

Appendix 1 – Plan of Mitigation Measures

This Appendix to the Environmental Management Plan for the *Odra–Vistula Flood Management Project – Contract 1A.1 Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River and Modernization of Marwicki polder stage I and II* presents mitigation measures reducing negative environmental impacts and which constitute guidelines for the Contractor as part of the Contract 1A.1.

No	Issue	Place	Mitigation measures	Responsible entity
01 – RULES CONNECTED WITH PROPERTY ACQUISITION				
1.	Land and landscape protection	All work areas	It is required to ensure the efficient use of the area and minimal transformation of its surface.	Contractor – Site Manager
2.	Land and landscape protection	All work areas	The stage of conducting construction works must be preceded by preliminary works on preparing the area for the development, i.a. preparing the places for storing construction materials, site facilities, etc. and allocating and preparing (and agreeing with the road administrators) traffic routes for machines and vehicles.	Contractor – Site Manager
3.	Land and landscape protection	All work areas	It is necessary to limit as much as possible the area of temporary occupation.	Contractor – Site Manager
02 – MEASURES TO BE PERFORMED PRIOR TO WORKS COMMENCEMENT				
4.	Soil and ground protection	All work areas	Prior to the earthworks, it is necessary to remove 20–30 cm thick layer of humus which will be re-used for subsequent land reclamation.	Contractor – Site Manager
5.	General conditions concerning nature protection	All work areas	Before commencement of the works a site survey should be carried out of temporarily and permanently occupied areas, intended for determining of a current location of protected plant species and plant species placed on national and regional red lists of endangered species of plants, and designation of places of potential presence of these species.	Contractor – phytosociologist/botanist
6.	General conditions concerning nature protection	All work areas	If during site survey or construction works, there are discovered species of plants, animals or fungi under strict or partial species protection, before taking any action, the Contractor must obtain relevant permission required by law (Article 56 section 1 and 2 of the Act of 16 April 2004 on environmental protection or similar legal provisions applicable at the time of preparing and conducting works).	Contractor – phytosociologist/botanist, ornithologist, herpetologist, chiropterologist, entomologist, water protection expert

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No	Issue	Place	Mitigation measures	Responsible entity
7.	General conditions concerning nature protection	All work areas	If it is necessary to relocate species mentioned in item 6, the Contractor is obliged to plan such action, obtain required permission, effectively conduct such actions and implement other activities required (e.g. drawing-up and submitting reports to the body issuing relevant permission).	Contractor – phytosociologist/botanist, ornithologist, herpetologist, chiropterologist, entomologist, water protection expert
8.	General conditions concerning nature protection	All work areas	Works must be carried out with avoidance of any damage to trees and shrubs. Trees and shrubs not intended for cutting out, which grow on the Task implementation area and which are prone to damage due to traffic, equipment transfer, etc. must be protected against damage, for instance, through placing trunk shields made of wooden boards around the entire trunks up to the height of at least 1.5 m. It is also required to secure crowns, trunks and root systems against mechanical damage and drying out.	Contractor – phytosociologist/botanist
9.	General conditions concerning nature protection	All work areas	If a tree gets damaged, it is necessary to undertake required measures immediately under the Contractor’s environmental team supervision which will limit damage consequences.	Contractor – phytosociologist/botanist
10.	Protection of archaeological values	All work areas	Prior to the commencement of works, the Contractor shall enable the qualified person to carry out all necessary archaeological survey in the places of discovered archeological sites. The above will ensure the protection and removal of valuable objects and other elements of historical value from the working site and will enable the performance of specific works.	Contractor – archaeologist
11.	Human health and safety protection	All work areas	Before commencement of the works involving vibrations, which shall constitute inconvenience for the neighbouring inhabitants and cause damage hazard to the buildings located near the works there should be carried out survey of existing buildings with particular focus on cracks and damages, and during the afore-mentioned works the condition of the buildings should be monitored. In case of stating damage, the Contractor shall be obliged, on the basis of the monitoring results, to restore the technical condition of the buildings.	Contractor – Site Manager

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No	Issue	Place	Mitigation measures	Responsible entity
12.	General conditions concerning nature protection	All work areas	For the time of preparation and implementation of construction works, the Contractor will hire a team of naturalists, which will be responsible for constant environmental supervision of works. The Contractor's environmental team shall include the following experts: phytosociologist/botanist, herpetologist, ornithologist, chiropterologist, entomologist and water protection expert. The Contractor's environmental team will be responsible for the proper implementation of mitigation measures for the environment during works construction. Environmental team experts must be accepted by the Engineer before civil works execution.	Contractor – phytosociologist/botanist, ornithologist, herpetologist, chiropterologist, entomologist, water protection expert
13.	Sapper supervision	All work areas	Prior to the commencement of works, the Contractor shall carry out a site inspection on the area of works in terms of the presence of unexploded shells.	Contractor – authorised sapper unit
14.	General conditions concerning nature protection – prevention and elimination of invasive species	All work areas	Prior to commencement of the construction a site inspection to be carried out of the area of works with participation of phytosociologist in order to locate the presence and estimate population of invasive plants (except for <i>impatiens parviflora</i>). After locating and visibly marking in places where invasive plants grow, take preventive measures during the implementation period, which will limit spreading of these plants, including, among others, removing humus layer along with invasive plants and transporting them from area of works to the composting plant or neutralizing in any other effective manner. It is unacceptable to mix this humus with humus overgrown with local native vegetation.	Contractor – Site Manager, phytosociologist/botanist
03 – REQUIREMENTS CONCERNING ENSURE THE ACCESS ROUTES TO THE CONSTRUCTION SITES				
15.	Human health and safety protection	All work areas	The Contractor shall ensure access routes for rescue teams (ambulance, fire brigade, etc.) for the entire duration of the works, marking out roads, exits, passages for pedestrians and parking for vehicles used on the building site.	Contractor – Site Manager

