

outside that outline) and shrubs, of any construction materials and waste.

8. It is forbidden to interfere in patches of natural habitat of willow-poplar gallery forests and elm-ash forests (*Salicetum albo-fragilis*), (*Populetum albae*), (*Alnenion*) (91E0) confirmed in the vicinity of the planned works. For this reason patches of the aforementioned habitats and also other valuable natural habitats indicated by natural supervision in the neighborhood of which the concerned works will be conducted, at the stage of execution of works shall be properly protected, e.g. by means of fencing which shall be removed upon the completion of works.

9. The storage of waste, soil masses, as well as the localization of material bases the inter-embankment area of the Vistula river and at the locations of marginal lakes, water stagnation, and other habitats indicated by the environmental supervision is prohibited.

10. Excavations and structures, which may constitute a trap for small animals, mainly amphibians, should be adequately secured (e.g. tightly covered at the end of each workday). In addition, the aforementioned locations shall be inspected daily, and in the case of possible trapping of animals, they shall be captured and transferred to habitats proper for a given species, outside the works' area.

11. Using the area during the works should be economical and its transformation is acceptable only with regard to the performed project the reason of which the works related to implementation of the concerned task should be limited to the area directly occupied under the project implementation, i.e. the rebuilt embankment section with a technological strip of a width of a dozen or so meters (both on the landside and the inter-embankment area) and land for the technological facilities.

12. Transport of materials shall be conducted on existing roads or designated temporary roads, established in such a way so as to reduce interfering with the natural habitats designated by the environmental supervision.

13. Whenever possible, the planned works should be conducted gradually, i.e. after completing works in a given section and its reclamation, works should begin at the next embankment section intended for expansion.

14. After completion of earthworks, the construction site should be immediately restored. Damaged ground surfaces shall be sown and reconstructed section of the embankment shall be shielded and sown by native plants. Sections wherein the embankment shaft is reached by natural habitat 6510, should be subject to the reconstruction of meadow undergrowth of the slopes.

15. If, at the stage of conducting works, a collision is determined of planned works with protected plant positions, then (if technically possible and environmentally justified), after obtaining necessary permits, (in accordance with information included herein), a given specimen shall be replanted to a habitat proper for a given species, outside the concerned works, if possible, in close proximity to the place of acquisition.

16. Compliance with the aforementioned conditions shall be overseen by experienced natural supervisors. Reporting from supervisors' activities shall be transferred to the local Authority within 6 months from work completion.

Substantiation

Podkarpackie Voivodeship represented by Stanisław Stachura Director of Board of Melioration and Hydraulic Structures in Rzeszów, ul. Hetmańska 9, 35 - 959 Rzeszów applied to the local Authority by way of the letter of 13 March 2014, ref. no. : IM.403.43.2.2014 on issuing decision determining requirements of executing works for the project entitled: "Vistula - Stage 1 - expansion of the right Vistula embankment at 5 + 950 -15 + 819 km in the section from Tarnobrzeg (Skalna Góra) to Koćmierzów (border of Podkarpackie and Świętokrzyskie Voivodeships)".

The concerned letter covered the following documents:

1. A photocopy of decision of the Regional Director for Environmental Protection in Rzeszów of 19 September 2013, WOOŚ.4233.19.2013.GJ-95 setting environmental conditions for the project

under the name: "Vistula - Stage 1 - expansion of the right Vistula embankment at 5 + 950 -15 + 819 km in the section from Tarnobrzeg (Skalna Góra) to Koćmierzów (border of Podkarpackie and Świętokrzyskie Voivodeships)".

2. A photocopy of (certified for consistency with the original document) Resolutions no. 23/359/11 of the Board of Directors of the Podkarpackie Voivodeship in Rzeszów of 15 February 2011 on granting the power of attorney for Director of Board of Melioration and Hydraulic structures in Rzeszów.

3. Building design for the project entitled: "Vistula - Stage 1 - expansion of the right Vistula embankment at 5 + 950 -15 + 819 km in the section from Tarnobrzeg (Skalna Góra) to Koćmierzów (border of Podkarpackie and Świętokrzyskie Voivodeships)".

4. A photocopy of extract from register of land.

The goal of the concerned project is to improve the existing embankment on the right Vistula bank at 5 + 950 -15 + 819 km in Tarnobrzeg. Concerned section of the embankment protects the region of Dzików, Zakrzów, Wielowieś and Sielec against flood.

