

Regional Director
for Environmental Protection
in Gorzów Wielkopolski

WOOS-II.4233.3.2012.AN

Gorzów Wielkopolski, January 31st, 2013

DECISION
on environmental conditions

Under Article 71 Par. 2 Subpar. 2, Article 75 Par. 1 Subpar. 1 letter i), Article 82, Article 85 Par. 1 and Par. 2 Subpar. 1 of the Act of 3 October 2008 on providing information on the environment and its protection, public participation in environmental protection and environmental impact assessments (Journal of Laws of 2008, No 199, item 1227 as amended), in connection with Article 104 of the Act of 14 June 1960 – Administrative procedure code (Journal of Laws of 2000, No 98, item 1071 as amended), having considered the application submitted on June 8th, 2012 by Tadeusz Kowalewski, a representative of Biuro Projektów Inżynierii Środowiska i Melioracji "EKOPROJEKT" Sp. z o.o. in Zielona Góra, acting on behalf of the Lubuski Board of Amelioration and Hydraulic Structures in Zielona Góra, and having conducted the proceedings regarding environmental impact assessment,

I determine

the environmental conditions for the undertaking entitled:

"Nowa Sól – Pleszówek – stage II – construction of draining pumping station with improvements to existing embankments on Czarna Struga river, municipalities Nowa Sól and Otyń".

implemented by:

The Lubuskie Province
Ul. Podgórna 7
65-057 Zielona Góra

and simultaneously:

I. I determine:

1. The type and location of the undertaking:

The undertaking shall be implemented in the variant chosen by the investor, designated as Variant I, consisting in the construction, expansion and demolition of existing and construction of new flood defences for the city and municipality of Nowa Sól and the commune of Otyń, located within the Czarna Struga valley and left-bank part of the Odra valley.

The scope of the undertaking shall comprise:

- a) construction of left-bank flood embankment of Odra river on the river section at chainage km 432.5÷432.7, separating the Czarna Struga valley within the area of its estuary to Odra river, with related structures, i.e.:
 - an embankment culvert at the crossing of Czarna Struga river with the flood embankment;
 - a flood control pumping station (for waters from the Czarna Struga basin and percolation waters) with capacity approx. 10 m³/s, including:
 - ✓ a pumping station building, inlet channel, pumping system and discharge channel to Czarna Struga river,
 - ✓ cable power line, 2 km long, supplying electricity to the pumping station, current capacity approx. 520 kW current,
 - ✓ a transformer station of the pumping station.
 - an exit road from the embankment,
 - expansion of Czarna Struga river section within the area of its estuary to Odra.
- b) expansion of two-sided flood embankments of Czarna Struga river on the section from km 3.330 to km 7.618, with related structures:
 - embankment culverts,
 - exits and crossings of embankments
 - roads next to embankments.
- c) regulation of Czarna Struga river on the section from km 3.330 to km 7.618, consisting in:
 - expanding and shaping a trapezoid cross-section of the river bed;
 - adjusting the river bottom grade line, including execution of regulating structures.
 - strengthening the river bed
- d) reconstruction or protection of the city's technical infrastructure and sewage network, water pipelines, power lines and gas networks at the crossings with the river and designed flood protection facilities.

The investment site is located in two separate locations situated approx. 3 km from each other, in the Czarna Struga valley and left-bank part of the Odra valley.

The first investment location, comprising the terrains required for construction of embankments separating the Czarna Struga valley from Odra river and the flood control pumping station with cable supplying the pumping station in electric energy, is located on agricultural terrains within the area of Czarna Struga estuary to Odra and comprises lands within the area of Modrzyca in Otyń Commune and in a small part within precinct 1 of Nowa Sól.

The second investment site, comprising the terrains required for the regulation of Czarna

Struga river and expansion of flood embankments, comprises a swathe of land several dozen meter long and approx. 4.4 km long, which runs along Czarna Struga river on the section from km 3.330 to km 7.618. This area is located on the lands of Nowa Sól city (precincts 1, 2, 3 and 6) and on the lands within Lubieszów and Stary Staw in the Nowa Sól Municipality. To km 6.4 Czarna Struga flows through or in immediate vicinity of developed areas, industrial areas and allotment gardens within the Nowa Sól city. Forest and agricultural lands adhere to the investment site upstream of 6.4 km of the river.

Within the Nowa Sól municipality, the investment site is located on area of 12.2 ha, within the Nowa Sól commune – on 7.5 ha and within the Otyń commune – on 12.0 ha.

2. Area use conditions during undertaking implementation and exploitation:

- 2.1. Construction works on acoustically protected areas shall be carried out only during daytime (from 6:00 am to 10:00 pm).
- 2.2. It is necessary to ensure economic use of the land and minimal transformation of its surface, and after completion of works under the investment project the site shall be cleaned and restored to its original state, enabling its usage in accordance with its previous purpose.
- 2.3. During construction it is necessary to use, most of all, the existing roads located nearby or on the embankment, and any necessary new road shall be located outside the habitats being the subjects of conservation of Natura 2000 sites, if impossible – e.g. within the boundaries of plots 603/2 and 609/1 precinct Modrzyca commune Otyń – they shall be located in immediate vicinity of the works being carried out, occupying only the necessary minimal surface area.
- 2.4. Terrains of construction site backyard, storage of soil and building materials, manoeuvring sites and equipment bases shall be located:
 - a) outside the habitats being the subjects of conservation of Natura 2000 sites and sites of protected plants distribution,
 - b) if practicable, in hardened and sealed areas and equipped with sorbents enabling quick liquidation of any possible fuel leak,
 - c) as far from acoustically protected areas as possible.
- 2.5. Any necessary technical and organisational measures shall be applied to keep access roads clean and to reduce emission of dusts when transporting building materials and carrying out construction works.
- 2.6. Equipment used for works has to be fully operational and meet the requirements authorising to use it; type and technical conditions of equipment used during construction works has to guarantee protection of soil, protection of surface and ground waters against contamination, protection against emission of dust or gases to the air, and protection against emission of noise to the environment.

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- 2.7. It is necessary to maximally reduce idle running of internal combustion engines of machines and vehicles and the speed of vehicles within the construction area; the principle of turning off machines and devices during allowed breaks has to be observed.
 - 2.8. No repairs or service of construction equipment, such as change of oil, fluids, etc., shall be performed on the area covered by the planned investment.
 - 2.9. Wastes produced when implementing the undertaking shall be segregated and stored in containers or spots intended for that purpose and gradually disposed of by authorised entities.
 - 2.10. Domestic wastewater from the construction site backyard shall be stored in tight containers and transported to the nearest wastewater treatment plant.
 - 2.11. Clearance of trees and shrubs shall be maximally reduced, whereas other trees not intended for clearance which grow within the construction site shall be protected against mechanical damages and possible drying of their roots.
 - 2.12. Clearance of trees and shrubs shall be carried out outside the nesting season.
 - 2.13. Embankments and other flood defences shall be maintained regularly and on up-to-date basis.

