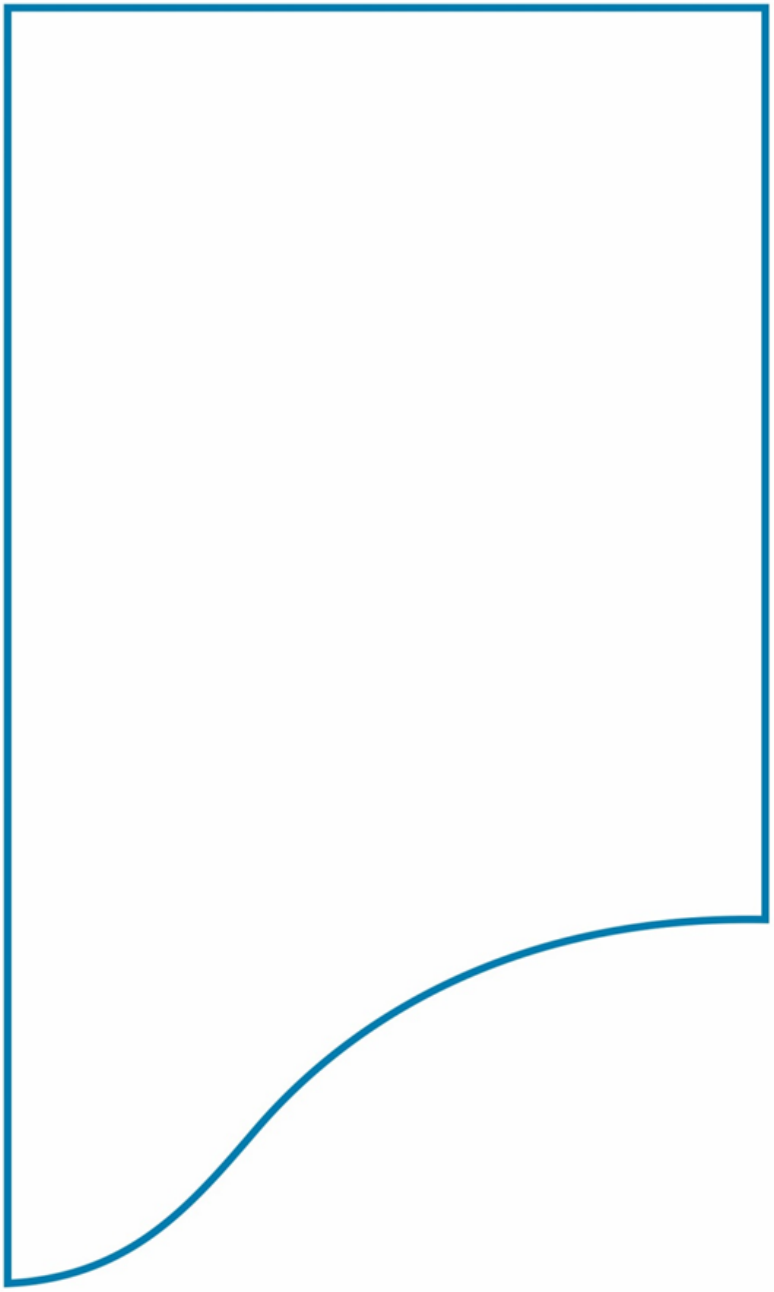
ENVIRONMENTAL MANAGEMENT PLAN



ODRA - VISTULA FLOOD MANAGEMENT PROJECT

Projekt Ochrony Przeciwpowodziowej w Dorzeczu Odry i Wisły

Państwowe Gospodarstwo Wodne **Wody Polskie**

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Projekt Ochrony Przeciwpowodziowej w Dorzeczu Odry i Wisły

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ENVIRONMENTAL MANAGEMENT PLAN

METEOROLOGICAL RADAR STATION IN UŻRANKI

ODRA - VISTULA FLOOD MANAGEMENT PROJECT

DRAFT VERSION

ENVIRONMENTAL CATEGORY B – ACCORDING TO 4.01 BŚ OP

COMPONENT 4:
INSTITUTIONAL STRENGTHENING AND MODERNIZATION OF THE FORECASTING SYSTEM

SUBCOMPONENT 4A:
DEVELOPMENT AND MODERNIZATION OF THE FLOOD HAZARD AND DROUGHT DISASTER MONITORING SYSTEM

4A.3.1 CONTRACT:
POLRAD WEATHER RADAR MODERNIZATION
TASK:
CONSTRUCTION OF THE UŻRANKI METEOROLOGICAL RADAR STATION – 4A.3.1/h

EMPLOYER: Institute of Meteorology and Water Management - National Research Institute

Warsaw – March 2022

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ODRA - VISTULA FLOOD MANAGEMENT PROJECT CO-FINANCED BY:

World Bank, Loan Agreement No. 8524 PL
Council of Europe Development Bank, Frame Loan Agreement No. LD 1866
The European Union Cohesion Fund (POIiŚ 2014 - 2020)
State budget