In the existing condition, the concerned section of the embankment of ca. 9,869 km has regular line with footing constructed on the land side which partially supports the operational road.

Stage of construction works shall be preceded by preparatory activities under which the following is provided: cutting of the embankment's crown and banks of the embankment's body and inter-embankment footing, measurement works and removal of top fertile soil of ca. 20 cm thick and its storage on the edges of the embankment's crown for the purpose of future embedding in the top of the embankment upon the completion of works.

As part of the reconstruction of previous structure of the embankment on this section it is planned to execute the following elements, among others:

Planned project includes the completion of e.g.:

- 1) Increase and enlargement of the embankment's crown along with thickening of the body by ca. 1.5[^]-1.8 m.
- 2) Sealing of body and base of the embankment based on anti-filtration screen of approx. 10 m deep (at 5 + 950 -15 + 700 km) made by DSM method and sealing of upstream scarp using foil covered with a layer which builds the embankment's body.
- 3) Repair of existing embankment's roads on the landside.
- 4) Construction of the operational road on lacking sections.
- 5) Construction of the operational strip on the side of the upstream bank.
- 6) Reconstruction of embankment's passages adjusting them to changed embankment sizes as a result of its increase.
- 7) Protection of embankment's lock, outlets of rain water pumping station and sewage treatment plant adjusting them to changed embankment's sizes as a result of its increase.

Technical parameters of the embankment upon the completion of expansion shall be in accordance with requirements specified in the Regulation of the Minister of Environment of 20 April 2007 on technical conditions concerning hydrotechnic buildings and their location (Journal of Laws No. 86, item 579).

Assumed parameters of flood embankment upon reconstruction:

Crown ordinate: from 150.45 m above sea level (at km 5+950) to 152.80 m above sea level (at km 15+819), ie. 1 m above max. water table in May 2010.

Embankment crown width: 3.00 m

Water-side slope inclination: 1:2.5

Land-side slope inclination: 1:2.0

Width of the embankment's footing: 3.50 m

Width of the operational strip: 4.00 m

Increase of the embankment's crown (on the whole length of the concerned section of the embankment), lightening of the upstream scarp and land-side as well as construction of the

operational road on the embankment footing shall require earth works. The basic material to be used in phase of earth works shall be clayey sand delivered from the nearby gravel pit located outside the area for execution of the investment project. It is not planned to store delivered material. It shall be delivered directly to the place of embedding in the embankment's body and at the same time it shall be compacted. Connection of the construction site shall provide access road and technological road from the upstream side.

For effective protection of the embankment's body against filtration it is planned to seal the base on the entire length by means of DSM technology (Deep Soil Mixing) with breakdown into sections:

Section I - km 5+950 -15+700

Execution of anti-filtration screen at the foot of the upstream scarp on the maximum depth of 10.00 m (at 5 + 950 -15 + 700km) and sealing of the upstream bank by means of foil. Anti-filtration screen shall be made by means of non-vibrating DSM technology - Deep Soil Mixing - ground mixing using vertical stirrers (cutting devices) or horizontal stirrers (cutting-bucket devices). In addition it is planned to make a green operational strip of ca. 4.0 m width on the side of the upstream bank.

Section II - km 15+700-15+819

This section shall include only earth works related to the embankment's superstructure under which it is planned to make green operational strip of ca. 4.0 m width on the side of the upstream bank. Owing to the planned increase of the embankment by 1.0 m within the ferry crossing it is necessary to secure the area located beyond the embankment by applying mobile sandur protections. Sandur protections shall be assembled in the case of meteorological messages concerning flood wave.

DSM technology is intended to the ground mixing using vertical or horizontal stirrers along with delivered cement-bentonite mixture. The minimum thickness of shield was adopted at the level of ca. 15 cm. Planned additional foil screen shall be covered with ground layer of ca. 1 m. Selected screen is characterized by favourable filtration coefficient at the level of ca. 1×10^{-8} m/s for the structure, namely flood embankment.

Application of vertical anti-filtration screen as a result shall increase the coefficient of stability of the embankment structure above the acceptable level ($F > 1.30$) and decreases the level of the ground water mirror during flood wave).

Increase of the embankment's crown results in the fact that it shall be necessary to reconstruct the existing embankment's passages which shall be incorporated in the operational road strip located on landside footing and crown. Pavement and base passages and operational road shall be made of draining layer with medium sand with the thickness of ca. 20 cm and crushed stone with granulation of 2-68 mm. On the section of operational road with asphalt pavement in the existing condition, on crushed stone passages pavement shall be made executed asphalt layer. The project implementation shall also require protection of existing embankment's locks.