III. Environmental protection requirements which have to be considered in the documentation required for issuance of decision on investment project implementation permit, within the meaning of the Act of 8 July 2010 on special rules concerning the preparation and implementation of investments related to flood defences:

- 3.1. Embankments shall be constructed using mineral materials, alternatively geosynthetics, which are not the source of emission of harmful substances to the soil and water environment.
- 3.2. Required reinforcements of river banks shall be executed using plant materials, fascine, stone and concrete pre-fabricated elements, avoiding – whenever possible - protections from steel meshes, diversifying reinforcements and thus enabling the creation of mosaic of microhabitats.
- 3.3. Rapid shall be designed and executed in such a way, so that water would not loose contact with the ground, in arrangement enabling various speed of flow in order to minimise the effect of barrier for migration of hydrobionts.
- 3.4. Embankment culverts shall be designed and executed with the smallest possible narrowing of hydraulic section, limiting the water speed increase in the culvert and without raising the culvert bottom above the river bottom in order to minimise the effect of barrier for migration of hydrobionts.

II. I do not impose the obligation to carry out:

an Environmental Impact Assessment and to conduct the proceedings regarding cross-border impact on the environment under the proceedings for issuance of decision on investment project implementation permit, within the meaning of the Act of 8 July 2010 on special rules concerning the preparation and implementation of investments related to flood defences.

III. I determine that the undertaking characteristics constitutes an appendix to this decision and is an integral part hereof.

GROUNDNS

On the 8th of June 2012 Mr. Tadeusz Kowalewski, a representative of Biuro Projektów Inżynierii Środowiska i Melioracji "EKOPROJEKT" Sp. z o.o. in Zielona Góra, acting on behalf of the Lubuskie Province – the Lubuski Board of Amelioration and Hydraulic Structures in Zielona Góra, submitted to the Regional Director for Environmental protection in Gorzów Wielkopolski an application for issuance of decision on environmental conditions for undertaking entitled: "Nowa Sól – Pleszówek – stage II – construction of draining pumping station with improvements to existing embankments on Czarna Struga river, municipalities Nowa Sól and Otyń".

The applicant enclosed the following documents to the application:

1. Project information card along with its electronic version;
2. Power of attorney to act on behalf of the investor;
3. Excerpts from the land register;
4. Copy of the registration map;
5. Reconnaissance map;
6. Extracts from the local spatial development plans.

The planned undertaking comprises the reconstruction, expansion and demolition of existing and construction of new flood defences for the city and municipality of Nowa Sól and Otyń commune, located in the valley of Czarna Struga river and left-bank part of Odra valley, in accordance with the description presented in item I.1. hereof.

Pursuant to Article 75 Par. 1 Subpar. 1 letter i) of the Act of 3 October 2008 on providing information on the environment and its protection, public participation in environmental protection and environmental impact assessments (Journal of Laws of 2008, No 199, item 1227 as amended), the authority competent to issue decisions on environmental conditions is the Regional Director for Environmental Protection in Gorzów Wielkopolski.

The undertaking in question, pursuant to §3 Par. 1 Subpar. 65 of the Regulation of the Council of Ministers of November 9th, 2010 on undertakings which may significantly affect the environment (Journal of Laws of 2010, No 213, item 1397) and pursuant to Article 59 Par. 1 Subpar. 2 of a/m Act on providing information on the environment and its protection, public participation in environmental protection and environmental impact assessments, is an undertaking that might have a potential significant impact on the environment.

Pursuant to Article 71 Par. 2 Subpar. 2 of the Act on providing information on the environment and its protection, public participation in environmental protection and environmental impact assessments, the planned undertaking, which might have a potential significant impact on the environment, can be implemented only after obtainment of a decision on environmental conditions, whereas its issuance takes place before obtainment of the decisions, referred to in Article 72 Par. 1 and before submitting the applications, referred to in Article 72 Par. 1a. In case of smaller undertakings, the decision on investment project implementation permit, within the meaning of the Act of 8 July 2010 on special rules concerning the preparation and implementation of investments related to flood defences (Journal of laws of 2010, No 143, item 963 as amended) and the decision on water permit, within the meaning of the Act of 18 July 2001 – Water law (i.e. of 2012, item 145 as amended) shall be said decision.

In accordance with the requirements set forth in Article 17 Par. 3 of a/m Act on special rules concerning implementation of investments, the General Director for Environmental Protection was informed, by the letter of June 19th, 2012 ref.: WOOŚ-II.4233.3.2012.AN, about impact of the application on issuance of decision on environmental conditions for the planned undertaking.

The application for issuance of the decision on environmental conditions and the project information card was entered in publicly available data list, which is kept on the basis of Article 21 Par. 1 of the Act on providing information on the environment and its protection, public participation in environmental protection and environmental impact assessments, under numbers 552/2012 and 567/2012.

The parties to the proceedings were informed, in accordance with Article 61 §4 of the Act – Administrative procedure code, about conducted administrative proceedings and about the possibility to familiarise with the documents in the case by Announcement of 19 June 2012 ref.: WOOŚ-II.4233.3.2012.AN, placed on the notice board and posted on the website of the Regional Directorate for Environmental Protection in Gorzów Wielkopolski – www.gorzow.rdos.gov.pl (Public Information Bulletin), and also on the notice board of the City Hall in Nowa Sól, the Nowa Sól Municipality Office and the Commune Office of Otyń. Since the number of parties to these proceedings is more than 20, pursuant to Article 74 Par. 3 of the aforementioned Act on providing information on the environment and its

protection, public participation in environmental protection and environmental impact assessments the provisions of Article 49 of the Administrative procedure code shall apply.

The planned investment is an undertaking which might have a potential significant impact on the environment, for which the obligation to carry out an environmental impact assessment can be imposed on the basis of Article 63 Par. 1. In the course of conducted proceedings, in view of difficult to foresee impacts of the planned investment on the environment, in particular on natural environment, it was determined that there was a justified need to carry out an environmental impact assessment of the planned undertaking basing on reliably elaborated environmental impact report.

Taking into account the above, the obligation to carry out an environmental impact assessment was imposed, by the decision of June 26th, 2012 ref.: WOOŚ-II.4233.3.2012.AN, before issuing this decision and detailed scope of environmental impact report was determined. The parties to the proceedings were informed about the aforementioned obligation by Announcement of 26 June 2012, placed on the notice board and posted on the website of the Regional Directorate for Environmental Protection in Gorzów Wielkopolski – www.gorzow.rdos.gov.pl (Public Information Bulletin), and also on the notice board of the City Hall in Nowa Sól, the Nowa Sól Municipality Office and the Commune Office of Otyń.

