana temporaria</i> , Common Toad <i>Bufo bufo</i> , Smooth Newt <i>Lissotriton vulgaris</i> , European Tree Frog <i>Hyla arborea</i> .	<u>45.2 44.3</u>	Construction of the embankment of the Widawa River-bed narrowing the river valley between the road bridge at Krzywoustego Street and the mouth of the Odra - Widawa channel to the Widawa River. Partial and temporary transformation of the potential wintering and feeding places of amphibians - the natural objects no. 78, 79, 83, 85.	1	Not required.	1
European Fire-bellied Toad <i>Bombina bombina</i> , Great Crested Newt <i>Triturus cristatus</i> , Moor Frog <i>Rana arvalis</i> , Common Frog <i>Rana temporaria</i> , Common Toad <i>Bufo bufo</i> , Smooth Newt <i>Lissotriton vulgaris</i> , European Tree Frog <i>Hyla arborea</i> .	<u>45.2 44.3</u>	Construction of the embankment of the Widawa River-bed narrowing the river valley between the road bridge at Krzywoustego Street and the mouth of the Odra - Widawa channel to the Widawa River. It is likely that the areas (not currently in use) will be built up which is considered to be the secondary effects of the investment. Among others, they constitute the potential feeding and wintering of amphibians. These are the natural objects no. 78, 79, 83, 85.	2	Legal protection of the areas - the natural objects no. 78, 79, 83, 85 located at the behind-embankment so that no built-up development to be erected - through appropriate introduction of records into spatial land management plans and studies.	0
European Fire-bellied Toad <i>Bombina bombina</i> , Great Crested Newt <i>Triturus cristatus</i> , Moor Frog <i>Rana arvalis</i> , Common Frog <i>Rana temporaria</i> , Smooth Newt <i>Lissotriton vulgaris</i> , European Tree	<u>45.2 44.3</u>	Cleaning and deepening melioration ditches running parallel to the Widawa River-bed. The cleaning of melioration ditches will mean the same as the elimination of the potential breeding places of amphibians such as their backwaters areas and ditches themselves - the natural objects no. 53 and 54.	2	Withdrawal from the cleaning of melioration ditches.	0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Frog Hyla arborea					
European Fire-bellied Toad Bombina bombina, Great Crested Newt Triturus cristatus, Edible Frog Pelophylax esculentus, Moor Frog Rana arvalis, Common Frog Rana temporaria, Smooth Newt Lissotriton vulgaris, European Tree Frog Hyla arborea, Common Spadefoot Pelobates fuscus, Common Toad Bufo bufo	45.2 44.3	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes in the direct vicinity and within the natural objects no. 8, 9, 48, 51, 52, 124. Possible damage of the breeding place (the natural objects no. 8 and 9) of amphibians and the potential breeding places (the natural places no. 48, 51, 52, 124).	2	Leaving the natural objects no. 8, 9, 48, 51, 52, 124 unchanged. Any interference with these objects should be avoided.	0
Great Crested Newt Triturus cristatus, European Fire-bellied Toad Bombina bombina, Common Spadefoot Pelobates fuscus, European Tree Frog Hyla arborea, Moor Frog Rana arvalis, Smooth Newt Lissotriton vulgaris, Common Toad Bufo bufo and Edible Frog Pelophylax esculentus.	44.14	Construction of the new flood-protection embankment no. 44.14. Direct damage of the potential breeding place of amphibians - the natural object no. 58.	3	Any minimisation is not possible. It is necessary to reconstruct a water reservoir with its area corresponding to the destroyed object.	3
European Fire-bellied Toad Bombina bombina, Great Crested Newt Triturus cristatus, European Tree Frog Hyla arborea, Moor Frog Rana arvalis, Common Frog Rana temporaria, Common Toad Bufo bufo, Smooth Newt Lissotriton vulgaris.	44.14	Construction of the new flood-protection embankment no. 44.14. Partial and temporary transformation of the potential wintering and feeding place of amphibians - the natural place no. 91.	1	Not required	1
	42.1.1	Construction of a draining concrete trough being perpendicular to the Widawa River at the western part of the bridge. The trough was built upon the modernisation of the bridge which took place in 2009 - 2010. Establishment of an ecological barrier for amphibians migrating along the river valley.	2	Liquidation of the trough.	0
Reptiles					
Grass snake Natrix natrix, Sand Lizard Lacerta agilis, Viviparous lizard Lacerta vivipara, Slow Worm Anguis fragilis.	40	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment in the vicinity and within the natural object no. 2. Damage of the place of occurrence of reptiles (the natural object no. 2).	2	Leaving the natural object no. 2 unchanged. Any interference with the object should be avoided.	0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Grass Snake <i>Natrix natrix</i> ,	<u>41.3</u>	Widening the channel bed at the bottom to the width of 50 m at the section from the weir at the inlet to the Strachocinskie bridges and below the bridges to 35 m up to joining the Widawa River. The direct damage of four natural objects being the potential place where reptiles occur (the following objects: 40, 41, 55 and 56).	3	Any minimisation is not possible. It is required to perform compensation.	3
Grass snake <i>Natrix natrix</i> , Viviparous lizard <i>Lacerta vivipara</i> .	<u>45.5 46.1 44.11</u>	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes in the direct vicinity and within the following natural objects: 3 and 44. All the works will be conducted in the direct proximity of these objects. Possible damage of the place of occurrence of reptiles (the natural object no. 3) and the potential place of occurrence of reptiles (the natural object no. 44).	2	Leaving the natural objects no. 3 and 44 unchanged. Any interference with these objects should be avoided.	0
Grass snake <i>Natrix natrix</i> , Sand Lizard <i>Lacerta agilis</i> , Viviparous lizard <i>Lacerta vivipara</i> , Slow Worm <i>Anguis fragilis</i> .	<u>44.2</u>	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment within the natural object no. 46. All the works will be conducted in the direct proximity of the natural object. The object is very valuable. Possible damage of the potential place of occurrence of reptiles - the natural object no. 46.	2	Leaving the natural object no. 46 unchanged. Any interference with the object should be avoided.	0
Grass Snake <i>Natrix natrix</i> .	<u>44.11 45.6 44.13</u>	Cleaning and deepening melioration ditches running parallel to the Widawa River-bed. The cleaning of melioration ditches will mean the same as the elimination of the places of occurrence of reptiles such as their backwaters areas and ditches themselves - the natural objects no. 6, 7, 8, 10.	2	Withdrawal from the cleaning of melioration ditches.	0
Grass Snake <i>Natrix natrix</i> .	<u>44.3</u>	Construction of the new embankment no. 44.3 The direct damage of potential places where reptiles occur - the following natural objects: 10 and 16.	3	Any minimisation is not possible. It is required to perform compensation. Two water reservoirs with their areas corresponding to the destroyed objects should be reconstructed.	3
Grass snake <i>Natrix natrix</i> , Sand Lizard <i>Lacerta agilis</i> , Viviparous lizard <i>Lacerta vivipara</i> , Slow Worm <i>Anguis fragilis</i> .	<u>45.2 44.3</u>	Construction of the embankment of the Widawa River-bed narrowing the river valley between the road bridge at Krzywoustego Street and the mouth of the Odra - Widawa channel to the Widawa River. Partial and temporary transformation of the potential places of occurrence of reptiles - the natural objects no. 53, 54, 61, 63.	1	Not required.	1
Grass snake <i>Natrix natrix</i> , Sand Lizard <i>Lacerta agilis</i> , Viviparous lizard <i>Lacerta vivipara</i> , Slow Worm <i>Anguis fragilis</i> .	<u>45.2 44.3</u>	Construction of the embankment of the Widawa River-bed narrowing the river valley between the road bridge at Krzywoustego Street and the mouth of the Odra - Widawa channel to the Widawa River.	2	Legal protection of the areas - the natural objects no. 53, 54, 61 and 63 located at the behind-embankment so that no built-up development to be erected - through appropriate introduction of records into spatial land	0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
		It is likely that the areas (not currently in use) will be built up which is considered to be the secondary effects of the investment. They are the potential place of occurrence of reptiles - the natural objects no. 53, 54, 61, 63. In addition, it comes to reducing the ecological corridor along the valley of the Widawa River.		management plans and studies.	