Upon the completion of the construction works finishing works shall be conducted which are divided into different stages:

- 1) alignment of the embankment's crown by leveling of delivered ground masses which linger on crown,
- 2) humus filling and sowing with grass mixes of crowns and damaged embankment's scarps (upon completion of operational road),
- 3) disassembly of temporary technological roads and manoeuvre yards (upon the completion of construction of the operational road on footing and at the foot of the embankment).

In order to reduce inconveniences using heavy equipment in the vicinity of sites protected acoustically, works shall be conducted in day time (6⁰⁰ - 22⁰⁰). In order to limit inconveniences related to transportation of necessary materials in the planning phase the access to of the examined embankment shall proceed by means of access route - district road leading from voivodeship road 723 to reconstructed embankment in the area of Sielec and Wielowieś. Then communication of transportation vehicles and construction machines along embankment shall

proceed on the upstream side. For this purpose in the vicinity of planned embankment's body there shall be built technological route and manoeuvre yards of reinforced concrete slabs. Wastes manufactured and generated in the course of execution and operation shall be collected selectively and transferred for recovery or utilization.

According to the aforementioned Article 118 of the Act on environmental protection, *execution of works consisting in regulation of waters and construction of flood embankments as well as melioration works, construction drainage systems and other earth works changing water relations - in the areas of special natural values, especially in areas which covers vegetation of particular value for nature, areas of landscape and environmental values, areas of mass breeding of birds, presence of clusters of protected species and spawning grounds, winter habitats, fish passes and places of mass migration of fish and other water organisms occur on the basis of decision of the Regional Director of Environmental Protection which determines the requirements for execution of works.*

According to the provisions of the above Article the issuance of the decision determining requirements for execution of works is based on the cumulative occurrence of the following premises: planned actions must be executed in areas of special natural values (these areas should be considered as places where are located forms of nature protection specified in Article 6(1) item 1-5, and 7-9 of the aforementioned Act on environmental protection, additionally Article 118 draws particular attention to places of mass breeding of birds, spawning grounds, winter habitats, fish passes, places of mass migration of fish and other water organisms, presence of clusters of protected species as well as natural and ecological qualities) and at the same time conducted works must apply to: regulation of waters as well as construction of flood embankments as well as land melioration, drainage systems and other earth works changing water relations.

Analyzing the aforementioned premises to issue the decision on conditions for execution works in the concerned case it should be assumed that both are met because planned works shall be executed within naturally valuable area, i.e. partially within the borders of the area which have importance for Tarnobrzeg Vistula Valley Community PLH180049 (concerned embankment is the eastern border of the aforementioned area), in addition concerned works relate to the expansion of the flood embankment, therefore are consistent with a catalogue of works listed in the aforementioned Article 118 of the Act on environmental protection.

SDF which characterizes the area which have the importance for Tarnobrzeg Vistula Valley Community PLH180049 indicated that this area is characterized by great biodiversity of plant and animal species and a great diversity of natural habitats, such as: natural old beds with floating plants and shrubbery the occurrence of interesting species as e.g. *Salwinia natans*, *Trapa natans* or *Stratiotes aloides*; clusters of riverside large quantities of domestic species of *Populus Alba* and *Populus nigra*, harvestable meadows; overgrown sand dunes on the Vistula River. From among natural habitats the most important are riverside marshy meadows, selernica meadows and old beds. This area includes many species of fish and amphibians.

Documentation being in the possession of the local Authority coming from stage of issuing of the decision on environmental condition for the concerned project indicated that embankment scarp on the water and upstream side cover grass anthropogenic communities with features and structure of lowland fresh meadows *Arrhenetherion elatioris*. On this territory we may encounter echium and ribbed mellilot communities. The crown of the embankment contains field road where we can encounter vegetation complex comprised of *Plantago maior* and *Poa annua* as well as ruderal communities. Embankment's banks contain also plants of foreign origin such as *Bunias orientalis* or *Erigeron ramosus*. In the place where the waterside bank neighbors with parcels on the land side we can encounter *Cosmos bipinnatus* - decorative plant.