The information about issuance of the decision was entered in publicly available data list, which is kept on the basis of Article 21 Par. 1 of the Act on providing information on the environment and its protection, public participation in environmental protection and environmental impact assessments, under number 588/2012.

On the 26th of July 2012, by the decision ref.: WOOŚ-II.4233.3.2012.AN, acting on the basis of Article 63 Par. 5 of the Act on providing information on the environment and its protection, public participation in environmental protection and environmental impact assessments, the proceedings regarding issuance of decisions on environmental conditions were suspended by the time of submitting the environmental impact report. The proceedings, after cessation of the grounds for suspension, were re-opened by the decision of October 15th, 2012 ref.: WOOŚ-II.4233.3.2012.AN. The parties to the proceedings were informed about issuance of aforementioned decisions by Announcements of 26 June 2012 and of 15 October 2012, placed on the notice board and posted on the website of the Regional Directorate for Environmental Protection in Gorzów Wielkopolski – www.gorzow.rdos.gov.pl (Public Information Bulletin), and also on the notice board of the City Hall in Nowa Sól, the Nowa Sól Municipality Office and the Commune Office of Otyń.

The submitted environmental impact report, prepared by BPIŚiM “Ekoprojekt” Sp. z o.o. in Zielona Góra in October 2012, after supplementing by the applicant’s letter of November 13th, 2012, in terms of structure meets the requirements set forth in Article 66 of the Act on providing information on the environment and its protection, public participation in

environmental protection and environmental impact assessments. The environmental impact report contained analyses and determined impacts and potential environmental hazards related to implementation and exploitation of the undertaking. The information contained in the aforementioned documentation was the basis for determining the conditions of implementation and exploitation of the investment project which ensure protection of the environment.

The information about environmental impact report was entered in publicly available data list, which is kept on the basis of Article 21 Par. 1 of the Act on providing information on the environment and its protection, public participation in environmental protection and environmental impact assessments, under numbers 1058/2012 and 1126/2012.

In connection with imposing the obligation to carry out an environmental impact assessment for the undertaking and preparing the environmental impact report, the information about the application and about the possibility to submit requests and remarks in the seat of the present authority within 21 days was made public by Announcement of November 15th, 2012 placed on the notice board and posted on the website of the Regional Directorate for Environmental Protection in Gorzów Wielkopolski – www.gorzow.rdos.gov.pl (Public Information Bulletin), and also on the notice board of the City Hall in Nowa Sól, the Nowa Sól Municipality Office and the Commune Office of Otyń. No remarks or requests were filed in the proceeding with participation of the public.

In the course of conducted proceedings it was determined as follows:

The considered terrain and flood protection facilities are located in the left-bank part of the Odra valley, on the section from the docking area in Nowa Sól to the estuary of Czarna Struga river. The protected area comprises developed areas in northern part of Nowa Sól (mainly the Pleszówek quarter), developed areas of Otyń, Modrzyca and Konradów, as well as agricultural lands located on the Bobrowniki polder and within the village. The surface area of the site of potential and direct flood risk is 2930 ha.

Existing flood embankments: left-bank embankment of Odra and Czarna Struga do not meet standard requirements as regards: raising the crest over computational waters, having proper coefficient of stability, contacts to high terrains, ensuring adequate capacity of the valley for the transfer of flood waters.

Reconstruction of the analysed part of the Nowa Sól flood protection system is the next stage of modernisation thereof and the investor prepared for implementation the first stage of the undertaking, for which on the 16th of February 2011 the Regional Director for Environmental Protection in Gorzów Wielkopolski issued the decision on environmental conditions, ref.: WOOŚ-II.4233.2.2011.TK.

The submitted environmental impact report contained an analysis of resignation from

implementation of the planned undertaking and two variants for the implementation thereof.

Variant I, proposed by the investor, consisting in changing the method of protecting the Pleszówek quarter area against flood by constructing a flood embankment separating the Czarna Struga valley, so as to prevent backwater intrusion of Odra waters into the valley of Czarna Struga river and by building a pumping station transferring Czarna Struga waters to Odra.

Variant II of the planned undertaking, which comprises the reconstruction of existing flood embankments by raising them and expanding transversely along the existing routes. The flood protection method remains the same i.e. Odra waters can intrude the Czarna Struga valley in the form of backwater, and the terrains in the valley of Czarna Struga are protected by two-sided backwater embankments.

As it was documented in the report, variant I – proposed by the investor, is the most favourable for the environment. This choice resulted, most importantly, from social dimension of the planned undertaking, i.e. improvement of flood protection for areas which are in majority developed, as compared to more favourable impact on natural environment of this variant. Therefore, the present authority did not indicate other variant for implementation of the investment by the investor. The scope of works planned during implementation of the undertaking in the variant chosen by the investor, as well as the place thereof, are defined in item I.1 hereof.

According to the report, the undertaking in question shall not be connected with any risk of impact outside borders of our country. Due to local character of impact of the planned undertaking, it shall not be necessary to conduct the proceedings concerning cross-border impact on the environment.

The investment shall be implemented in two separate locations situated approx. 3 km from each other, in the Czarna Struga valley and left-bank part of the Odra valley, in the estuary of Czarna Struga. This information is significant from the perspective of nature conservation, because the estuary of Czarna Struga to Odra is located in borderline of two sites of Natura 2000 network: Nowosolska Dolina Odry [*Odra Valley in Nowa Sól*] PLH080014 (SCI) and Dolina Środkowej Odry [*Middle Odra Valley*] PLB080004. Here, within the scope of the construction of left-bank flood embankment of Odra river, separating also the valley of Czarna Struga, it is planned to construct i.a.: infrastructure of the flood control pumping station, an embankment culvert and exit from embankment, and to expand a section of Czarna Struga river. The above measures, except the last one, shall be implemented outside borderlines of Natura 2000 sites but in immediate vicinity thereof. The expansion of Czarna Struga river section, which shall comprise i.a. the construction of pumping station discharge channel and the regulation of Czarna Struga section within the area of its mouth, shall be

performed within boundaries of the two above-mentioned Natura 2000 sites.

The purpose of each of the above measures is motivated by flood protection and does not result from the needs to protect nature of the said Natura 2000 sites.