Grass Snake Natrix natrix.	<u>45.2 44.3</u>	Cleaning and deepening melioration ditches running parallel to the Widawa River-bed. The cleaning of melioration ditches will mean the same as the elimination of the places of occurrence of reptiles such as their backwaters areas and ditches themselves - the natural objects no. 15 and 17.	2	Withdrawal from the cleaning of melioration ditches.	0
Grass Snake Natrix natrix.	<u>45.2 44.3</u>	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes in the direct vicinity and within the natural object no. 13, 14, 28, 58, 59 and 62. Potential damage of the places of occurrence of reptiles - the natural objects no. 13, 14, 28 and the potential places of occurrence of reptiles (the natural objects no. 58, 59, 62).	2	Leaving the natural objects no. 13, 14, 28, 58, 59, 62 unchanged. Any interference with these objects should be avoided.	0
Grass Snake Natrix natrix.	<u>44.14</u>	Construction of the new flood-protection embankment no. 44.14. Direct damage of the place of occurrence of reptiles - the natural object no. 24.	2	Any minimisation is not possible. A water reservoir being the place of occurrence of reptiles needs to be reconstructed. The location of the reservoir should be set at the stage of further projection of the investment with a specialist in the field of protection of reptiles.	0
Grass Snake Natrix natrix, Sand Lizard Lacerta agilis, Slow Worm Anguis fragilis.	<u>44.14</u>	Construction of the new flood-protection embankment no. 44.14. Partial and temporary transformation of the place of occurrence of reptiles - the natural object no. 23.	1	Not required	1
	<u>42.1.1</u>	Construction of a draining concrete trough being perpendicular to the Widawa River at the western part of the bridge. The trough was built upon the modernisation of the bridge which took place in 2009 - 2010. Establishment of an ecological barrier for reptiles migrating along the river valley.	2	Liquidation of the trough	0
Grass Snake Natrix natrix, Sand Lizard Lacerta agilis, Slow Worm Anguis fragilis.	<u>44.4</u>	Construction of the new flood-protection embankment no. 44.4. Partial and temporary transformation of the place of occurrence of reptiles - the natural object no. 25.	1	Not required	1
Birds					

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Eurasian Bittern <i>Botaurus stellaris</i> , Grasshopper Warbler <i>Locustella naevia</i> , Great Reed Warbler <i>Acrocephalus arundinaceus</i>	40	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment in the proximity of the positions of the species will cause that it is possible to damage the breeding places of the protected species of birds.	2	Resignation from the location of places of storage of materials, technological routes and parking lots for machines and equipment in the direct vicinity of water reservoirs as well as at meadows constituting the breeding habitat of the species.	1
Eurasian Bittern <i>Botaurus stellaris</i> , Black Woodpecker <i>Dryocopus martius</i> .	40	Startling (disturbance) of the species nesting in the proximity of the site where the Works Contract is implemented as a result of noise generated at building / construction works. The impact refers above all to 1 couple of Eurasian Bittern <i>Botaurus stellaris</i> and Black Woodpecker <i>Dryocopus martius</i> .	2	Conducting the most burdensome (in terms of generated noise) works in the period from August till the end of February.	1/0
Grasshopper Warbler <i>Locustella naevia</i> , Great Reed Warbler <i>Acrocephalus arundinaceus</i>	45.5	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment in the proximity of the positions of the species will cause that it is possible to damage the breeding places of the protected species of birds.	2	Resignation from the location of places of storage of materials, technological routes and parking lots for machines and equipment in the direct vicinity of water reservoirs as well as at meadows constituting the breeding habitat of the species. It is advisable to conduct the works at the land-side of the embankment.	1/0
Red-backed Shrike <i>Lanius collurio</i> .	44.11	Occupation of the habitat for the species under the construction of the embankment, storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes can lead to damage of bushes constituting the breeding habitats of Red-backed Shrike.	2	Location of the places of storage of materials beyond the area of meadows and shrubs constituting the breeding habitat of the species.	1
Grasshopper Warbler <i>Locustella naevia</i>	41.3	Widening the channel bed at the bottom to the width of 50 m at the section from the weir at the inlet to the Strachocinskie bridges and below the bridges to 35 m to joining the Widawa River will cause damage of a part of the habitats and potential breeding habitats of Grasshopper Warbler. However, the species is common in the valley of the Widawa River and there is (and will be) a series of suitable habitats for the species.	1	Minimizing is not possible. The consent of the General Director of Environmental Protection required to be allowed to destroy the breeding habitats of the protected species - Grasshopper Warbler.	1
Grasshopper Warbler <i>Locustella naevia</i>	44.1	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes in the proximity of the positions of the species or in the proximity of their habitats will cause damage of at least a fragment of the breeding habitat of Grasshopper Warbler.	1	Conducting all the building / construction works at the land-side of the embankment. Resignation from the location of technological routes and places of storage of materials within the mid-embankment.	1/0
Corn Crake <i>Crex crex</i> , Grasshopper Warbler <i>Locustella naevia</i>	45.1	In case of occupation of the mid-embankment area at the storage of soils, building / constructions materials, organisation of parking lots for heavy machines, equipment and technological routes, it is possible to damage the positions of the species and their habitats.	2	Conducting all the modernisation works at the land-side of the embankment. Resignation from the location of technological routes and places of storage of materials within the mid-embankment.	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Red-backed Shrike <i>Lanius collurio</i> .	<u>45.1</u>	Removal of trees and shrubs at the embankment base at the conduct of building / construction works can cause damage of the breeding habitat of Red-backed Shrike.	2	Limitation of the removal of trees and shrubs to the required minimum. In case of any need to perform their felling / cutting down, these works should be made beyond the breeding season of birds, namely between August and the end of February.	1
Grasshopper Warbler <i>Locustella naevia</i> , River Warbler <i>Locustella fluviatilis</i> .	<u>45.2</u>	In case of occupation of the mid-embankment area at the storage of soils, building / constructions materials, organisation of parking lots for heavy machines, equipment and technological routes, it is possible to damage the breeding habitats of the species.	2	Conducting all the modernisation works at the land-side of the embankment. Resignation from the location of technological routes and places of storage of materials within the mid-embankment.	0