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No	Issue	Place	Mitigation measures	Responsible entity
16.	General conditions concerning nature protection	Structures: <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River, Modernization of Marwicki polder stage I and II</i>	During implementation of the Structure: <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i> transport, equipment and vehicle traffic must take place, mostly, along the existing road system and on the embankment crown, not interfering with the habitats and areas adjacent to the Task area. During implementation of the following Structure: <i>Modernization of Marwicki polder stage I and II</i> – transport, equipment and vehicle traffic must take place, mostly, along the existing road system and on the roads along the embankment as well as on the embankment crown.	Contractor – Site Manager
17.	Land and landscape protection	All work areas	It is not allowed to perform earthworks which permanently deform the relief, with the exception of works involving the construction and modernisation of flood embankments.	Contractor – Site Manager
18.	Human health and safety protection	All work areas	It is required to ensure human protection against increased vehicle traffic along roads used during construction works. At the time of works performance, the Contractor shall supply, install and operate all temporary safety devices, ensuring the safety of vehicles and pedestrians.	Contractor – Site Manager
19.	Noise protection – sections of the embankment where are located existing roads, which will be used by Contractor	All work areas	Paved surfaces (e.g. access roads) used for vehicle transport of construction materials and aggregate should be maintained in good technical condition.	Contractor – Site Manager
20.	Protection of tangible assets	All work areas	The Contractor is obliged to prepare photographic documentation of the entire area of conducting the works with particular focus on of the technical condition of roads and the buildings located in the areas close to roads used for transport of construction materials. Before commencement of the works the Contractor shall carry out, in the presence of road Operator, site inspection on the basis of which a roads condition protocol will be provided before roads are used for construction purpose. Based on this document, the Contractor will be obliged to restore roads technical condition.	Contractor – Site Manager
21.	Human health and safety protection	All work areas	Proper marking of access roads. According to valid laws and agreements with Operators of the roads the Contractor shall use the access routes which are appropriately marked. These marking shall be regularly controlled, in the case of destruction or theft of marking the Contractor shall promptly replace it or complete it.	Contractor – Site Manager

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No	Issue	Place	Mitigation measures	Responsible entity
22.	Protection of tangible assets	All work areas	<p>The Contractor shall be responsible for all damage to the structures, buildings, roads, drainage ditches, culverts, water supply and gas pipe lines, power poles and lines, cables geodetic control network and any type of installations and other types of object such as vertical and horizontal markings, navigation markings, information boards, culture assets etc., caused by the Contractor or their Subcontractors during works performance. The Contractor is also responsible for restoring the flow capacity of drainage ditches and installations in the area of conducted works and used transportation roads, in case of damage caused by works performance and transportation related with works implementation.</p> <p>The Contractor shall immediately repair any occurred damage at their own expense and also, if necessary, shall perform other works ordered by the Engineer.</p>	Contractor – Site Manager
23.	Protection of tangible assets	All work areas	The Contractor is obliged to agree with road managing authority, the traffic organisation and works securing plans. The Contractor is obliged to organise traffic in accordance with the agreed plans (marking and securing of the Works site and marking of de-tours and recommended, related with the traffic organisation change, markings of the roads, etc.).	Contractor – Site Manager
24.	Protection of tangible assets	All work areas	Prior to Works commencement, the Contractor shall present to the Engineer for approval, traffic organisation and Works securing plans agreed with the managing authorities and the Schedule. Depending on the needs and Works progress, the traffic organisation plans shall be updated by the Contractor on on-going basis.	Contractor – Site Manager
25.	Protection of tangible assets	All work areas	The Contractor shall respect the statutory limitations of loads per vehicle axle during transportation of materials and equipment to and from the construction site. The Contractor shall also obtain any necessary permits from authorities, for transportation of non-typical loads and shall constantly inform the Engineer about each case of such a transportation.	Contractor – Site Manager
04 – ORGANIZATION OF THE BACK-UP FACILITIES, WAREHOUSES AND STORAGE YARDS				
26.	Land and landscape protection	All work areas	Roads, sites and site facilities must be situated in the manner ensuring the protection of trees and shrubs growing beyond the places necessary for occupation for construction works.	Contractor – Site Manager

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No	Issue	Place	Mitigation measures	Responsible entity
27.	General conditions concerning nature protection	All work areas	Places of temporary occupation (temporary routes, sites, site facilities, storage sites for construction materials, parking lots and other) must be located outside of the valuable in term of nature areas as indicated by the Contractor's environmental team (in particular, outside natural habitat boundaries, habitats of species of plants and animals under protection in Natura 2000 sites, as well as stands of plants, animals and fungi under legal protection). These areas if possible, must be improved and sealed and equipped with sorbents enabling rapid elimination of the effects of possible leakage of fuel or oil derivative substances.	Contractor – phytosociologist/botanist, ornithologist, herpetologist, chiropterologist, entomologist, water protection expert
28.	General conditions concerning nature protection	All work areas	The areas of temporary occupation (temporary routes, sites, building site facilities, storage sites for construction materials, parking lots and other) must be located and prepared in accordance with the recommendations of the Contractor's environmental team, approved by the Engineer.	Contractor – phytosociologist/botanist, ornithologist, herpetologist, chiropterologist, entomologist, water protection expert
29.	Human health and safety protection	All work areas	Temporarily occupied sites (service roads, sites, building site facilities, construction material storage, parking, etc.) must be situated as far as possible from areas under acoustic protection.	Contractor – Site Manager
30.	General conditions concerning nature protection	Structure: <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i>	Places of temporary occupation (temporary routes, sites, building site facilities, storage sites for construction materials, parking lots and other) must be located on the internal side of the embankment surrounding Chlewice, ensuring efficient use of the area, and after completing the works, it is necessary to clear the area.	Contractor – Site Manager
31.	General waste handling rules	All work areas	It is not allowed to store and locate site yards in the places where there are shallow ground waters in well permeable deposits, peat hollow, in direct neighbourhood of the waters of the Mysla River and Odra River, within the borders of natural habitats of animals and plants, subject to protection under Natura 2000, as well as plant, animals and fungi positions subject to legal protection.	Contractor – Site Manager
32.	Soil and surface water protection	All work areas	Sites dedicated to cars and construction equipment maintenance must be improved and equipped with sorbents for the duration of works.	Contractor – Site Manager
33.	Soil and surface water protection	All work areas	Fuelling up should take place by means of mobile and stationary fuel distribution points with appropriate security measures such as a station with a sorbent for removing any leakages and outflows of oil derivative substances to the ground.	Contractor – Site Manager
34.	General conditions concerning nature protection	All work areas	Places of storage of construction materials, soil, construction equipment and vehicles parking shall be located beyond projection of tree crowns (which were not cut down in connection with construction works).	Contractor – Site Manager