According to the Standard Data Form of Natura 2000 Birds Special Area of Conservation Nowosolska Dolina Odry PLH080014, the main risks for the area are: clearance of riparian forests and shrubland and regulation of the river. The same source identifies threats for the Birds Special Area of Conservation Dolina Środkowej Odry PLB080004: meadow-pasture economy and clearance of riparian forests. The undertaking belongs to none of aforementioned hazard categories, and the regulation of Czarna Struga, i.e. displacing and shaping the river and building a discharge channel of the pumping station, is not directly related to regulation of the river. Only the exploitation stage of the undertaking, i.e. separation of extreme flood waters of Odra river from the Czarna Struga valley, can be considered as such a regulation. It is planned at the purpose of preventing backwater from rising and intruding, thus preventing part of the Nowa Sól city from being flooded. This effect shall be short-term and its duration shall be limited by the time of high levels and flood phenomena of the Odra river. Such stages last from a dozen or so to several dozen days during a year. It should be added that the first stage of the undertaking comprises the demolition of the old embankment and construction of a new one, which shall be moved away from Odra, which shall provide the storage surface that so far was inactive. In such an approach, that is the list of general hazards and the analysis of details of the undertaking, no hazard was identified in relation to the river regulation for the subjects of conservation of Nowosolska Dolina Odry PLH080014 and Dolina Środkowej Odry PLB080004.

The construction works connected with construction of the pumping station and its infrastructure, and most importantly the expansion of Czarna Struga river section, shall directly affect the Natura 2000 sites, however in limited scope on the subjects of conservation thereof. 7 types of natural habitats protected by the Natura 2000 programme were identified, during special environmental compensation, carried out for the purposes of environmental impact report, in the zone of impact and in vicinity of the planned undertaking, namely: natural eutrophic lakes with *Nymphaeion* and *Potamion*-type vegetation, riparian tall herb fringe communities, alluvial meadows, extensively used lowland hay meadows, *Galio-Carpinetum* oak-hornbeam forests, alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*), riparian mixed forests of *Quercus robur*, *Ulmus laevis* and *Ulmus minor*, *Fraxinus excelsior* or *Fraxinus angustifolia*, along the great rivers (*Ulmenion minoris*). The following habitats are situated within the plots on which the undertaking shall be implemented and which were included in the boundaries of Natura 2000 site Nowosolska Dolina Odry PLH080014: Riparian mixed forests of *Quercus robur*, *Ulmus laevis* and *Ulmus minor*, *Fraxinus excelsior* or *Fraxinus angustifolia*, along the great rivers (*Ulmenion minoris*), Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*), alluvial meadows and

riparian tall herb fringe communities. Construction works in this part of Natura 2000 site, that is the construction of pumping station discharge channel and the regulation of Czarna Struga estuary section, comprise only the last two habitats: alluvial meadows of river valleys – code 6440-1 and riparian tall herb fringe communities – code 6430-3 (*Convolvuletalia sepium*). Both habitats are the subjects of conservation of this area and occupy respectively 5% (approx. 302 ha) and 1% (approx. 60 ha) of Natura 2000 site Nowosolska Dolina Odry PLH080014. Alluvial meadows within plots No 603/2 and 609/1, precinct Modrzyca commune Otyń, occupy 3.23 ha. With the Natura 2000 site their surface area is approx. 1 ha. The construction of pumping station discharge channel and the regulation of Czarna Struga estuary section shall result in permanent destruction of alluvial meadow on surface area of approx. 0.31 ha. There is no rational alternative for that destruction and it is unavoidable. The area of site occupation for construction purposes, which is foreseen for that area, may total to approx. 0.6 ha. Reinstatement of the land occupied for construction purposes, maintenance of present ground and water conditions shall be conducive to re-colonisation of the land by alluvial meadow vegetation species. In connection with the occupation, and destruction of part of the habitat, a meta-plantation of rare species, including mouse garlic, was considered. This species grows in large quantity on surface area of approx. 0.2 ha on plot No 603/2 and 609/1 about 20 m from the designed pumping station channel. It is likely that the construction site shall not be located on this area at all. This species is not the subject of conservation within the Natura 2000 site, is not covered by the protection of species either. Therefore, there are no grounds to apply measures related to legal protection of the species. In addition, there are no prerequisite for the application of environmental compensation, within the meaning of the Act – Environmental protection law on account of environmental imbalance. The issue that was found primary for alluvial meadows – code 6440-1 was the issue related to permanent destruction of about 0.3 ha of their area. An impoverished, in floristic terms, form of alluvial meadow was identified in the place of destruction, the structure of which, from the point of view of phytosociology, is disturbed by improper application of agricultural activities. The said area constitutes 0.1% of that habitat recognised within the Natura 2000 site Nowosolska Dolina Odry PLH080014. It is not the area, the loss of which will result in improper preservation of that anthropogenically determined habitat; it is not a place which is necessary to preserve other similar habitats within the area, either. The destruction in question shall not have a significant adverse influence on the objectives of Natura 2000 site conservation because it shall not deteriorate the state of conservation of natural habitats or habitats of plant and animal species for protection of which the Natura 2000 site was established. There are no prerequisites for application of environmental compensation determined by Article 34 of the Act on Nature conservation and Article 3 Par.8 of the Environmental protection law on account of environmental imbalance. In addition, there are no grounds to impose on the investor the obligation to carry out an environmental compensation due to incorrect phytosociological

structure of the community growing on plots 603/2 and 609/1.

The construction of pumping station discharge channel and the regulation of Czarna Struga estuary section within the Natura 2000 site shall contribute to permanent destruction of fragment of habitat riparian tall herb fringe communities – code 6430-3 (*Convolvuletalia sepium*). Area to be occupied for the purposes of construction site, on plots No 603/2, 609/1 and 613, precinct Modrzyca commune Otyń, shall comprise approx. 0.02 ha. This habitat is in the form of narrow swathes in vicinity of the river, same as on most of the Czarna Struga banks in both parts of the planned undertaking. The most representative community of this habitat grows on the Odra river bank outside the range of impact of the undertaking. Reinstatement of the land occupied for construction purposes and maintenance of present ground and water conditions shall be conducive to regeneration of the community. The more that it is expansive and common above the place where works are carried out. It is likely that the habitat shall be formed spontaneously also in the place of former Czarna Struga river bed on area larger than currently. The surface permanently occupied by Czarna Struga riverbed sections in the area of its estuary and the pumping station discharge channel shall occupy approx. 0.01 ha of the riparian tall herb fringe communities habitat. It is 0.01% of the habitat area being recognised within the Nowosolska Dolina Odry PLH080014. There is no alternative for that destruction. It is not the area, the loss of which will result in improper preservation of that habitat; it is not a place which is necessary to preserve other similar habitats within the area, either. The destruction in question shall not have a significant adverse influence on the objectives of Natura 2000 site conservation because it shall not deteriorate the state of conservation of natural habitats or habitats of plant and animal species for protection of which the Natura 2000 site was established. There are no prerequisites for application of environmental compensation determined by Article 34 of the Act on Nature conservation and Article 3 Par.8 of the Environmental protection law on account of environmental imbalance.