Grasshopper Warbler <i>Locustella naevia</i>	<u>44.3</u>	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes in the proximity of the positions of the species or within their habitats can cause damage of a fragment of the breeding habitats of Grasshopper Warbler at the land-side of the existing embankment, at the section between km 19,5 and km 20,5 of the course of the Widawa River.	1	Limitation of a line of building / construction works within the habitat of the species to the required minimum. It is advisable to conduct building / construction works at the land-side of the projected embankment in order to preserve meadows intact within the area of the future mid-embankment. The damage of the habitat is compensated to some extent by the fact that its part will be found within the mid-embankment improving moisture conditions of the habitat.	1/0
Red-backed Shrike <i>Lanius collurio</i> .	<u>44.3</u>	Felling / cutting down of trees and shrubs at the route of the new embankment will cause damage of the breeding habitat of Red-backed Shrike at the behind-embankment of the projected embankment at the level of 20 km from the course of the Widawa River.	2	Limitation of the felling / cutting down of bushes in the proximity of the embankment to the required minimum.	1/0
Grey-headed Woodpecker <i>Picus canus</i>	<u>44.3</u>	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes can cause damage of a fragment of riverine forest constituting the breeding place of Grey-headed Woodpecker. Felling / cutting down of trees at the course of the new embankment is another threat.	2	Limitation of felling / cutting down of trees in the proximity of the habitat of the species to the required minimum. Alternatively, execute the felling / cutting down of trees between August and the end of February, namely beyond the breeding season of birds. Resignation from the location of places of storage of materials and the execution of technological routes within the habitat of the species.	1
Red-backed Shrike <i>Lanius collurio</i> .	<u>44.12</u>	Damage of shrubs constituting the breeding positions of Red-backed Shrike as a result of the occupation of the habitat of the species for the construction of the embankment, storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment and technological routes.	2	Location of places of storage of materials, technological routes and parking places of machines and equipment beyond the area of shrubs constituting the breeding habitat of the species.	1/0
Grasshopper Warbler <i>Locustella naevia</i> , Red-backed Shrike <i>Lanius collurio</i> .	<u>45.6</u>	Storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes in the proximity of the positions of the species or in the proximity of their habitats will cause damage of the habitats at the	2	Location of places of storage of materials, technological routes and parking places of machines and equipment beyond the area of meadows constituting the breeding habitat of the species. Conducting all the modernisation works at the land-side	1/0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
		water-side of the embankment.		of the projected embankment.	
Red-backed Shrike <i>Lanius collurio</i> .	44.13	Damage of shrubs constituting the breeding positions of Red-backed Shrike as a result of the occupation of the habitat of the species for the construction of the embankment, storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes.	2	Location of places of storage of materials, technological routes and parking places of machines and equipment beyond the area of meadows constituting the breeding habitat of the species.	1/0
Grasshopper Warbler <i>Locustella naevia</i>	42.1	In case of the occupation of a wider line of area around the bridge, it is possible to damage a fragment of meadows constituting the breeding habitat of Grasshopper Warbler. The impact can be due to the storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment as well as technological routes in the proximity of the positions of the species or within their habitats.	1	Location of places of storage of materials, technological routes and parking places of machines and equipment beyond the area of meadows constituting the breeding habitat of the species.	1/0
Grasshopper Warbler <i>Locustella naevia</i>	42.1.1	In case of the occupation of a wider line of area around the bridge, it is possible to damage a fragment of meadows constituting the breeding habitat of Grasshopper Warbler. The impact can be due to the storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment as well as technological routes in the proximity of the positions of the species or within their habitats.	1	Location of places of storage of materials, technological routes and parking places of machines and equipment beyond the area of meadows constituting the breeding habitat of the species.	1/0
Grasshopper Warbler <i>Locustella naevia</i>	44.14	Occupation of the habitat for the construction of the embankment, storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes can cause damage of a fragment of the habitat of Grasshopper Warbler as well as loss of a part of the habitat as a result of its separation from floods upon the construction of the new embankment.	2	Limitation of a line of building / construction works within the habitat of the species to the required minimum. It is advisable to conduct building / construction works at the land-side of the projected embankment in order to preserve meadows intact within the area of the future mid-embankment.	1
Grasshopper Warbler <i>Locustella naevia</i>	44.4	Occupation of the habitat under the construction of the embankment, storage of soil, building / construction materials, organisation of parking lots for heavy machines and equipment, technological routes can lead to damage of a fragment of the breeding habitat of the species.	1	Limitation of a line of building / construction works within the habitat of the species to the required minimum. It is advisable to conduct building / construction works at the land-side of the projected embankment in order to preserve meadows intact within the area of the future mid-embankment.	1/0
Mammals					

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
[1355] European Otter Lutra lutra	<u>All at which the species is found</u>	The negligible impact of the investment onto the species is projected as a result of the modernisation / construction / demolition of the embankment consisting in the destruction of a part of the habitats of the species. This is due to the fact that most findings of the species have been recorded beyond the area of undertaken direct actions and the whole valley of the Widawa River constitutes the living habitat of otters.	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species.	1
	<u>41.1</u> <u>41.2</u> <u>42.1</u> <u>42.1.1</u> <u>42.2</u>	Changing the functionality of the valley as a migration corridor for the species as a result of the reconstruction of road and railway bridges - the impact will be short-term. The modernisation of these bridges (especially at busy roads and railway bridges) should ensure the ecological functionality of these objects for possibly free movement of fauna (including beavers and otters). Therefore, at the bridges, it is projected to maintain (or increase) their current clear span (especially horizontally).	1	Apart from the increase of current clear spans of these bridges, especially horizontal ones, it is also required to provide a large dry area above the (average) water surface at both sides of the water course. The land area should have its natural coverage (e.g. soil, stones) enabling the development of vegetation.	1/0
[1337] Eurasian Beaver Castor fiber	<u>All at which the species is found</u>	The negligible impact of the investment onto the species is projected as a result of the modernisation / construction / demolition of the embankments (destruction of a part of the habitats of the species) due to the remoteness of their positions from the planned investment activities as well as the occurrence of numerous positions of the species in the valley of the Widawa River.	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species.	1