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No	Issue	Place	Mitigation measures	Responsible entity
35.	Human health and safety protection	All work areas	Storing of materials used during construction works in the manner securing them against damage and in the manner not posing a risk to the human and property safety, excluding falling over, sliding down or falling down of products and devices.	Contractor – Site Manager
36.	Human health and safety protection	All work areas	If hazardous substances and materials are stored on the building site, they must be appropriately protected, preventing the access of unauthorised persons, and information on a hazard must be provided on warning boards.	Contractor – Site Manager
37.	General waste handling rules	All work areas	The waste generated should be regularly selectively collected in appropriate containers located on dedicated sites, preventing dusting and disseminating of light fractions and then systematically discharged to the landfill.	Contractor – Site Manager
38.	Hazardous waste	All work areas	Hazardous waste must be collected by the authorized entities only. Until handing over of hazardous waste to the authorized entities for collecting, hazardous waste should be stored in a manner preventing release of hazardous substances to the environment, i.e. in tightly closed containers, in canopied areas with paved and impermeable ground, secured against third party access.	Contractor – Site Manager
39.	Hazardous waste	All work areas	Hazardous waste storage sites must be allocated beyond flood waters area. (Q1% – so called water – once every hundred years).	Contractor – Site Manager
40.	General waste handling rules	All work areas	The waste generated must be managed by the Contractor in compliance with applicable law. The Contractor should ensure the organisation of works in a way which guarantees waste segregation and their successive collection by authorised entities. The Contractor is obliged to carry out an inspection of construction site to detect any “illegal landfills”. The Contractor should also protect the building site against formation of "illegal landfills".	Contractor – Site Manager
41.	General waste handling rules	All work areas	It is not allowed to store on the building site of any waste connected with repairs and maintenance of equipment, machines and devices used for construction works. Any repairs of machines and servicing must be carried out by specialized companies or persons authorised to perform these works by the manufacturer (authorised service). Waste generated during these works (i.a. damaged parts, seals, filters, containers after lubricants and fluids, used oils, fluids, etc.) must be collected by contractors of repairs and services and they cannot be stored on the building site. They must be managed in compliance with applicable law.	Contractor – Site Manager

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No	Issue	Place	Mitigation measures	Responsible entity
42.	General waste handling rules	All work areas	Waste water drained from paved areas and temporary site facilities (e.g. sites for storing fuels and oils, parking lots, containers, etc.) must not transfer pollutions to surface or ground water.	Contractor – Site Manager
43.	General waste handling rules	All work areas	Site facilities must be equipped with required number of toilets (e.g. portable toilets) and the Contractor's employees should take care of their physiological needs in dedicated places.	Contractor – Site Manager
44.	General waste handling rules	All work areas	Prior to the commencement of works, the Contractor is obliged to carry out an inspection of the construction site to detect any illegal wastewater discharge into the Myśla River. Domestic sewage generated on the building site facility must be discharged to sealed tanks and then regularly handed over to the sewage treatment plant. If technically feasible, it is allowed to discharge sewage into sewage main connected to the sewage treatment plant.	Contractor – Site Manager
45.	Handling of sewage	All work areas	It is necessary to equip all construction sites with a required number of portable toilets and provide training to all the employees with regard to maintaining appropriate hygienic conditions within the area of the construction site and its direct surrounding.	Contractor – Site Manager
46.	Handling of sewage	All work areas	It is important to ensure regular disposal of domestic sewage previously gathered in sealed and closed tanks.	Contractor – Site Manager
47.	Land and landscape protection	All work areas	It is necessary to keep order on the building site and ensure correct work organisation.	Contractor – Site Manager
05 – REQUIREMENTS FOR FELLING TREES AND SHRUBS				
48.	General conditions concerning nature protection	All work areas	It is recommended to conduct three and shrubs felling manually and the process itself should be limited to the necessary minimum.	Contractor – Site Manager
49.	General conditions concerning nature protection	All work areas	In the planned tree felling sites due to the rebuilding and construction of embankments, it is necessary to assess if there are not any protected beetle species. If trees occupied by those species are found, it is necessary to secure the species and/or such beetles must be relocated to a different habitat of similar conditions. The works must be carried out under the supervision of an entomologist.	Contractor – entomologist

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No	Issue	Place	Mitigation measures	Responsible entity
50.	General conditions concerning nature protection	All work areas	In order to reduce losses in the species of protected bats which may live in tree hollows, the clearance of trees of circumference exceeding 100 cm should be preceded by a chiropterologist inspection for the purpose of assessing the actual presence of bats in the vicinity of respective types of trees. Tree felling must be carried out under the supervision of a chiropterologist.	Contractor – chiropterologist
51.	General conditions concerning nature protection	Structure: <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i>	Felling of trees and bushes in the scope necessary for the Structure implementation is to be performed outside of the vegetation period and birds breeding period (i.e. from 1st November to the end of February).	Contractor – ornithologist
52.	General conditions concerning nature protection	Structure: <i>Modernization of Marwicki polder stage I and II</i>	Felling of trees and bushes should be limited to the scope necessary for the implementation of the Structure and performed outside of the vegetation season and birds breeding season (within the period from 1st September to the end of February).	Contractor – ornithologist
53.	General conditions concerning nature protection	Structure: <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i>	Felling of trees and bushes (feling must be performed manually) should be conducted in accordance with the detailed guidelines presented in the decision of RDOŚ in Szczecin on environmental conditions No. 8/2012 of February 27, 2012, included in the Appendix 4 to EMP (pages 3–5, section f, g, h, i, paying particular attention to the necessity of preserving two oaks growing on the slope foot and near the planned embankment). It is necessary to supplement the losses to the landscaped areas in cooperation with the Commune Office in Boleszkowice and local communities by planting of 60 trees.	Contractor – phytosociologist, ornithologist
06 – REQUIREMENTS AT THE STAGE OF WORKS IMPLEMENTATION				
54.	Land and landscape protection	All work areas	It is necessary to store lubricating substances and fuels on dedicated sites, with correct sealing degree and equipped with sorbents for neutralising oil derivative substances.	Contractor – Site Manager
55.	Land and landscape protection	All work areas	Vehicle and construction equipment’s traffic should take place on temporary routes, preventing any damage to the near–by vegetation.	Contractor – Site Manager
56.	Land and landscape protection	All work areas	Machines and vehicles may move only along temporary routes and manoeuvring sites, and, if possible, along fixed routes.	Contractor – phytosociologist/botanist
57.	Soil, surface water and air protection	All work areas	Equipment, machines and vehicles used for construction works must be in working order and meet standards and legal requirements arising from the conditions of authorisation for putting into service (and public road traffic, if applicable), hold approvals and have low emission rates.	Contractor – Site Manager