The report submitted at the stage of execution of the procedure indicates that the largest surface of the inter-embankment comprises of willow-poplar gallery forests and elm-ash forests

(*Salicetum albo-fragilis*), (*Populetum albae*), (*Alnenion*) (91E0). By the banks of watercourses around old riverbeds or water reservoirs there are *Phragmitetea*. Additionally inter-embankment contains numerous eutrophic reservoirs with *Nympheion* and *Potamion*. They are represented by floating plants *Lemna sp.* and species: *Spirodela polyrhiza* and *Hydrocharis morsus-ranae* and banks and coastal are covered by *Phragmites australisi*, *Typka Sp*, *Acorus calamus* and *Carex acutiformis*. The second group covering the largest surface of the inter-embankment except for marshy meadows are selernica meadows. Within the concerned area it is possible to encounter damp meadows with *Sanguisorba officinalis* typical for lowland meadows, however, as the most important meadow communities should be considered meadows with garlic angular *Allium angulosum* typical of extensively managed and damp meadows. We can also encounter *Angelica syhestris* typical of communities of damp meadows *Molinietaia caerulea*, the bushes of which were recorded in places which are partially shaded, marshy tree plantings with weak structure as well as scrubs and waterlogged meadows. The discussed area include also herb communities along watercourses as well as fringes, communities of herbs including seed of *Cuscuta*, *Calystegia sepium*, *Rudbeckia*, community of *Urtica* and *Calystegia sepium*. We may also encounter invasive plants *Solidago Sp.* and *Reynoutria Sp* and species: *Impatiens glandulifera* and *Rudbeckia laciniata* as well as *Heracleum sosnowskyi* and *Heracleum mantegazzianum*.

On the other hand the area on the land side is indicated by arable fields, orchards, wastelands and urbanized areas. In accordance with submitted report on the environmental protection on the land side there are no naturally valuable habitats.

Inventory-taking conducted by the local Authority made it possible to indicate vegetation covered by the protection under Regulation of the Minister of Environment of 5 January 2012. (Journal of Laws, item 81) i.e. *Sahinia natans* (sp. covered by strict protection in two old riverbeds in the inter-embankment) and *Nuphar lutea* (sp. covered by partial protection in water reservoirs within inter-embankment). There was also indicated the type of moss covered by partial protection under the aforementioned Regulation i.e. *Rhytidiadelphus squarrosus* which is present within damp habitats. In addition inventory taking covered *Yiburnum opulus* - covered by partial protection.

The fauna of the concerned area consists of 44 bird species, including in the vicinity of the concerned embankment there are such bird species as: *Sylvia communis*, *Parus major*, *Emberiza citrinella*, Skylark *Alauda arvensis*, *Turdus merula* and *Phylloscopus collybita*. The aforementioned birds species are medium numerous (blackbird also locally numerous), numerous (*Phalaenopsis*, *Phylloscopus collybita*, *Emberiza citrinella*), and very numerous (Great tit, Skylark) in Poland (on the basis of: "Awifauna Polski - rozmieszczenie, liczebność i zmiany"; L. Tomiałoć, T. Stawarczyk, Wrocław 2003).

Old riverbeds and water holes found in the inter-embankment are fixed reproduction places of amphibians, i.e. common toad *Bufo bufo* and *Rana temporaria* as well as *Bombina Bombina*, *Rana esculenta* and *Rana lessonae* - all species are covered by strict protection under the regulation of the Minister of Environment of 12 October 2011. (Journal of Laws No. 237, item 1419).

From among mammals there are two species covered by partial protection and listed in Appendix II of the Habitat Directive, namely otter *Lutra lutra* and beaver *Castor fiber* (the presence of otter is associated with water courses observed in the inter-embankment and bed of the Vistula river).

According to the above conditions ground masses shall not be collected from the inter-embankment. The concerned project shall not in any way interfere in marshy habitats 91E0 located in the inter-embankment and old riverbed located in the inter-embankment (and other water reservoirs) or meadows. Additionally marshy habitats neighboring with embankment intended for refurbishment (in accordance with information contained in DoŚU reaching to the embankment's footing within the total section of 1.4 km i.e. on short sections of the length of 230 m, 525 m, 331 m and 380 m) shall be protected by fencings. Additionally, within the area of the aforementioned habitats in accordance with the aforementioned conditions shall not be collected wastws and shall

not be located work facilities (which shall be situated on the land side).