	<u>41.1</u> <u>41.2</u> <u>42.1</u> <u>42.1.1</u> <u>42.2</u>	Changing the functionality of the valley as a migration corridor for the species as a result of the reconstruction of road and railway bridges - the impact will be short-term. The modernisation of these bridges (especially at busy roads and railway bridges) should ensure the ecological functionality of these objects for possibly free movement of fauna (including beavers and otters). Therefore, at the bridges, it is projected to maintain (or increase) their current clear span (especially horizontally).	1	Apart from the increase of current clear spans of these bridges, especially horizontal ones, it is also required to provide a large dry area above the (average) water surface at both sides of the water course. The land area should have its natural coverage (e.g. soil, stones) enabling the development of vegetation.	1/0
Common Shrew Sorex araneus	<u>All at which the species is found</u>	The negligible impact of the investment onto the species is projected as a result of the modernisation / construction / demolition of the embankments (destruction of a part of the habitats of the species) due to the fact that the species is common all over the valley of the Widawa River.	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species.	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Eurasian Pygmy Shrew Sorex minutus	<u>All at which the species is found</u>	The negligible impact of the investment onto the species is projected as a result of the modernisation / construction / demolition of the embankments (destruction of a part of the habitats of the species) due to the fact that the species is common all over the valley of the Widawa River.	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species.	1
Eurasian Water Shrew Neomys fodiens	<u>All at which the species is found</u>	The negligible impact of the investment onto the species is projected as a result of the modernisation / construction / demolition of the embankments (destruction of a part of the habitats of the species) due to the fact that the species is frequent within the valley of the Widawa River and, moreover, the potential positions are mostly remote from the area of building / construction works.	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species.	1
Western / eastern hedgehog Erinaceus roumanicus/europaeus	<u>All at which the species is found</u>	The negligible impact of the investment onto the species is projected as a result of the modernisation / construction / demolition of the embankments (destruction of a part of the habitats of the species) due to the fact that the species is frequent within the valley of the Widawa River and, moreover, most findings of the species are located beyond the area of building / construction works.	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species.	1
European Water Vole Arvicola amphibius	<u>All at which the species is found</u>	The negligible impact of the investment onto the species is projected as a result of the modernisation / construction / demolition of the embankments (destruction of a part of the habitats of the species) due to the fact that the species is frequent within the valley of the Widawa River and, moreover, most findings of the species are located beyond the area of building / construction works (the location of most positions beyond the area of the course of the embankments).	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species.	1
Least weasel Mustela nivalis	<u>All at which the species is found</u>	The negligible impact of the investment onto the species is projected as a result of the modernisation / construction / demolition of the embankments (destruction of a part of the habitats of the species) due to the fact that the species is frequent within the valley of the Widawa River and, moreover, most findings of the species are located beyond the area of building / construction works.	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species.	1
Ermine Mustela erminea	<u>All at which the species is found</u>	The negligible impact of the investment onto the species is projected as a result of the modernisation / construction / demolition of the embankments (destruction of a part of the habitats of the species) due to the fact that the species is frequent within the	1	Any mitigating measures are not required due to the insignificant impact of the investment on the species.	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
		valley of the Widawa River and, moreover, most findings of the species are located beyond the area of building / construction works.			
Bats					
Bechstein's Bat <i>Myotis bechsteinii</i> , Pond Bat <i>Myotis dasycneme</i> , Whiskered Bat <i>Myotis mystacinus</i> , Brandt's Bat <i>Myotis brandtii</i> , Daubenton's Bat <i>Myotis daubentonii</i> , Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat <i>Myotis nattereri</i> , Serotine <i>Eptesicus serotinus</i> , Common Pipistrelle <i>Pipistrellus pipistrellus</i> , Soprano Pipistrelle <i>Pipistrellus pygmaeus</i> , Nathusius's Pipistrelle <i>Pipistrellus nathusii</i> , Common Noctule <i>Nyctalus noctula</i> , Lesser Noctule <i>Nyctalus leisleri</i> , Brown Long-Eared Bat <i>Plecotus auritus</i> .	40	Damage of trees at the conduct of building / construction works - loss of the habitat of species, potential reduction in the number of available shelters, possible temporary decrease of the area or loss of feeding sites completely.	2	Protection of trees during building / construction works.	0
Bechstein's Bat <i>Myotis bechsteinii</i> , Pond Bat <i>Myotis dasycneme</i> , Whiskered Bat <i>Myotis mystacinus</i> , Brandt's Bat <i>Myotis brandtii</i> , Daubenton's Bat <i>Myotis daubentonii</i> , Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat <i>Myotis nattereri</i> , Serotine <i>Eptesicus serotinus</i> , Common Pipistrelle <i>Pipistrellus pipistrellus</i> , Soprano Pipistrelle <i>Pipistrellus pygmaeus</i> , Nathusius's Pipistrelle <i>Pipistrellus nathusii</i> , Common Noctule <i>Nyctalus noctula</i> , Lesser Noctule <i>Nyctalus leisleri</i> , Brown Long-Eared Bat <i>Plecotus auritus</i> .	40	Conducting building / construction works - startling (disturbance) of bats at the conduct of building / construction works, possible temporary decrease of the area of feeding places, possible temporary leaving of shelters by bats.	2	In case of finding occupied shelters of bats (especially in their breeding period, namely from the beginning of May to the end of July), temporary abandonment of building / construction works with the use of machines and heavy equipment within 50 m at minimum from any found shelter as well as chiropterological consultation to determine the safe for bats) date(s) of re-starting the works.	1
Bechstein's Bat <i>Myotis bechsteinii</i> , Pond Bat <i>Myotis dasycneme</i> , Whiskered Bat <i>Myotis mystacinus</i> , Brandt's Bat <i>Myotis brandtii</i> , Daubenton's Bat <i>Myotis daubentonii</i> , Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat	40	Felling of trees - loss of the habitat of species, potential reduction in the number of available shelters, possible temporary decrease of the area or loss of feeding sites completely.	2	Limiting the number of trees projected for felling / cutting down.	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula, Lesser Noctule Nyctalus leisleri, Brown Long-Eared Bat Plecotus auritus.					