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No	Issue	Place	Mitigation measures	Responsible entity
58.	Soil, surface water and air protection	All work areas	The type and working order of such equipment must ensure the protection of soil, surface water and groundwater against pollution, dust and gas emission to the air and noise emission.	Contractor – Site Manager
59.	Soil and surface water protection	All work areas	It is not allowed to repair equipment and machines or exchange oil within the Odra River inter-embankment zone and between the planned backwater embankment of Odra River and the Myśla River, or in the vicinity of areas of natural values, indicated by the Contractor's environmental team.	Contractor – Site Manager
60.	Soil and surface water protection	All work areas	It is not allowed to fuel up and store fuel within the Odra River inter-embankment zone and between the planned backwater embankment of Odra River and the Myśla River, or in the vicinity of areas of natural value, indicated by the Contractor's environmental team.	Contractor – Site Manager
61.	Soil and surface water protection	All work areas	It is not allowed to park machines within the Odra River inter-embankment zone and between the planned backwater embankment of Odra River and the Myśla River, or in the vicinity of areas of natural value, indicated by the Contractor's environmental team.	Contractor – Site Manager
62.	Soil and ground protection	All work areas	Equipment, machines and vehicles used for construction works must be located in dedicated parking places with protecting measures against the spillage of oil derivative substances to the soil and water environment. If such equipment, machines and vehicles are not used, they must be parked in dedicated places.	Contractor – Site Manager
63.	Air protection	All work areas	It is necessary to apply required organizational and technical measures in order to maintain clean access routes.	Contractor – Site Manager
64.	Air protection	All work areas	It is required to apply necessary organisational and technical measures in order to limit the emission of dust during transport of construction materials from the areas of their storage to the building site.	Contractor – Site Manager
65.	Air protection	All work areas	It is necessary to apply required organisational and technical measures in order to limit dust emission during construction works.	Contractor – Site Manager
66.	Air protection	All work areas	Bulk materials and aggregates to be used during the construction stage shall be secured against their blowing or excessive dusting from their surface both during transportation and storage and when using them to build the embankments, as well as during preparation of concrete mix and loading the mix used for building the anti-filtration screen in the flood embankment.	Contractor – Site Manager

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No	Issue	Place	Mitigation measures	Responsible entity
67.	Air protection (Protection against dusting)	All work areas	Limit dust generation caused by the means of transport by: <ul style="list-style-type: none"> • cleaning vehicle wheels before entering the public roads, • cleaning temporary internal roads surface, • using vehicles with tilts for transport of dusty materials or transport of powdery materials in packagings, • prevention of contamination of local roads with sand and other material transported by vehicles, • sprinkling of surfaces of internal temporary roads. 	Contractor – Site Manager
68.	Air protection	All work areas	It is necessary to reduce the work time of motorized machines and vehicles.	Contractor – Site Manager
69.	Air protection	All work areas	Traffic of vehicles and machines as well as earthworks must be minimised to cover only those necessary for the Task implementation.	Contractor – Site Manager
70.	Human health and safety protection	All work areas	It is necessary to reduce speed limit of vehicles in the vicinity of the building areas.	Contractor – Site Manager
71.	Air protection	All work areas	In the period of standstill and breaks in work, engines of the equipment, machines and vehicles must be switched off.	Contractor – Site Manager
72.	Land area and landscape protection	All work areas	The area directly adjacent to flood embankments must be cleared upon completion of the works.	Contractor – Site Manager
73.	Soil and ground protection	All work areas	The Contractor should choose a place for storing humus secure from damage, being driven through and being tamped down.	Contractor – Site Manager
74.	Soil and ground protection	All work areas	Humus should be stored and protected in a way enabling its re-use.	Contractor – Site Manager
75.	Land and landscape protection	All work areas	Upon completion of the construction works, it is necessary to restore temporarily occupied sites to their previous condition (land reclamation). Stored humus should be used for site leveling and then, after preparing the soil for sowing, it must be sown with grass mix, composition of which will be agreed with a fitosociologist / botanist and it must be properly cared for by mowing at least twice a year (from June to September for structure <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River. Structure: Modernization of Marwicki polder stage I and II</i> the periods for mowing embankments will be determined beyond the bird breeding season.	Contractor – phytosociologist/botanist
76.	Surface water protection	All work areas	It is not allowed to pipe water from excavations into the river and other surface waters e.g. oxbow lakes.	Contractor – water protection expert
77.	Surface water protection	All work areas	It is necessary to use an appropriate drainage system, ensuring the maintenance of excavations without stagnant waters.	Contractor – water protection expert