The subjects of conservation of special area of conservation of Natura 2000 network PLH080014 Nowosolska Dolina Odry are also: Eurasian otter *Lutra lutra*, crested newt *Triturus cristatus*, fire-bellied toad *Bombina orientalis*, Aral asp *Aspius aspius*, mud loach *Misgurnus fossilis*, Large copper *Lycaena dispar*. Despite the fact that some species, such as large copper, crested newt and other, were not identified within boundaries of the undertaking and the Natura 2000 site, it was stated that the undertaking might have a potential impact on each of above-mentioned species because their potential habitats are located within the range of impact of the undertaking: namely wetland. It should be emphasized that no habitat, pursuant to Article 5 par. 18 of the Act on Nature conservation, of the aforementioned species was identified within the range of impact, in particular their area of mating or breeding. Impact of the undertaking shall mainly result from destruction of potential habitats and potential depletion of life space. In both cases the forecast refers to possible events, since it was not documented that the area of construction works formed

the habitat and life space of those animals, not to mention the importance of that habitat for proper protection of the species. However, applying the principle of cautiousness, for such a presumption of events, the fact forejudging of the determination of factual impact on species, is that the undertaking shall be limited in time and space and its effects, also in the operational phase, shall not change the present geographical and ecological conditions of the area. Destruction of potential aquatic habitats shall result in formation of new ones, in this case even with larger acreage. Destruction of alluvial meadow, on surface area of 0.3 ha, which potentially could be the habitat of large copper, is irrelevant in area with more than 700 ha of potential habitats in the form of wet meadows, in accordance with the Standard Data Form. Startling of animals, which cannot be avoided at the construction stage, shall be limited in time and even extremely diversified during a day: from presence of people to their absence. Any migration barrier shall be created during construction and exploitation for the said protected species, and any potential migration barrier, e.g. while shaping and constructing the river bed of Czarna Struga, shall not significantly affect their population.

In case of subjects of conservation of Natura 2000 site Dolina Środkowej Odry PLB0880004, that is birds and their habitats, it was not documented that the area of impact of the undertaking was an important, for proper state of preservation, space, the occupation of which, limited in time, would be a significant adverse impact, for conservation purposes. Occupation of the site for duration of the construction, and destruction of fragment of alluvial meadow and riparian tall herb fringe communities habitat (in total: 0.31 ha) – from the perspective of conservation of potential birds habitat – in relation to size of the area (33677.8 ha) and richness of birds special conservation area habitats is irrelevant. Potential startling of birds, which cannot be avoided at the construction stage, shall be limited in time and space, as mentioned above – extremely diversified even during a day: from presence of people to their absence. There is no argument for the condition of limiting the works performance to the period outside birds nesting season.

To summarise, the undertaking shall not have any influence on integrity of Natura 2000 network sites and their cohesion.

As mentioned above, the second area of the undertaking is located outside environmental protection areas. In this case, in km 3.330 to km 7.618 of Czarna Struga river, it is planned to modernise the system of flood control facilities, to regulate and strengthen the river bed and to adapt the city's technical infrastructure. Impacts of the undertaking on the nature were analysed on this terrain, in particular the protected species, considering its local regional and national value and weight. 7 types of natural habitats protected by the Natura 2000 programme were identified within the area of in immediate vicinity of Czarna Struga river bed and valley. The said habitats are subject to conservation within the boundaries of Nowosolska Dolina Odry PLH080014 and Dolina Środkowej Odry PLB080004. Outside the boundaries of Natura 2000 area, those habitats can be protected from the perspective of proper state of conservation of habitats and species of Natura 2000 areas. When analysing

impacts of the undertaking it was not identified that its impact on abovementioned habitats located outside the Natura 2000 area had a direct impact on the subjects of conservation of Nowosolska Dolina Odry PLH080014 and Dolina Śródkowej Odry PLB080004. Natural eutrophic lakes with *Nymphaeion* and *Potamion*-type vegetation along the entire section of impacts of the construction and exploitation of the undertaking shall be preserved. Within the regulation of Czarna Struga river bed, the works shall comprise the riparian tall herb fringe communities. These communities also occur in the lowest part of flood embankments. The works in the river bed and on the embankments shall contribute to their destruction. Since existence of the said communities on the area in question depends on humid, periodically drying ground, it can be forecasted that preserved periodical freshets and flooding of Czarna Struga and numerous refuges of species upstream of the river shall contribute to fast regeneration of the community. Ash-alder forest *Fraxino-Alnetum* shall be completely destroyed, a poorly formed swathe of which was identified on flood embankments. Its structure is disturbed, close to shrubland habitats, foreign species are numerous here. Any presence of rare and protected plant species were identified here. Destruction of this swathe occurred within the flood protection area shall not affect the subjects of Natura 2000 area of conservation Nowosolska Dolina Odry PLH080014. It shall not occasion an environmental imbalance either. No protected plant species were identified on Czarna Struga section at chainage km 3.3-7.62. Within the area of impact of the undertaking exploitation, that is active flood protection, 4 species of protected invertebrates were identified. None of identified species and none of the habitats of these species shall be destroyed. 6 species of protected amphibians were identified on the designed area of works performance and within the range of impact of the undertaking exploitation. A part of their habitats, i.e. Czarna Struga banks, are likely to be damaged during works. The fact that is important from the perspective of the protection of species is that neither their habitat nor refuges shall be destroyed. After completion of construction works the banks shall still function as part of the habitat of amphibians. No mating and breeding habitat of amphibians which could be destroyed at that stage of the undertaking was identified within the area of construction works. Considering the presumption of the most adverse scenario, i.e. unintentional startling and unintentional killing of individual amphibians, resulting from implementation of construction works and migration abilities of animals, it should be mentioned that their populations, identified here, constitute fractions of a percent of the national population, and due to very small surface area this area is not strategic for preservation of any species.

8 species of mammals which are subject to the protection of species were identified on the area of the planned investment project and its immediate vicinity. In case of bats (common noctule *Nyctalus noctula*, Daubenton's bat *Myotis daubentonii*, brown long-eared bat *Plecotus auritus*, grey long-eared bat *Plecotus austriacus*), hunting area was localised mainly along an open channel of Czarna Struga and single trees aggregations. Sites of stoat

and squirrel were noted outside the area of direct impact of the undertaking. The same in case of sites of otter and beaver. Especially as regards the last two species their potential habitats within the project site cannot be excluded. In case of otter and beaver, a temporary destruction of their potential habitats shall not occasion the destruction of habitats and refuges of these protected species. A presumed unintentional startling and depletion of life space limited in time, resulting from implementation of construction works shall not have a significant impact on populations of protected species. After completion of construction works the habitat conditions shall remain intact. Removal of trees shall not have an adverse impact on bats; it was not identified that any of the trees growing on the area of the planned investment project was a place of their permanent stay. Their linear ecological corridor shall be preserved, and the embankment in the Czarna Struga estuary shall not be a barrier for migration of these animals.