Bechstein's Bat Myotis bechstein, Pond Bat Myotis dasycneme, Whiskered Bat Myotis mystacinus, Brandt's Bat Myotis brandti, Daubenton's Bat Myotis daubentonii, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula, Lesser Noctule Nyctalus leisler, Brown Long-Eared Bat Plecotus auritus.	40	Elimination of the water reservoir - loss of the habitat of species, decrease of the area or loss of feeding sites completely.	2	Leaving the water reservoir intact.	0
Greater Mouse-Eared Bat Myotis myotis, Natterer's Bat Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula.	41.1	Conducting building / construction works - startling (disturbance) of bats at the conduct of building / construction works, possible temporary decrease of the area of feeding places	1	None	1
Greater Mouse-Eared Bat Myotis myotis, Natterer's Bat Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula.	41.2	Conducting building / construction works - startling (disturbance) of bats at the conduct of building / construction works, possible temporary decrease of the area of feeding places	1	None	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat <i>Myotis nattereri</i> , Serotine <i>Eptesicus serotinus</i> , Common Pipistrelle <i>Pipistrellus pipistrellus</i> , Soprano Pipistrelle <i>Pipistrellus pygmaeus</i> , Nathusius's Pipistrelle <i>Pipistrellus nathusii</i> , Common Noctule <i>Nyctalus noctula</i> .	41.3	Conducting building / construction works - startling (disturbance) of bats at the conduct of building / construction works, possible temporary decrease of the area of feeding places	1	None	1
Daubenton's Bat <i>Myotis daubentonii</i> , Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat <i>Myotis nattereri</i> , Brown Long-Eared Bat <i>Plecotus auritus</i> , Barbastelle <i>Barbastella barbastellus</i> .	41.3	Demolition of the bunker - loss of the wintering area	2	Abandonment of demolition of the bunker.	0
Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat <i>Myotis nattereri</i> , Serotine <i>Eptesicus serotinus</i> , Common Pipistrelle <i>Pipistrellus pipistrellus</i> , Soprano Pipistrelle <i>Pipistrellus pygmaeus</i> , Nathusius's Pipistrelle <i>Pipistrellus nathusii</i> , Common Noctule <i>Nyctalus noctula</i> .	44.1	Conducting building / construction works - startling (disturbance) of bats at the conduct of building / construction works, possible temporary decrease of the area of feeding places	1	None	1
Bechstein's Bat <i>Myotis bechsteinii</i> , Whiskered Bat <i>Myotis mystacinus</i> , Brandt's Bat <i>Myotis brandtii</i> , Daubenton's Bat <i>Myotis daubentonii</i> , Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat <i>Myotis nattereri</i> , Serotine <i>Eptesicus serotinus</i> , Common Pipistrelle <i>Pipistrellus pipistrellus</i> , Soprano Pipistrelle <i>Pipistrellus pygmaeus</i> , Nathusius's Pipistrelle <i>Pipistrellus nathusii</i> , Common Noctule <i>Nyctalus noctula</i> , Brown Long-Eared Bat <i>Plecotus auritus</i> , Barbastelle <i>Barbastella barbastellus</i> .	44.1	Damage of trees at the conduct of building / construction works - loss of the habitat of species, possible temporary decrease of the area or loss of feeding sites completely.	2	Protection of trees during building / construction works.	0
Bechstein's Bat <i>Myotis bechsteinii</i> , Whiskered Bat <i>Myotis mystacinus</i> , Brandt's Bat <i>Myotis brandtii</i> , Daubenton's Bat <i>Myotis daubentonii</i> , Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat	44.1	Conducting building / construction works - startling (disturbance) of bats at the conduct of building / construction works, possible temporary decrease of the area of feeding places.	2	In case of finding occupied shelters of bats (especially in their breeding period, namely from the beginning of May to the end of July), temporary abandonment of building / construction works with the use of machines and heavy equipment within 50 m at minimum from any found shelter as well as chiropterological consultation to	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula, Brown Long-Eared Bat Plecotus auritus, Barbastelle Barbastella barbastellus.				determine the safe for bats) date(s) of re-starting the works.	
Bechstein's Bat Myotis bechsteinii, Whiskered Bat Myotis mystacinus, Brandt's Bat Myotis brandtii, Daubenton's Bat Myotis daubentonii, Greater Mouse-Eared Bat Myotis myotis, Natterer's Bat Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula, Brown Long-Eared Bat Plecotus auritus, Barbastelle Barbastella barbastellus.	44.1	Felling of trees - loss of the habitat of the species, possible temporary decrease of the area or loss of feeding sites completely.	2	Limiting the number of trees projected for felling / cutting down.	1
Bechstein's Bat Myotis bechstein, Pond Bat Myotis dasycneme, Whiskered Bat Myotis mystacinus, Brandt's Bat Myotis brandti, Daubenton's Bat Myotis daubentonii, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula, Brown Long-Eared Bat Plecotus auritus.	44.2	Elimination of the water reservoir - loss of the habitat of species, decrease of the area or loss of feeding sites completely.	2	Leaving the water reservoir intact.	0
Greater Mouse-Eared Bat Myotis myotis, Natterer's Bat Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus	44.2	Conducting building / construction works - startling (disturbance) of bats at the conduct of building / construction works, possible temporary decrease of the area of feeding places	1	None	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
noctula.					
Bechstein's Bat <i>Myotis bechsteinii</i> , Whiskered Bat <i>Myotis mystacinus</i> , Brandt's Bat <i>Myotis brandtii</i> , Daubenton's Bat <i>Myotis daubentonii</i> , Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat <i>Myotis nattereri</i> , Serotine <i>Eptesicus serotinus</i> , Common Pipistrelle <i>Pipistrellus pipistrellus</i> , Soprano Pipistrelle <i>Pipistrellus pygmaeus</i> , Nathusius's Pipistrelle <i>Pipistrellus nathusii</i> , Common Noctule <i>Nyctalus noctula</i> , Brown Long-Eared Bat <i>Plecotus auritus</i> , Barbastelle <i>Barbastella barbastellus</i> .	44.3	Damage of trees at the conduct of building / construction works - loss of the habitat of species, possible temporary decrease of the area or loss of feeding sites completely.	2	Protection of trees during building / construction works.	0
Bechstein's Bat <i>Myotis bechsteinii</i> , Whiskered Bat <i>Myotis mystacinus</i> , Brandt's Bat <i>Myotis brandtii</i> , Daubenton's Bat <i>Myotis daubentonii</i> , Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat <i>Myotis nattereri</i> , Serotine <i>Eptesicus serotinus</i> , Common Pipistrelle <i>Pipistrellus pipistrellus</i> , Soprano Pipistrelle <i>Pipistrellus pygmaeus</i> , Nathusius's Pipistrelle <i>Pipistrellus nathusii</i> , Common Noctule <i>Nyctalus noctula</i> , Brown Long-Eared Bat <i>Plecotus auritus</i> , Barbastelle <i>Barbastella barbastellus</i> .	44.3	Conducting of building / construction works within the embankment - startling (disturbance) of bats at the conduct of building / construction works, possible temporary decrease of the area of feeding places	2	In case of finding occupied shelters of bats (especially in their breeding period, namely from the beginning of May to the end of July), temporary abandonment of building / construction works with the use of machines and heavy equipment within 50 m at minimum from any found shelter as well as chiropterological consultation to determine the safe for bats) date(s) of re-starting the works.	1
Bechstein's Bat <i>Myotis bechsteinii</i> , Whiskered Bat <i>Myotis mystacinus</i> , Brandt's Bat <i>Myotis brandtii</i> , Daubenton's Bat <i>Myotis daubentonii</i> , Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat <i>Myotis nattereri</i> , Serotine <i>Eptesicus serotinus</i> , Common Pipistrelle <i>Pipistrellus pipistrellus</i> , Soprano Pipistrelle <i>Pipistrellus pygmaeus</i> ,	44.3	Felling of trees - loss of the habitat of the species, possible temporary decrease of the area or loss of feeding sites completely.	2	Limiting the number of trees projected for felling / cutting down.	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula, Brown Long-Eared Bat Plecotus auritus, Barbastelle Barbastella barbastellus.					