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78.	Land and landscape protection	All work areas	It is necessary to conduct works by methods limiting land occupation and minimising land conversion.	Contractor – Site Manager
79.	Soil and ground protection	All work areas	Only vehicles, machines and equipment connected with the performance of works as part of the Task are allowed to be present in the building site and its site facility.	Contractor – Site Manager
80.	Land and surface water protection	All work areas	The Task shall be designed and implemented in a way which excludes penetration of any pollution, especially oil-based to the land or water, in case of possible leakage or spillage of oil-based substances, the leak shall be immediately removed and neutralized, polluted soil layers shall be managed in accordance with binding regulations.	Contractor – Site Manager
81.	Land and surface water protection	All work areas	In the event of oil derivative substance spillage to surface water, the Contractor is obliged to ensure mechanical collection of oil derivative substance from the water surface.	Contractor – Site Manager
82.	Land and surface water protection	All work areas	Within floodplains (inter-embankment zones of the Odra River and the Myśla River), and flood direct risk areas, it is not allowed to fix equipment and machines, including replacement of oils and fuel. Machines may be parked only in dedicated zones.	Contractor – Site Manager
83.	Land and surface water protection	All work areas	It is necessary to use during the Task implementation period only materials that are harmless to the environment (natural materials or neutral for the environment). Materials, raw materials, fuels, fertilisers, cement and concrete mixtures must have relevant approvals for use. Earth embankments must be performed from natural materials without the use of hazardous materials or materials harmful to human health.	Contractor – Site Manager
84.	Land and surface water protection	All work areas	In order to prevent soil contamination, it is necessary to use equipment, machines and vehicles in working order. The Contractor must perform ongoing inspections of the condition of equipment, vehicles and machines as well as eliminate, by means of available organisational measures, a possibility of entering of any contamination to the soil and water environment, including the spillage of fuels, hydraulic oils and oil derivative substances, both during servicing, re-fuelling, transport as well as the operation of machines, equipment and vehicles.	Contractor – Site Manager
85.	Surface water protection	All work areas	The soil material which is to be re-used must be stored as far as possible from the river bed and avoiding any damage to the bed and banks.	Contractor – Site Manager
86.	Land and landscape protection	All work areas	It is necessary to apply utmost care during earthworks in the vicinity of oxbow lakes in order to avoid damaging or changing their structure.	Contractor – phytosociologist/botanist

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87.	Surface water protection	Structure: <i>Modernization of Marwicki polder stage I and II</i>	It is not allowed in the Structure's work areas to conduct works on the riverside of the embankments for sections specified in the Environmental Decision for <i>Modernization of Marwicki polder stage I and II</i> .	Contractor – Site Manager
88.	Groundwater protection	All work areas	It is not allowed to deposit soil in depressions and oxbow lakes within the entire Task implementation area.	Contractor – Site Manager
89.	Groundwater protection	All work areas	It is not allowed to deposit soil in Odra River inter-embankment zone.	Contractor – Site Manager
90.	Groundwater protection	All work areas	It is not allowed to deposit soil in areas of a natural value, indicated by the Contractor's environmental team.	Contractor – Site Manager
91.	Groundwater protection	All work areas	During driving of sheet pile walls the drainage of wetlands and boggy areas shall be limited to the minimum.	Contractor – Site Manager
92.	Noise protection	All work areas	Construction works in the areas and immediate vicinity of areas under acoustic protection must be carried out only during the day (from 6 a.m. to 10 p.m.).	Contractor – Site Manager
93.	Noise protection	All work areas	It is necessary to use the technologies of construction works which are least burdensome in terms of acoustics, maintain good work organisation, correct equipment operation and ensuring correct technical order.	Contractor – Site Manager
94.	Noise protection	All work areas	It is necessary to avoid simultaneous operation of a big number of equipment units in the same place at the same time.	Contractor – Site Manager
95.	Noise protection	All work areas	It is necessary to locate standstill sites for machines as far as possible from the areas under noise protection and at the same time as close as possible to the area of works.	Contractor – Site Manager
96.	Noise protection	Structure: <i>Chlewice-Porzecze. Backwater embankment of Odra River at Myśla River</i>	During the implementation of the structure: <i>Chlewice-Porzecze. Backwater embankment of Odra River at Myśla River</i> , while constructing embankments near buildings (embankment M to hectometre 0+50) in order to limit the level of emitted vibrations, it is not allowed to use dynamic devices (vibrating rollers) for soil compaction.	Contractor – Site Manager

Environmental Management Plan for the Contract 1A.1: Chlewice-Porzezce. Backwater embankment of Odra River at Myśla River and Modernization of Marwicki polder stage I and II

No	Issue	Place	Mitigation measures	Responsible entity
97.	General conditions concerning nature protection	All work areas	It is not allowed to kill animals during earthworks. All the excavations must be protected against animal access and it is necessary to help animals which entered excavations to get out. In addition, according to the recommendations of herpetologist, if necessary, it is recommended to protect the migration routes of amphibians to water bodies, in order to limit a death rate among amphibians connected with vehicle traffic. It is also necessary to protect all hollows formed in the location of works and within the building sites which are filled with water against amphibian access and breeding in this area – works must be carried out according to the recommendations of a herpetologist.	Contractor – herpetologist
98.	General conditions concerning nature protection	All work areas	During construction works it is not allowed to destroy plants outside the development area.	Contractor – Site Manager
99.	General conditions concerning nature protection	All work areas	The Contractor should provide the schedule for execution of works so that the dates and location of respective stages of construction works are in compliance with requirements of environmental decisions and EMP and so that they do not affect species under protection which are found on the Task implementation area and in its vicinity.	Contractor – Site Manager
100.	General conditions concerning nature protection	All work areas	The Contractor will obtain required permits for deviation from prohibitions in relation to protected species of animals, plants and fungi, issued by RDOŚ/GDOŚ (pursuant to Article 56 section 1 and 2 of the Act of 16 April 2004 on environmental protection or similar legal provisions applicable at the time of preparing and conducting works) – if this will be necessary according to the findings of the Contractor’s environmental team.	Contractor – phytosociologist/botanistentomologist, herpetologist, chiropterologist, water protection expert
101.	General conditions concerning nature protection	All work areas	During the works on rebuilding of flood embankment of Odra River and building of backwater embankment of Odra River at Myśla River, it is necessary to apply utmost care during earthworks in the vicinity of banks of Odra River embankment and banks of Myśla River embankment. Construction works must be led in the manner avoiding their interference with natural overgrowth on the Odra and Myśla rivers banks or with their beds.	Contractor – phytosociologist/botanist

Environmental Management Plan for the Contract 1A.1: Chlewice-Porzecze. Backwater embankment of Odra River at Myśla River and Modernization of Marwicki polder stage I and II