The presence of 73 species of breeding birds or probably breeding birds and 15 species of birds flying here for feeding purposes was identified within the investment project area. In case of birds of aquatic habitats and wetland habitats, the impact shall mainly refer to the construction period. It shall be unintentional startling resulting from commencement of construction works. Once they are completed, the stress factor shall disappear and any damaged habitats of birds shall regenerate. In case of birds for which trees and shrubs, tree and shrub stands, constitute an important part of their living habitats, the impact shall be irreversible. Presence of trees and shrubs on the embankments and in the embanked area is in conflict with the practise of effective flood protection. It is necessary to remove approx. 1850 pieces of trees and shrubs on surface area of 9.5 thousand m². After completion of the works connected with modernisation of embankments, i.a. the clearance of trees and shrubs, re-colonisation of that area by phanerophytes shall be restrained, and it shall be impossible for the present bird habitats to recreate. A part of the bird habitat formed by trees and shrubs shall be destroyed. Currently they are sites of singing and nesting of i.a. nightingales *Luscinia sp.*, Locustellidae *Locustella sp.*, Sylviidae *Sylvia Sp.*, Phylloscopidae *Phylloscopus sp.*, Emberizidae *Emberiza sp.*, red-backed shrike etc. There is no alternative for this destruction, significant from the perspective of the law on the protection of species, occasioned by assurance of protection of people and their property against flood. The bird populations nesting on the Czarna Struga section, which are threatened by possible impact of negative factors, constitute fractions of a percent of domestic populations and much less than 1% of the subjects of conservation of neighbouring Natura 2000 area Dolina Śródkowej Odry. In order to reduce losses in populations, it was suggested to carry out clearance outside bird breeding season. The factor of unintentional startling shall disappear after completion of construction works. In connection with expansion of Czarna Struga river section and exploitation of the pumping station, there shall not occur any barrier for migration of hydrobionts. In case of hydrological forecasts of short-term freshets in the downstream zone of Odra flood stage, it shall be possible to leave an open Odra-Czarna

Struga system and to let the Odra flood waters into the Czarna Struga valley, as minor water overflows on agricultural areas (meadows) in the Czarna Struga valley do not threaten developed areas with a permeation. A short-term migration barrier shall occur only at high levels and flood phenomena of the Odra river dangerous for people. Frequency and range of flooding maintaining hydrogenic habitats within the river valleys shall not change. There shall be no impact on the related species, in particular the protected species of flora and fauna. The valley terrains shall be flooded with Czarna Struga or Odra waters with the same frequency.

The second area of works comprises the reconstruction of Czarna Struga river bed and the expansion of flood embankments. The designed river bed reconstruction shall consist in minor adjustment of river bed grade line, expanding and shaping a trapezoid section and restoration of plant, fascine, concrete and stone reinforcements of Czarna Struga river bed. It is also planned to build a stone rapid replacing the damaged barrage. These works and their effects shall not contribute to creation of barrier for migration of hydrobionts. The planned river regulation shall not contribute to depletion of embanked area. The existing oxbow lakes shall be preserved and shall not lose contact with flood waters.

As it was documented in submitted environmental impact report, in particular in the supplementation thereto, the planned undertaking shall not contribute to failing to achieve the environmental targets set forth in the Odra river basin district management plan.

The expansion of flood embankments and the regulation of Czarna Struga river does not constitute a significant change of water conditions within the investment project area. The change of water conditions resulting from the construction of an embankment separating the Czarna Struga valley and the pumping station for flood waters refers to the possibility to control the backwater intrusion of Odra flood waters into the Czarna Struga valley. The Czarna Struga waters shall be drained gravitationally – through an embankment culvert (during low and medium water levels in Odra) and mechanically – with the aid of the pumping station (during high levels in Odra). The separation of the Czarna Struga valley from Odra waters shall be periodical, only for duration of high levels and extreme floods in the Odra river. The valley terrains shall be flooded with Czarna Struga or Odra waters with the frequency similar to the present one. The construction or expansion of the river embankments on the section from km 3.33 to km 7.618 shall introduce changes as regards impact on the level of high waters in the Czarna Struga river bed due to the limitation by embankments the overflowing of waters onto the terrains adjacent to the river.

The pumping station construction, the expansion of the embankments in question or expansion of Czarna Struga river bed shall not carry the emission of any harmful substances to the water and ground environment. In connection with the foregoing, the planned undertaking shall not occasion any increase or deterioration of physical and chemical

factors, as well as biological and hydromorphological ones, i.e. it shall not result in deterioration of water quality in Odra and Czarna Struga. The investment shall not affect the chemistry of ground waters, either.

The undertaking in question is not connected at all with intake or change in feeding ground waters.

As it follows from the presented documentation, implementation of the undertaking shall consist most of all in carrying out concrete works and general construction works (pumping station) and earthworks (flood embankments), including i.a. constructing embankments, executing excavations, displacing soil and also in carrying out concrete works and driving sheet piles. The aforementioned works shall be performed using various means of transport, equipment for concrete works and such heavy equipment for earthworks as: bulldozer, roller, loader and compacting equipment.

Substances and energy (noise, gases, dusts, wastes, oil derivatives, etc.) shall be emitted to the environment only while performing construction works. After completion the investment shall not be the source of emission of any substances and energy to the environment, except for the pumping station, however its work shall not cause exceeding of environmental standards, outside the area to which the investor has legal title.

In order to eliminate or considerably reduce adverse impact of the undertaking on the environment during its implementation, it is necessary to properly locate and organise the technical base for building brigades. Additionally, it is recommended to seal the ground in the parking place of building machinery and vehicles, storage yards for materials and substances which may contaminate soil and ground water (condition set forth in item I.2.4 hereof) and it is prohibited to carry out repairs and service of building equipment within the area of project implementation (condition set forth in item I.2.8 hereof). It is also necessary to take into consideration the principle of minimisation of land occupancy and transformation of its surface while localising and organising the construction site and its backyard. In addition, any land transformed as a result of performed construction works shall be reinstated (condition set forth in item I.2.2 hereof).

Domestic wastewater management method on the construction site is determined in item I.2.10 hereof, according to which mobile toilets should be mounted within the construction site backyard, from which collected domestic wastewater shall be periodically disposed of to the nearest wastewater treatment plant.

The necessity to protect sensitive ground and water environment gives rise to the obligation to manage wastes in such a way, so as to ensure environmental protection (condition set forth in item I.2.9 hereof).