Bechstein's Bat Myotis bechsteinii, Pond Bat Myotis dasycneme, Whiskered Bat Myotis mystacinus, Brandt's Bat Myotis brandtii, Daubenton's Bat Myotis daubentonii, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula, Brown Long-Eared Bat Plecotus auritus.	44.3	Elimination of the water reservoir - loss of the habitat of species, decrease of the area or loss of feeding sites completely.	2	Leaving the water reservoir intact.	0
Bechstein's Bat Myotis bechsteinii, Pond Bat Myotis dasycneme, Whiskered Bat Myotis mystacinus, Brandt's Bat Myotis brandtii, Daubenton's Bat Myotis daubentonii, Greater Mouse-Eared Bat Myotis myotis, Natterer's Bat Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula, Brown Long-Eared Bat Plecotus auritus, Barbastelle Barbastella barbastellus.	45.1	Damage of trees at the conduct of building / construction works - loss of the habitat of species, possible temporary decrease of the area or loss of feeding sites completely.	2	Protection of trees during building / construction works.	0
Bechstein's Bat Myotis bechsteinii, Pond Bat Myotis dasycneme, Whiskered Bat Myotis mystacinus, Brandt's Bat Myotis brandtii, Daubenton's Bat Myotis daubentonii, Greater Mouse-Eared Bat Myotis myotis, Natterer's Bat Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus,	45.1	Conducting building / construction works - startling (disturbance) of bats at the conduct of building / construction works, possible temporary decrease of the area of feeding places, possible temporary leaving of shelters by bats.	2	In case of finding occupied shelters of bats (especially in their breeding period, namely from the beginning of May to the end of July), temporary abandonment of building / construction works with the use of machines and heavy equipment within 50 m at minimum from any found shelter as well as chiropterological consultation to determine the safe for bats) date(s) of re-starting the works.	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula, Brown Long-Eared Bat Plecotus auritus, Barbastelle Barbastella barbastellus.					
Bechstein's Bat Myotis bechsteinii, Pond Bat Myotis dasycneme, Whiskered Bat Myotis mystacinus, Brandt's Bat Myotis brandtii, Daubenton's Bat Myotis daubentonii, Greater Mouse-Eared Bat Myotis myotis, Natterer's Bat Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula, Brown Long-Eared Bat Plecotus auritus, Barbastelle Barbastella barbastellus.	45.1	Felling of trees - loss of the habitat of the species, possible temporary decrease of the area or loss of feeding sites completely.	2	Limiting the number of trees projected for felling / cutting down.	1
Greater Mouse-Eared Bat Myotis myotis, Natterer's Bat Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula.	45.1	Draining of wetlands - reduction of food base	2	Leaving the wetlands unchanged or restoring to their original state.	1
Bechstein's Bat Myotis bechsteinii, Pond Bat Myotis dasycneme, Whiskered Bat Myotis mystacinus, Brandt's Bat Myotis brandtii, Daubenton's Bat Myotis daubentonii, Greater Mouse-Eared Bat Myotis myotis, Natterer's Bat Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula, Brown Long-Eared Bat Plecotus auritus, Barbastelle	45.2	Damage of trees at the conduct of building / construction works - loss of the habitat of species, possible temporary decrease of the area or loss of feeding sites completely.	2	Protection of trees during building / construction works.	0

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
Barbastella barbastellus.					
Bechstein's Bat Myotis bechsteinii, Pond Bat Myotis dasycneme, Whiskered Bat Myotis mystacinus, Brandt's Bat Myotis brandtii, Daubenton's Bat Myotis daubentonii, Greater Mouse-Eared Bat Myotis myotis, Natterer's Bat Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula, Brown Long-Eared Bat Plecotus auritus, Barbastelle Barbastella barbastellus.	45.2	Conducting building / construction works - startling (disturbance) of bats at the conduct of building / construction works, possible temporary decrease of the area of feeding places, possible temporary leaving of shelters by bats.	2	In case of finding occupied shelters of bats (especially in their breeding period, namely from the beginning of May to the end of July), temporary abandonment of building / construction works with the use of machines and heavy equipment within 50 m at minimum from any found shelter as well as chiropterological consultation to determine the safe for bats) date(s) of re-starting the works.	1
Bechstein's Bat Myotis bechsteinii, Pond Bat Myotis dasycneme, Whiskered Bat Myotis mystacinus, Brandt's Bat Myotis brandtii, Daubenton's Bat Myotis daubentonii, Greater Mouse-Eared Bat Myotis myotis, Natterer's Bat Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus noctula, Brown Long-Eared Bat Plecotus auritus, Barbastelle Barbastella barbastellus.	45.2	Felling of trees - loss of the habitat of the species, possible temporary decrease of the area or loss of feeding sites completely.	2	Limiting the number of trees projected for felling / cutting down.	1
Greater Mouse-Eared Bat Myotis myotis, Natterer's Bat Myotis nattereri, Serotine Eptesicus serotinus, Common Pipistrelle Pipistrellus pipistrellus, Soprano Pipistrelle Pipistrellus pygmaeus, Nathusius's Pipistrelle Pipistrellus nathusii, Common Noctule Nyctalus	45.2	Draining of wetlands - reduction of food base	2	Leaving the wetlands unchanged or restoring to their original state.	1

Habitat / species	WFS structure	Nature, scope and impact of the variant no. 1 (technical)	Assessment of the variant no. 1	Methods of minimisation (solutions according to the Variant no. 2 - environmental)	Assessment of the variant no. 2
noctula.					