No	Issue	Place	Mitigation measures	Responsible entity
102.	General conditions concerning nature protection	Structure: <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i>	Implementation works must be carried out beyond the bird breeding season and plant vegetation season, i.e. from 1st October to the end of March. If it is necessary to commence works in the bird breeding season and plant vegetation season, it is necessary to start works before 1st March in order to avoid breeding of birds and nesting in the area of works. Before implementation of the construction works, scaring away of the animals, should be provided. Prior to the commencement of works, the Contractor shall obtain permit referred to in Article 56 of the Act of 16 April 2004 on environmental protection, issued by a competent RDOŚ / GDOŚ for purposeful scaring away and intruding avifauna within the project area.	Contractor – ornithologist
103.	General conditions concerning nature protection	Structure: <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i>	Prior to the commencement of earthworks, plants from the entire area at the base of the embankment with a width of 1.0 m on both sides must be mowed and removed.	Contractor – Site Manager
104.	General conditions concerning nature protection	Structure: <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i>	Before removing a layer of humus from the area where embankment will be built, turfs must be routed and soil moved to the outside of the works area.	Contractor – Site Manager
105.	General conditions concerning nature protection	Structure: <i>Modernization of Marwicki polder stage I and II</i>	Before commencing the implementation of the structure, the Contractor must obtain permission, referred to in Article 56 of the Act of 16 April 2004 on environmental protection (or similar provision applicable at the time of preparing and conducting works) issued by a competent Regional Directorate for Environmental Protection and General Directorate of Environmental Protection for purposeful scaring away and disturbing avifauna, under partial and strict protection within the structure impact area.	Contractor – ornithologist
106.	General conditions concerning nature protection	All work areas	The Contractor is obliged to ensure work organization in a way which will shorten the time of works, aimed at minimising adverse impacts on the animals living within the Task area and within its impact.	Contractor – phytosociologist/botanist, entomologist, herpetologist, chiropterologist, water protection expert
107.	General conditions concerning nature protection	Structure: <i>Modernization of Marwicki polder stage I and II</i>	Construction works may be conducted beyond the bird breeding season, i.e. from 1st September to the end of February. Upon having obtained relevant permit issued under Article 56 of the Act of 16 April on environmental protection, also in the bird breeding season (in the event of possible justified necessity of commencing works before the bird breeding season). It is necessary to scare the animals away before starting works.	Contractor – ornithologist

Appendix 1 - Plan of Mitigation Measures

Environmental Management Plan for the Contract 1A.1: Chlewice-Porzecze. Backwater embankment of Odra River at Myśla River and Modernization of Marwicki polder stage I and II

No	Issue	Place	Mitigation measures	Responsible entity
108.	General conditions concerning nature protection	All work areas	In the event of discovering the breeding sites of protected fauna species within the Task implementation area, it is obligatory to suspend works until such sites are left by these species. It is not allowed to kill animals during earthworks and excavations, and it is necessary to enable the animals to exit such places.	Contractor – herpetologist, chiropterologist, entomologist
109.	General conditions concerning nature protection	Structure: <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i>	In case of necessity of destroying the habitat of Roman snail <i>Helix pomatia</i> , the species under partial protection, a permit is required as mentioned in the Art. 56 of the Act of April 16, 2004 on nature protection.	Contractor – entomologist
110.	General conditions concerning nature protection	Structure: <i>Modernization of Marwicki polder stage I and II</i>	The destruction of two nests and habitats of common magpie <i>Pica pica</i> , located on the plot no. 291 district Gryfino I, Gryfino Commune, in relation to the implementation of the structure <i>Modernization of Marwicki polder stage I and II</i> , must be performed with meeting the following conditions: <ul style="list-style-type: none"> • prior to destruction, the nests under consideration must be checked in terms of their settlement, • natural habitats must be destroyed by means of mechanical cutting of trees, • the activities connected with destroying the nests and habitats of the magpie must be carried out beyond the breeding season, • the Applicant must submit a report on the usage of this permission to the Regional Director for Environment Protection in Szczecin by 15 February 2017 (a copy of the permission is included in the Appendix 4 to EMP. 	Contractor – ornithologist

Environmental Management Plan for the Contract 1A.1: Chlewice-Porzecze. Backwater embankment of Odra River at Myśla River and Modernization of Marwicki polder stage I and II

No	Issue	Place	Mitigation measures	Responsible entity
111.	General conditions concerning nature protection	Structure: <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i>	<p>Intentional scaring away and disturbing house sparrow <i>Passer domesticus</i>, Eurasian tree sparrow <i>Passer montanus</i>, short-toed treecreeper <i>Certhia brahcydactula</i>, common chaffinch <i>Fringilla coelebs</i>, European goldfinch <i>Carduelis carduelis</i> and European greenfinch <i>Carduelis chloris</i> in their breeding season, in the localisation of breeding and young species raising, in connection with the implementation of the structure <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i> within Boleszkowice Commune, may happen under the following conditions:</p> <ul style="list-style-type: none"> scaring away and disturbing the species specified in this permission must take place by means of rattles and also through the presence of people on the investment area, as well as through oscillations, vibrations and noise generated by the operation of vehicles and devices, including construction machines and devices used during the project implementation, the project must be implemented under the supervision of the environmental team; the personnel supervising the works will control the correctness of works connected with scaring away and disturbing the species, as well as fulfilling the obligations arising from this decision of RDOŚ (permission of 3rd December 2015, ref. no.: WOPN-OG.6401.210.2015.MKP – a copy of the permission is included in the Appendix 3 to EMP) special provisions of law, partial reports must be submitted to the Regional Director for Environmental Protection in Szczecin on the usage of this permission by 15 January in each year of the permission term and by 15 January 2018 on the entire permission execution. 	Contractor – ornithologist
112.	General conditions concerning nature protection	Structure: <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i>	Due to the protection of the white storks' nests, all the construction works connected with new embankments in Chlewice village and in sectors of embankments that are no more than 200 m far from apparently occupied nests should be carried out outside the nesting period of the white stork falling on 15.III-31.V	Contractor – ornithologist
113.	Limitation of impacts on the protected areas and facilities	All work areas	During the works construction, the Contractor shall observe standards, restrictions and recommendations as well as respect limitations arising from the existence of areas and facilities formed under the Act of 16 April 2004 on environmental protection.	Contractor – phytosociologist/botanist, entomologist, herpetologist, chiropterologist, water protection expert
114.	General conditions concerning nature protection	All work areas	It is not allowed to make use of substances which could be lethal to animals.	Contractor – Site Manager