Clearance of trees and shrubs shall be carried out outside the nesting season. In addition,

clearance of greenery shall be maximally reduced, whereas other trees not intended for clearance which grow within the construction site shall be protected against mechanical damages and the possibility of roots drying (condition set forth in item I.2.11 and I.2.12 hereof).

Taking into account the fact that some sections of the planned undertaking are located in vicinity of acoustically protected areas, constructions works on such areas shall be carried out at the time when noise and vibrations shall be least onerous, that is during daytime. Additionally, as practicable, the construction site should not be located nearby areas developed with buildings (conditions set forth in item I.2.1 and I.2.4 letter c) hereof).

In order to reduce impact of the undertaking on the state of atmospheric air during the implementation thereof, conditions concerning proper equipment and organisation of construction works are determined in items I.2.5, I.2.6 and I.2.7 hereof.

At the operational stage of the undertaking it is necessary to carry out on-going and regular maintenance of embankments and other flood defences (condition set forth in item I.2.13 hereof).

Conditions which have to be considered in the documentation that is necessary to issue the decision on investment project implementation permit, within the meaning of provisions of the Act of July 8 2010 on special rules concerning the preparation and implementation of investments related to flood defences, ensuring environmental protection are determined in item I.3 hereof.

The planned undertaking is not one of the plants listed in Article 248 of the Act of 27 April 2001 – Environmental protection law (Journal of Laws of 2008, No 25, item 150 as amended) which pose a threat of serious industrial failures. Therefore, no requirements as regards counteracting the effects thereof are specified in this decision.

The analysed undertaking does not belong to the installations defined in Article 135 Par. 1 of the Act - Environmental protection law, therefore there are no grounds to establish an area of limited use.

The decision on environmental conditions for the designed undertaking is required for obtainment of i.a. decision on investment project implementation permit, within the meaning of provisions of the Act of 8 July 2010 on special rules concerning the preparation and implementation of investments related to flood defences, and with this regard this decision presents – in item II - the standpoint, referred to in Article 82 Par. 1 Subpar. 4 of the Act on providing information on the environment and its protection, public participation in environmental protection and environmental impact assessments, in the matter of the lack of necessity to carry out an environmental impact assessment and proceedings regarding cross-border impact on the environment under the proceedings for issuance of the

decisions, referred to in Article 72 Par. 1 Subpar. 18 of a/m Act, because the data on the scope of the undertaking, possessed at the current stage, are sufficient for complete and complex assessment of its impact on the environment.

Acting under Article 77 Par. 1 Subpar. 2 in connection with Article 78 Par. 1 Subpar. 2 of the Act on providing information on the environment and its protection, public participation in environmental protection and environmental impact assessments, an opinion of the State District Sanitary Inspector in Nowa Sól was requested before issuing this decision, who by the letter of December 3rd, 2012 ref.: ONS-NZ-4301/10/12 gave positive opinion to presented solutions for implementation of the undertaking without determining any conditions.

Pursuant to Article 82 par. 3 of above-cited Act on providing information on the environment and its protection, public participation in environmental protection and environmental impact assessments, characteristics of the undertaking constitutes an appendix hereto (the provision of item III hereof).

Taking into account the wording of Article 10 §1 of the Administrative Procedure Code, by Announcement of December 14th, 2012 the parties to the proceedings were informed about the whole evidentiary material collected in the case for issuance of decision on environmental conditions for the undertaking in question and about the possibility for the parties to make statements, within 7 days, as to the collected evidence and materials. The Announcement was placed on the notice board and in the on the website of the Regional Directorate for Environmental Protection in Gorzów Wielkopolski – www.gorzow.rdos.gov.pl (Public Information Bulletin), and also on the notice board of the City hall in Nowa Sól, the Municipality Office of Nowa Sól and the Commune Office of Otyń. As a result of the notice in question, none of the parties familiarised with the case files.

As it results from conducted environmental impact assessment, implementation and exploitation of analysed undertaking, with observance of all conditions presented in the environmental impact report and those defined herein, shall not have a significant adverse impact on the environment.

In connection with the foregoing and basing on the regulations cited in the introduction, it was decided as stated hereinabove.

INSTRUCTION

A decision on environmental conditions should be enclosed to the application, referred to in Article 72 Par. 1, and to the application, referred to in Article 72 Par. 1a of the Act on providing information on the environment and its protection, public participation in environmental protection and environmental impact assessments, within the date fixed in

Article 72 par. 3 and 4 thereof. Any changes of decisions on environmental conditions shall be subject to relevant provisions on issuance of decisions on environmental conditions.

Information about the decision is subject to disclosure in publicly available data list.

The parties may appeal against the decision to the General Director for Environmental Protection, via the Regional Director for Environmental Protection in Gorzów Wielkopolski, within 14 days from the date of delivery.

[stamp of the Regional Director for Environmental Protection in Gorzów Wielkopolski - Jan Rydzanicz /*illegible signature*/

Under Article 7 Subpar. 3 of the Act of November 16th, 2006 on stamp duty (Journal of Laws of 2012, item 1282), no stamp duty was collected for issuing of this decision.

Recipients:

1. Mr. Tadeusz Kowalewski
BPIŚiM "EKOPROJEKT" Sp. z o.o.
2. Mr. Janusz Marciniak
Director of the Lubuski Board of Amelioration and Hydraulic Structures
in Zielona Góra;
3. The Lubuskie Province
4. other parties - under Article 49 of the Administrative Procedure Code
5. File.

Copies to:

1. State District Sanitary Inspector in Nowa Sól

**REGIONAL DIRECTORATE FOR
ENVIRONMENTAL PROTECTION
IN GORZÓW WIELKOPOLSKI**

**Appendix to the decision on environmental conditions, ref.:
WOOŚ-II.4233.3.2012.AN of January 31st, 2013.**

CHARACTERISTICS OF THE UNDERTAKING

The planned undertaking entitled: "Nowa Sól – Pleszówek – stage II – construction of draining pumping station with improvements to existing embankments on Czarna Struga river, municipalities Nowa Sól and Otyń" consists in reconstruction, expansion and demolition of existing and construction of new flood protection facilities for the city and municipality of Nowa Sól and the commune of Otyń, located within the Czarna Struga valley and left-bank part of the Odra valley.