Data held by the local Authority (derived from the report on the environmental protection and its supplements) indicate that variable-humidity meadows which are extensively used (habitat with code 6510) reach the embankment's footing on the total length of ca. 5.3 km (i.e. on shorter sections of 1.4 km, 670 m, 875 m and 2.4 km) and may be damaged during the execution of works. For this reason in the aforementioned conditions it is indicated that upon the completion of works damaged ground surfaces shall be subject to shielding and sowing with native plants while on sections where natural habitat 6510 reaches the embankment scarp it is necessary to reconstruct ground cover on the embankment slope.

In the course of the project damages cover herbaceous vegetation and logging covers trees and shrubs at the place of refurbishment of the embankment's crown as well as in the area occupied for temporary technological roads and manoeuvre yards. Logging shall cover several trees and shrubs which directly collide with the project. Pursuant to the aforementioned conditions, removal of trees and shrubs shall be executed beyond the main breeding period of birds which according to the letter of the General Director of Environmental Protection of 10 August 2012. ref. no. : DOP-OR.075.03.5.2012.ep.3 for most species is included in the period from 1 March to 15 October

According to the aforementioned conditions humus shall be removed within the embankment which is intended for expansion and protected and then used for reclamation of the concerned area. For the purpose of limitation of the adverse effects of this element on fauna especially on species nesting on the ground in the aforementioned conditions it was defined that fertile layer of soil has been modeled beyond the period from 1 March to 31 July (when it is necessary to conduct this type of activities in different time they shall be consulted with supervisor of environmental works). Additionally the conditions indicate that humus removal in waterlogged areas which may constitute potential habitat of amphibians was executed in autumn (on the basis of: "Poradnik ochrony plazów" R. T. Kurek, M. Rybacki, M. Sołtysiak: Bystra 2011). Additionally in accordance with the aforementioned conditions in the case of observing, by natural supervision, routes passing through the place of amphibian migration in the aforementioned migration corridor works shall be withheld for the period from 1 March to 30 June so as to prevent any possible spread of these animals by mechanical equipment. It is also acceptable to make temporary fencing to protect migration corridors of these animals (it is necessary to check and consult with natural supervision which on the basis of valid literature shall define the selection of fences to perform fencing and indicate the length and width of the separated land strip).

It is necessary to emphasize that on 19 September 2013 ref. no. : WOOŚ.4233.19.2013.GJ-95, the Regional Director of Environmental Protection in Rzeszów issued decision setting environmental conditions for the project under the name: "Vistula - Stage 1 - expansion of the right Vistula embankment at 5 + 950 -15 + 819 km in the section from Tarnobrzeg (Skalna Góra) to Koćmierzów (border of Podkarpackie and Świętokrzyskie Voivodeships)".

In the aforementioned decision of the Regional Director of Environmental Protection in Rzeszów stated that using indicated in the aforementioned technological, construction and organizational solutions and taking account of presented conditions, planned project shall not have significant adverse impact on resources, formations and components of nature referred to in Article 2(1) of Act of the Environmental Protection of Act of 16 April of 2004 on nature protection (Journal of Laws of 2013, item 627 with later amendments). In addition, the aforementioned it was recognized that concerned project shall not substantially affect goals and object of protection of the aforementioned Natura 2000 site, integrity of this area and consistency of Natura 2000 networks. Under impact assessment there were no suitable impact assessment required by way of Article 6.3 of the Habitat Directive.

Conditions of this decision are mostly identical with minimizing actions suggested in the aforementioned decision on environmental conditions with regard to methods of limitation of the

impact of planned works on natural environment.

Information on submitted application is placed in the publicly available list of data on documents containing information on the environment and its protection in the form under number 351/2014.

Taking into account the above, it was adjudged as in the sentence of this decision.

Information

In the case when the execution the planned investment involves violation of prohibition which are binding in relation to plant, animals and fungi covered by species protection, it shall be necessary to obtain respective permits referred to in Article 56 of the aforementioned Act.

Parties pursuant to Article 127 § 1 and 2 of the Code of Administrative Proceedings may refer to the General Director of Environmental Protection in Warsaw via the Regional Director of Environmental Protection in Rzeszów within fourteen days from the date of its delivery.

Stamp duty exempts units referred to in Article 7 and activities listed in Article 2 and Appendix to the Act of 16 November 2006 on stamp duty (Journal of Laws No.225 item 1635 as amended).

Received by:

1. Podkarpacki Land Improvement and Water Facilities Management in Rzeszów.
2. ad acta