Appendix 1 - Plan of Mitigation Measures

Environmental Management Plan for the Contract 1A.1: Chlewice-Porzecze. Backwater embankment of Odra River at Myśla River and Modernization of Marwicki polder stage I and II

No	Issue	Place	Mitigation measures	Responsible entity
115.	General findings concerning cultural heritage and monuments protection	All work areas	If during construction works or earthworks the Contractor discovers an object likely to be a historic structure, he is obliged to suspend all the works which could damage or destroy discovered object; furthermore, such a person is obliged to secure the object with available protective measures as well as a discovery site; in addition, this person is obliged to notify the Provincial Conservator of Historical Monuments, and if not possible, Boleszkowice Commune Head, Widuchowa Commune Head or Gryfino Commune Head. The Contractor shall also inform the Engineer about the case.	Contractor – Site Manager
116.	General findings concerning coming across graves with human skeletons during works construction	All work areas	In case of coming across human remains (graves with human skeletons), the Contractor is obliged to inform archaeological supervision and the Engineer. Archaeological supervision makes a decision if there is a need, on the part of the Contractor, to inform the Police.	Contractor – Site Manager
117.	General findings concerning cultural heritage and monuments protection	All work areas	For the purpose of implementing the above EMP conditions related to the protection of cultural landscape and monuments, the Contractor will also obtain the permit issued by the Provincial Conservator of Historical Monuments (PCHM) for the performance of archaeological rescue survey.	Contractor – Site Manager
118.	Human health and safety protection	All work areas	Protect health and safety of people, including fire protection – development of HASP (Health and Safety Plan), obtaining acceptance of Engineer for and implementation of HASP plan, which will remain in force until construction works completion. Requirements with regard to fire protection included in HASP should include also prohibition on bonfires and combustion of flammable materials within the construction site area.	Contractor – Site Manager
119.	Human health and safety protection	All work areas	The Contractor will ensure the preparation, implementation after the approval by the Engineer of Building site organisation design.	Contractor – Site Manager
120.	Human health and safety protection	All work areas	The Contractor will ensure the preparation, implementation after the approval by the Engineer of Quality Assurance Plan.	Contractor – Site Manager
121.	Human health and safety protection	All work areas	The Contractor will ensure the preparation, implementation after the approval by the Engineer of the construction site's flood management plan for the time of the works.	Contractor – Site Manager
122.	Human health and safety protection	All work areas	Allocating dangerous zones which pose a risk to human health and life, and marking, with their use, warning boards, securing against unauthorised access.	Contractor – Site Manager
123.	Human health and safety protection	All work areas	Ensuring health and safety in terms of organisation – the Contractor shall ensure and maintain the safety of the works conducted.	Contractor – Site Manager

Appendix 1 - Plan of Mitigation Measures

Environmental Management Plan for the Contract 1A.1: Chlewice-Porzecze. Backwater embankment of Odra River at Myśła River and Modernization of Marwicki polder stage I and II

No	Issue	Place	Mitigation measures	Responsible entity
124.	Human health and safety protection	All work areas	Ensuring health and safety in terms of organisation – the Contractor shall assign the construction area, as far as possible from the residential development areas in order to eliminate excessive noise and vibration emission at the time of the Task implementation.	Contractor – Site Manager
125.	Human health and safety protection	All work areas	The Contractor shall secure and provide marking on the building site.	Contractor – Site Manager
126.	Human health and safety protection	All work areas	The Contractor shall mark traffic routes on the building site.	Contractor – Site Manager
127.	Human health and safety protection	All work areas	The Contractor shall prepare a traffic plan (evacuation plan) for the building area and site in emergency (fire, accident, technical failure, etc.), which will be approved by the Engineer prior to the commencement of works.	Contractor – Site Manager
128.	Human health and safety protection	All work areas	Protection of health and safety in relation to applied technical measures by the use of efficient machines and tools subject to periodic service in accordance with the manufacturer's requirements.	Contractor – Site Manager
129.	Human health and safety protection	All work areas	Protection of health and safety in relation to applied technical measures by the use of machines and tools according to their intended use.	Contractor – Site Manager
130.	Human health and safety protection	All work areas	Any procedures related to the maintenance of machines and re-fuelling must be performed within dedicated site facilities which are improved and equipped with relevant sorbents. Building site facilities must be equipped with oil derivative substances sorbents throughout the Task implementation period. The Contractor must also provide training to employees within the scope of their correct usage.	Contractor – Site Manager
131.	Human health and safety protection	All work areas	It is required to ensure ongoing monitoring of a technical condition of machines, correct performance of works and strict adherence to the Occupational Health and Safety regulations in order to eliminate an increased noise level within the works zone and in its immediate vicinity.	Contractor – Site Manager
132.	Human health and safety protection	All work areas	The Contractor shall ensure constant visibility conditions during the day and at night of such structures and signage which is obligatory for safety reasons.	Contractor – Site Manager
133.	Human health and safety protection	All work areas	HIV-AIDS prevention. The Contractor shall implement training and programme of raising awareness of spreading HIV-AIDS through an approved service provider and shall take all other measures outlined in the Agreement (General Conditions, Clause 6.7) in order to reduce a risk of HIV transfer among the Contractor's personnel and local population and it shall promote early diagnostics and support for infected people.	Contractor – Site Manager

Appendix 1 - Plan of Mitigation Measures

Environmental Management Plan for the Contract 1A.1: Chlewice-Porzecze. Backwater embankment of Odra River at Myśla River and Modernization of Marwicki polder stage I and II