In particular, the scope of the undertaking shall comprise:

- a) construction of left-bank flood embankment of Odra river on the river section at chainage km 432.5÷432.7, separating the Czarna Struga valley within the area of its estuary to Odra river, with related structures, i.e.:
 - an embankment culvert at the crossing of Czarna Struga river with the flood embankment;
 - a flood control pumping station (of waters from the Czarna Struga basin and percolation waters) with capacity approx. 10 m³/s, including:
 - ✓ a pumping station building, inlet channel, pumping system and discharge channel to Czarna Struga river
 - ✓ cable power line, 2 km long, supplying electricity to the pumping station, current capacity approx. 520 kW current,
 - ✓ a transformer station of the pumping station.
 - an exit road from the embankment,
 - expansion of Czarna Struga river section within the area of its estuary to Odra;
- b) expansion of flood embankments on both sides of Czarna Struga river on the section from km 3.330 to km 7.618, with related structures:
 - embankment culverts,
 - exits and crossings of embankments
 - roads next to embankments.
- c) regulation of Czarna Struga river on the section from km 3.330 to km 7.618, consisting

in:

- expanding and shaping a trapezoid cross-section of the riverbed;
 - correcting the river bottom grade line, including execution of regulating structures.
 - strengthening the riverbed
- d) reconstruction or protection of the city's technical infrastructure and sewage network, water pipelines, power lines and gas networks at the crossings with the river and designed flood protection facilities.

Implementation of the investment project is a continuity of the Nowa Sól flood protection system modernisation and a second stage of implementing the change of the method and improvement of flood protection in the Pleszówek quarter.

Flood embankment of Odra river and pumping station for flood waters:

The foreseen change of the method to protect the areas within the Pleszówek quarter against flood shall consist in constructing a flood embankment on the Odra river separating the Czarna Struga valley and providing for preventing Odra flood waters from intruding into the Czarna Struga valley in the form of backwater. Czarna Struga waters shall be drained gravitationally – through an embankment culvert (during high and medium levels of Odra water). Mechanical drainage of the Czarna Struga valley at flood stages is more favourable for the protected areas than securing them only with flood embankments. Water levels in the Czarna Struga riverbed, which in the future shall be maintained by a pumping station, shall allow receiving, also during floods, waters from the city's storm drainage. In case of protection by embankments such a possibility does not exist, while the terrains on the landside of the embankment (protected) are also continuously supplied by percolation waters through the embankment and the ground, which cannot be prevented.

The foreseen separation (by a transverse embankment) of the Czarna Struga valley from Odra waters shall be periodical, only at high levels and during floods in Odra river. Such stages last from a dozen or so to several dozen days during a year. For most of the time of the year, during Odra water levels from high to low, Czarna Struga shall be, as so far, under free influence of Odra waters. The Czarna Struga waters shall be drained gravitationally – through an embankment culvert. The pumping station is designed to protect against flood, while its work is programmed only during times of real flood threat posed by Odra and Czarna Struga waters. In case of hydrological forecasts of short-term freshets in the downstream zone of Odra flood stage (even to 62.8 m a.s.l.), it shall be possible to leave an open Odra-Czarna Struga system and to let the Odra flood waters in the Czarna Struga valley, as minor water overflows on agricultural areas (meadows) in the Czarna Struga valley do not threaten developed areas with a permeation.

Flooding the valley terrains with Odra or Czarna Struga waters shall take place with

frequency similar to the present one. Slight permeations of the valley do not pose a threat to developed areas and there are no reasons for the Czarna Struga terrain to be mechanically drained at that time.

Foreseen level of turning on the pumping station during periods of flood risk was determined at 61.80 m a.s.l., i.e. at the level of alert state in Odra in the Czarna Struga estuary section. Such a water level results in permeation of downstream part of Czarna Struga valley. Maximum freshet in storage reservoir of the pumping station in the Czarna Struga valley shall be 63.50 m a.s.l., i.e. approx. 1 m below the water table of 1-in-100-years water in Odra. Backwater embankments of Czarna Struga (modernised at the first stage of the undertaking) shall function, most of all, as side dams of longitudinal equalising tank (storage reservoir) of the pumping station, situated in the Czarna Struga valley on approx. 3.2 km long section, i.e. from the pumping station to Zielonogórska street. After the freshet in Czarna Struga with probability of occurrence $p=1\%$ (once in 100 years) the tank shall be filled with water up to 1.5-2.0 m above the river valley bottom. The equalising tank of capacity approx. 0.7 M m³ shall allow the accumulation of part of the river waters, the transformation of Czarna Struga flood wave and significant reduction of necessary performance of the pumping station – approx. 10 m³/s in relation to size of Czarna Struga design flow – $Q_{1\%}=28$ m³/s.

Significant lowering of water level by 1-1.5 m in the river valley flooded by water in relation to Odra water level (with the aid of the pumping station) shall take place only during periods of extreme flood stages, while water level after lowering shall be anyway above the valley terrain and shall permeate it.

Reconstruction of Czarna Struga river and expansion of flood embankments.

The purpose of reconstructing Czarna Struga river and expanding flood embankments on the river section from km 3.330 to km 7.618 is to improve flood security on urban areas of Nowa Sól in immediate vicinity of the river. The river reconstruction shall consist in the restoration or small expansion of cross section and destroyed reinforcements of riverbed. This shall allow adapting the river to efficient and safe for the city transfer of the river waters at the time of freshets.

The designed river reconstruction shall consist in little modification of the river bottom grade line (removal of jams), expansion and shaping of trapezoid section and reconstruction of plant, fascine, concrete and stone reinforcements of Czarna Struga riverbed. Two regulation structures are located on the river section in question: a water damming weir (at chainage km 4.017), damaged brick-built barrage (km 3.429) and eight bridges and two footbridges. As part of the designed investment project it is foreseen to build a stone rapid replacing the damaged barrage. The other regulation and communication structures on the

watercourse are intended to be left intact.

The existing and designed flood embankments run directly on banks of Czarna Struga river and the embankment's upstream slope usually extends the river bed slope. The designed expansion of flood embankments consists in expanding the existing small earth embankments and raising them by approx. 0.4÷0.5 m, constructing new earth embankments 0.8÷1.1 m high in the areas where no flood embankments currently exist. In case of limited site, it is foreseen to construct an embankment in the form of low earth embankment and retaining wall of reinforced concrete and stone, protruding above the terrain or crest of the earth embankment up to 0.7 m. Such a solution was applied in the right-hand section of the river from the bridge in Chałubińskiego Street (km 5.224) to the bridge (in km 6.097) and to a large degree on both river banks on the section flowing through the site of former glue factory i.e. between bridges in Zielonogórska street (km 3.55) to the water power station inlet of the bridge in Okrężna street (km 4.078).

On the estuary of Kozuszná river to Czarna Struga it is foreseen to execute an embankment culvert and a station for provisional pumping of Kozuszná waters into Czarna Struga, during flood freshets in Czarna Struga. As part of the expansion of embankments, it is foreseen to expand the existing and construct new roads adjacent to embankments.

In consequence of the designed expansion of flood embankments and regulation of Czarna Struga river, it is necessary to reconstruct or protect technical infrastructure of the city (fencings, roads, etc.) and sewage networks, water pipelines, power and telecommunication lines and gas networks which collide with the designed regulation and expansion of flood embankments.