Bechstein's Bat <i>Myotis bechsteinii</i> , Whiskered Bat <i>Myotis mystacinus</i> , Brandt's Bat <i>Myotis brandti</i> , Daubenton's Bat <i>Myotis daubentonii</i> , Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat <i>Myotis nattereri</i> , Common Pipistrelle <i>Pipistrellus pipistrellus</i> , Soprano Pipistrelle <i>Pipistrellus pygmaeus</i> , Nathusius's Pipistrelle <i>Pipistrellus nathusii</i> , Common Noctule <i>Nyctalus noctula</i> , Lesser Noctule <i>Nyctalus leisleri</i> , Brown Long-Eared Bat <i>Plecotus auritus</i> , Barbastelle <i>Barbastella barbastellus</i> .	45.5	Damage of trees at the conduct of building / construction works - loss of the habitat of species, possible temporary decrease of the area or loss of feeding sites completely.	2	Protection of trees during building / construction works.	0
Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat <i>Myotis nattereri</i> , Serotine <i>Eptesicus serotinus</i> , Common Pipistrelle <i>Pipistrellus pipistrellus</i> , Soprano Pipistrelle <i>Pipistrellus pygmaeus</i> , Nathusius's Pipistrelle <i>Pipistrellus nathusii</i> , Common Noctule <i>Nyctalus noctula</i> , Brown Long-Eared Bat <i>Plecotus auritus</i> .	46.1	Conducting building / construction works - startling (disturbance) of bats at the conduct of building / construction works, possible temporary decrease of the area of feeding places	1	None	1
Greater Mouse-Eared Bat <i>Myotis myotis</i> , Natterer's Bat <i>Myotis nattereri</i> , Daubenton's Bat <i>Myotis daubentonii</i> , Brown Long-Eared Bat <i>Plecotus auritus</i> , Barbastelle <i>Barbastella barbastellus</i> .	46.1	Demolition of the bunker - loss of the wintering area	2	Abandonment of demolition of the bunker.	0

Table. 8.3. Summary of interactions that require the implementation of compensation and how it is carried out

The table below presents the summary of compensation actions the need of implementation of which has been presented in the course of the conducted assessment of the environmental impact of the investment (the possibility of major negative impacts onto the species has been demonstrated). The compensation solutions refer to protected species of invertebrates, amphibians and reptiles beyond the Natura 2000 areas.

Kind (species)	WFS structure	Nature, scope and effects of impact	Compensation method
Amphibians			
Edible Frog, European Tree Frog, Smooth Newt, Common Frog, Common Toad.	<u>41.3</u> <u>40</u>	<p>Widening the channel bed at the bottom to the width of 50 m at the section from the weir at the inlet within the Strachocinskie bridges and below the bridges to 35 m till joining the Widawa River.</p> <p>There is a possibility of direct damage of four natural objects being the breeding site of amphibians (the natural object p-4 with its area of around 1,4 ha) and potential breeding sites of amphibians (the natural objects: p-39 with its area of around 0,4 ha, p-45 with its area of around 0,7 ha and p-46 with its area of around 0,9 ha).</p> <p>The total area of the damaged habitat objects of amphibians is equal to around 3,4 ha.</p>	<p>It is necessary to reconstruct four water reservoirs being the breeding site of amphibians with their area corresponding to the destroyed objects. The location of the reservoirs should be set at the stage of further projection of the investment with a specialist in the field of protection of amphibians. They can be located at the area of the mid-embankment of the Odra - Widawa channel. The reservoirs should have their parameters being suitable for the breeding of amphibians. The reservoirs should not be too deep. They should have 1 - 1,5 metre at their deepest place so that they get dry every several years. The reservoirs slopes should be profiled so that the banks tilt is equal to around 1x3 - 1x5 m both over the water surface as well as below the water surface. There should be shallows made at one side of every reservoir with the other river bank being planted with shrubs. The reservoirs should not be fished. The elimination of the natural objects no. 4, 39, 45 and 46 should be performed in autumn, then the widening of the channel up to 50 m should be made from 1 August to 1 November, in the period at which there will be no breeding units and tadpoles in the water reservoirs and still - at the same time - amphibians will not spend winter in the water reservoirs.</p> <p>It is projected to compensate the backwaters area within the mid-embankment of the Widawa River (precinct of Swojczyce, AM24, land plot no. 11, 7/2 or 11. The area of the land plot planned for usage is equal to 8,8864 ha).</p>
European green toad.	<u>44.12</u>	<p>Construction of the new embankment no. 44.11. The direct damage of the potential breeding site of amphibians - the natural object p-47 with its area of around 0,5 ha.</p>	<p>It is necessary to reconstruct the damaged backwaters area being the potential breeding place of amphibians within the area corresponding to the destroyed object. The location of the new backwaters area should be set at the stage of further projection of the investment with a specialist in the field of protection of amphibians. The reservoir should be shallow - up to half a metre deep - with the nature of backwaters area which dries every year. The elimination of the natural object should be conducted in Autumn, so after 1 August. Then for sure there will be no water within the backwaters area.</p> <p>It is projected to compensate the backwaters area within the mid-embankment of the Widawa River (precinct of Swojczyce, AM24, land plot no. 11, 7/2 or 11, owned by: University of Environmental and Life Sciences in Wroclaw. The area of the land plot planned for usage is equal to 8,8864 ha).</p>

Kind (species)	WFS structure	Nature, scope and effects of impact	Compensation method
Great Crested Newt, European Fire-bellied Toad, European Tree Frog, Smooth Newt, Common Frog, Edible Frog, Common Toad, Moor Frog,	<u>44.13</u>	The conduct of earth and building / construction works within the boundaries of the natural objects: p-56 with its area of around 0,25 and p-57 with its area of around 0,6 ha. The direct damage of potential places where amphibians occur. The total area of the damaged habitat objects of amphibians is equal to around 0,85 ha.	It is necessary to reconstruct water reservoirs being the breeding site of amphibians with their area corresponding to the destroyed objects. The locations of the reservoirs should be set at the stage of further projection of the investment with a specialist in the field of protection of amphibians. The reservoirs should have their parameters being suitable for the breeding of amphibians. The reservoirs should not be too deep. At the deepest place they should be 1 - 1,5 m deep so that they get dry every several years. The reservoirs slopes should be profiled so that the banks tilt is equal to around 1x3 - 1x5 m both over the water surface as well as below the water surface. There should be shallows made at one side of every reservoir with the other river bank being planted with shrubs. The reservoirs should not be fished. The elimination of the natural objects no. 10 and 50 should be performed in autumn so within the period from 1 August to 1 November, in the period at which there will be no breeding units and tadpoles in the water reservoirs and still - at the same time - amphibians will not spend winter in the water reservoirs. It is projected to compensate in the form of reservoirs within the mid-embankment of the Widawa River (precinct of Swojczyce, AM24, land plot no. 11, 7/2 or 11, owned by: University of Environmental and Life Sciences in Wroclaw. The area of the land plot planned for usage is equal to 8,8864 ha).