No	Issue	Place	Mitigation measures	Responsible entity
134.	Soil handling and management	All work areas	If technically feasible and reasonable, soil gathered from earthworks must be, in the first place, managed on the building site through using it for constructing and shaping embankments. The remaining soil material not appropriate for being re-used (e.g. chemically contaminated) the Contractor must manage in accordance with applicable waste regulations.	Contractor – Site Manager
135.	Soil handling and management	Structure: <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i>	Soil material, including peat, extracted during earth works (Structure: <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i>) shall be managed on the construction site by use for embankments construction and forming. Peat shall be beforehand mixed with fertile soil layer and then it shall be used in the covering layer of the embankment.	Contractor – Site Manager
136.	Developing Waste Management Plan	All work areas	Within 42 days from the moment of Works commencement, the Contractor shall develop and submit to the Engineer the waste management plan concerning waste generated during works implementation, taking into account, among others, guidelines and procedures of waste handling, included in EMP and taking into account the possibility of coming across, during works implementation, hazardous substances, such as crop protection chemicals, oils, lubricates, fuels and others (in both language versions of the document) and the need to inform the police in case of finding other unidentified items and objects potentially hazardous for human health and safety as well as environment condition.	Contractor – Site Manager
137.	Contractor’s environmental team	All work areas	The Contractor’s environmental team should be present throughout the whole works construction period.	Contractor – phytosociologist/botanist, ornithologist, herpetologist, chiropterologist, entomologist, water protection expert
138.	Tasks of the Contractor’s environmental team within the Task implementation period	All work areas	The Contractor's environmental team conducts the inspection of the area of works construction prior to their implementation and during such works.	Contractor – phytosociologist/botanist, ornithologist, herpetologist, chiropterologist, entomologist, water protection expert

Environmental Management Plan for the Contract 1A.1: Chlewice-Porzecze. Backwater embankment of Odra River at Myśła River and Modernization of Marwicki polder stage I and II

No	Issue	Place	Mitigation measures	Responsible entity
139.	Tasks of the Contractor's environmental team within the Task implementation period	All work areas	Activities of Contractor's environmental team should include: <ul style="list-style-type: none"> • current inspection of area covered by construction and hydraulic works prior to their commencement and inspections during construction along with preparing relevant reports, constituting documentation of proper performance of environmental team and at the same time informing about due implementation of minimising measures, • formulating and reporting to the Engineer requests with regard to the need of minimizing actions (along with their execution) necessary to alleviate unfavourable effects of Task on natural habitats and species being the object of interest of the Community and subject to national legal protection (species protection) that were unforeseeable and/or impossible to disclose at the stage of agreeing on implementation terms of the concerned Task under the procedure aimed at issuance of the decision on environmental conditions, the activities may be implemented only after the Engineer's acceptance. 	Contractor – phytosociologist/botanist ornithologist, herpetologist, chiropterologist, entomologist, water protection expert
140.	Tasks of the Contractor's environmental team within the Task implementation period	All work areas	The Contractor's environmental team prepares required materials and applications for obtaining permission for deviation from the prohibitions connected with protected species of plants, fungi and animals under conditions and procedure specified in the Act of 16 April 2004 on environmental protection.	Contractor – phytosociologist/botanist ornithologist, herpetologist, chiropterologist, entomologist, water protection expert
141.	Tasks of the Contractor's environmental team within the Task implementation period	All work areas	The Contractor's environmental team submits periodical reports to the Regional Director of Environmental Protection and reports monthly, quarterly and final, submits to Engineer.	Contractor – phytosociologist/botanist, ornithologist, herpetologist, chiropterologist, entomologist, water protection expert
142.	Sapper supervision	All work areas	In the event of discovering unexploded shells the Contractor shall immediately stop the works and evacuate workers as well as notify the police and a licensed sapper unit.	Contractor – Site Manager, constant Contractor's sapper supervision
143.	Sapper supervision	All work areas	The Contractor shall ensure sapper supervision throughout the performance of earthworks, which will consist of on-going inspection and clearance of the area from hazardous objects of a military origin and their disposal.	Contractor – Site Manager, constant Contractor's sapper supervision
144.	Land and landscape protection	All work areas	Slopes and crowns of extended and constructed flood embankment, after the end of construction works, to be sown with grass mix composition of which shall be agreed on with expert – phytosociologist.	Contractor – Site Manager
145.	Protection of archaeological values	All work areas	During the works, continuous archaeological supervision will be ensured.	Contractor – Site Manager

Appendix 1 - Plan of Mitigation Measures

Environmental Management Plan for the Contract 1A.1: Chlewice-Porzecze. Backwater embankment of Odra River at Myśla River and Modernization of Marwicki polder stage I and II

No	Issue	Place	Mitigation measures	Responsible entity
146.	Human health and safety protection	All work areas	Contractor's OHS supervision shall be responsible for adequate marking of building site according to applicable laws. This marking shall be regularly controlled, in the case of destruction or theft of marking the Contractor shall promptly replaced or supplement it.	Contractor – Site Manager
147.	Environment, human health and safety protection	All work areas	The Contractor is responsible for providing training (completed with a test verifying the knowledge of participants) within EMP rules and conditions and protective indications at the time of construction for its managing personnel and engineering–technical personnel supervising the construction works, which must be prepared with the help of Contractor's environmental team. The Contractor's employees who will handle fuels and other oil derivative substances should receive training within the protection of soil and water environment and applicable protective measures, including the use of sorbents.	Contractor – Site Manager
148.	Periodic meetings on implementation of mitigation and monitoring measures	All work areas	During the implementation of the tasks arising from the EMP monthly team meetings PIO, Engineer and Contractor will take place to discuss and monitor the implementation of mitigation and monitoring measures.	PIO, Engineer and Contractor
149.	Noise protection	All work areas	In the areas under acoustic protection and the working sites adjacent to these areas, in order to mitigate the nuisance for inhabitants and environment, it is allowed to use only pumping engines equipped with soundproof housing.	Contractor – Site Manager
07 – REQUIREMENTS AFTER COMPLETION OF WORKS				
150.	Land and landscape protection	All work areas	It is necessary to conduct treatment of the areas sown with grass, including, i.a. double mowing of embankment surface (in June and September – for structure <i>Chlewice–Porzecze. Backwater embankment of Odra River at Myśla River</i> and removal of hard overgrowth. Structure: <i>Modernization of Marwicki polder stage I and II</i> mowing will take place beyond the bird breeding season. This activity comprises also the period of reporting defects.	Contractor – Site Manager
151.	Human health and safety protection	All work areas	It is not allowed to plant trees and shrubs on the embankments in the distance of 3 m from the embankment foot.	Contractor – Site Manager