Great Crested Newt, European Tree Frog, Moor Frog, Smooth Newt, Common Frog, Edible Frog, Common Spade-foot, Common Toad.	<u>44.3</u>	Construction of the new embankment no. 44.3. The direct damage of the breeding place of amphibians - the natural object no. 10 and the potential breeding place of amphibians - the natural objects: p-50 with its area of around 0,6 ha and p-53 with its area of around 0,38 ha. The total area of the damaged habitat objects of amphibians is equal to around 0,98 ha.	It is necessary to reconstruct water reservoirs being the breeding site of amphibians with their area corresponding to the destroyed objects. The locations of the reservoirs should be set at the stage of further projection of the investment with a specialist in the field of protection of amphibians. The reservoirs should have their parameters being suitable for the breeding of amphibians. The reservoirs should not be too deep. At the deepest place they should be 1 - 1,5 m deep so that they get dry every several years. The reservoirs slopes should be profiled so that the banks tilt is equal to around 1x3 - 1x5 m both over the water surface as well as below the water surface. There should be shallows made at one side of every reservoir with the other river bank being planted with shrubs. The reservoirs should not be fished. The elimination of the natural objects no. 10 and 50 should be performed in autumn so within the period from 1 August to 1 November, in the period at which there will be no breeding units and tadpoles in the water reservoirs and still - at the same time - amphibians will not spend winter in the water reservoirs. It is projected to compensate in the form of reservoirs within the mid-embankment of the Widawa River (precinct of Swojczyce, AM24, land plot no. 11, 7/2 or 11, owned by: University of Environmental and Life Sciences in Wroclaw. The area of the land plot planned for usage is equal to 8,8864 ha).
European Fire-bellied Toad, Great Crested Newt, Edible Frog, Smooth Newt.	<u>45.3</u>	Construction of the new flood-protection embankment no. 45.3. The direct damage of the potential breeding site of amphibians - the natural object p-11 with its area of around 0,6 ha.	It is necessary to reconstruct a water reservoir being the breeding site of amphibians with its area corresponding to the destroyed object. The location of the reservoir should be set at the stage of further projection of the investment with a specialist in the field of protection of amphibians. The reservoir should have its parameters being suitable for the breeding of amphibians. The reservoir should not be too deep. At the deepest place it should be 1 - 1,5 m deep so that it gets dry every several years. The reservoirs slopes should be profiled so that the banks tilt is equal to around 1x3 - 1x5 m both over the water surface as well as below the water surface. There should be shallows made at one side of every reservoir with the other river bank being planted with shrubs. The reservoir should not be fished. The elimination of the natural object no. 11 should be performed in autumn so within the period from 1 August to 1 November, in the period at which there will be no breeding units and tadpoles in the water reservoir and still - at the same time - amphibians will not spend winter in the water reservoirs. It is projected to compensate in the form of reservoirs within the mid-embankment of the Widawa River (precinct of Swojczyce, AM24, land plot no. 11, 7/2 or 11, owned by: University of Environmental and Life Sciences in Wroclaw. The area of the land plot planned for usage is equal to 8,8864 ha).
Great Crested Newt, European Fire-bellied Toad, Common Spade-foot, European Tree Frog, Moor	<u>44.14</u>	Construction of the new flood-protection embankment no. 44.14. The direct damage of the potential breeding site of amphibians - the natural object p-58 with its area of around 0,75 ha.	It is necessary to reconstruct a water reservoir with its area corresponding to the destroyed object. The location of the reservoir should be set at the stage of further projection of the investment with a specialist in the field of protection of amphibians. The reservoir should have its parameters being suitable for the breeding of amphibians. The reservoir should not be too deep. At the deepest place it should be 1 - 1,5 m deep so that it gets dry every several years. The reservoirs slopes should be profiled so that the banks tilt is equal to around 1x3 - 1x5 m both over the water surface as well as below the water surface. There should be shallows made at one side of every reservoir with the other river bank

Kind (species)	WFS structure	Nature, scope and effects of impact	Compensation method
Frog, Smooth Newt, Common Toad and Edible Frog.			being planted with shrubs. The reservoir should not be fished. The elimination of the natural object no. 58 should be performed in autumn so within the period from 1 August to 1 November, in the period at which there will be no breeding units and tadpoles in the water reservoir and still - at the same time - amphibians will not spend winter in the water reservoir. It is projected to compensate in the form of reservoirs within the mid-embankment of the Widawa River (precinct of Swojczyce, AM24, land plot no. 11, 7/2 or 11, owned by: University of Environmental and Life Sciences in Wroclaw. The area of the land plot planned for usage is equal to 8,8864 ha).
Reptiles			
Grass Snake	<u>41.3</u> <u>40</u>	Widening the channel bed at the bottom to the width of 50 m at the section from the weir at the inlet within the Strachocinskie bridges and below the bridges to 35 m till joining the Widawa River. The direct damage of four natural objects being the potential place where reptiles occur (the following objects: g-40, g-41, g-55 and g-56).	The compensation of losses caused by the accomplishment of the object 41.3 made for amphibians will also compensate losses within the habitats used by reptiles (it relates to the same object). See Compensation for amphibians, object 41.3.
Grass Snake	<u>44.13</u>	The conduct of earth and building / construction works within the boundaries of the following objects: g-10 and g-8. The direct destruction of potential places where reptiles occur.	The compensation of losses caused by the accomplishment of the object 44.13 made for amphibians will also compensate losses within the habitats used by reptiles (it relates to the same object). See Compensation for amphibians, object 44.13.
Grass Snake	<u>44.3</u>	Construction of the new embankment no. 44.3 The direct damage of potential places where reptiles occur - the following natural objects: g-12, g-15 and g-16.	The compensation of losses caused by the accomplishment of the object 44.3 made for amphibians will also compensate losses within the habitats used by reptiles (it relates to the same object). See Compensation for amphibians, object 44.3.
Grass Snake, Sand Lizard, Slow Worm.	<u>45.3</u>	Construction of the new flood-protection embankment no. 45.3. The direct damage of a place where reptiles occur - the natural object g-21.	The compensation of losses caused by the accomplishment of the object 45.3 made for amphibians will also compensate losses within the habitats used by reptiles (it relates to the same object). See Compensation for amphibians, object 45.3.