Table of Contents

LIST OF BASIC DEFINITIONS AND ABBREVIATIONS USED IN THE EMP

Name	Description
World Bank (WB)	International Bank for Reconstruction and Development http://www.worldbank.org/
OHS	Occupational Health and Safety
PCU/OVFMP PCU	Odra-Vistula Flood Management Project Coordination Office www.odrapcu.pl
CEDB	Council of Europe Development Bank https://coebank.org/en/
Environmental decision (ED)	Decision on environmental conditions
EHS Guidelines	World Bank Guidelines on Environment, Health and Safety https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainability-At-IFC/PoliciesStandards/EHS-Guidelines/
ES Policy	World Bank Policy Environmental and Social – ES, on environmental and social issues (i.e., environmental protection, occupational health and safety and social issues, including gender equality, protection of minors, vulnerable people (including the disabled), sexual harassment, sexual violence, HIV awareness and prevention /AIDS)
ESMF	Environmental and Social Management Framework http://www.odrapcu.pl/doc/OVFMP/Ramowy_Plan_Zarzgdzania_Srodowiskiem_i_Społeczenstwem.pdf
GDEP	General Directorate for Environmental Protection
MUWR	Main Underground Water Reservoir
IMGW-PIB	Institute of Meteorology and Water Management - National Research Institute
SWB	Body of Surface Water
GWB	Body of Groundwater

PIU	Project Implementation Unit - a separate organisational unit established within the PIO responsible for the performance of the Contract
PIO/PIO OVFM	OVFM (Odra-Vistula Flood Management Project) Project Implementation Office
PIO/Investor/Empolyer/ Contracting Authority	Institute of Meteorology and Water Management - National Research Institute
Contract 4A.3.1 Contract	4A.3.1 Contract POLRAD Weather Radar Modernization
Task / Task 4A.3.1/h	Task 4A.3.1/h Użranki - construction of a new tower and radar station
LSDP	Local Spatial Development Plan
EIA	Environmental Impact Assessment
GEMP	General Environmental Management Plan
PAD	Project Appraisal Document developed for the needs of the World Bank in order to grant a loan to the Polish Government for the implementation of the ORFPP http://documents.worldbank.org/curated/en/2015/07/24763021/poland-odra-vistula-flood-management-project
PGW WP	National Water Holding Polish Waters
SHP Plan	The safety and health plan drawn up pursuant to Art. 21a paragraph. 4 of the Act of July 7, 1994 - Construction Law
POLRAD	Polish meteorological radar network
POM	Project Operational Manual prepared by the Project Coordination Office of the Odra -Vistula River Basin Flood Protection Project, Wroclaw 2015 http://www.odrapcu.pl/doc/POM_PL.pdf the binding version is the English version: http://www.odrapcu.pl/doc/POM_ENG.pdf
Project/ OVFMP / OVFMP Project	Odra-Vistula Flood Management Project
DEMP	Detailed Environmental Management Plan

EMP	Environmental Management Plan
RDEP	Regional Directorate for Environmental Protection in Olsztyn
RWMA	Regional Water Management Board
State of epidemic	The legal situation introduced in a given area in connection with an epidemic, in order to take anti-epidemic and preventive measures to minimize the effects of the epidemic specified in the act on combating infectious diseases
State of epidemic threat	The legal situation introduced in a given area due to the risk of an epidemic, in order to take anti-epidemic measures specified in the act on combating infectious diseases
VIEP	Provincial Inspectorate of Environmental Protection
Contractor	Consortium INSTAL WARSZAWA S.A. and Leonardo Germany GmbH
Road administrator	An organizational unit that performs the duties of managing public roads within the meaning of the Act on Public Roads

LIST OF SHORT NAMES OF LEGAL ACTS USED IN THE EMP

The following table presents the titles, publication addresses and abbreviations of the names of legal acts referred to in the text of this EMP.

Name abbreviation	Full title (including publication address)
SHP regulation	Regulation of the Minister of Infrastructure of 23 June 2003 on information regarding safety and health protection and the safety and health protection plan (Journal of Laws of 2003, No. 120, item 1126)
EIA Regulation	Regulation of the Council of Ministers of September 10, 2019, on projects that may significantly affect the environment (consolidated text: Journal of Laws of 2019, item 1839)
Nature Conservation Act	Act of April 16, 2004, on nature protection (consolidated text: Journal of Laws of 2021, item 1098, as amended)
The act on public roads	Act of March 21, 1985, on public roads (consolidated text: Journal of Laws of 2021, item 1376, as amended)
EIA Act	Act of October 3, 2008, on the provision of information on the environment and its protection, public participation in environmental protection and on environmental impact assessments (consolidated text: Journal of Laws of 2021, item 2373, as amended)
The act on combating infectious diseases	Act of December 5, 2008, on preventing and combating infections and infectious diseases in humans (consolidated text: Journal of Laws of 2021, item 2069, as amended)
Aviation Law	Act of July 3, 2002, Aviation Law (consolidated text: Journal of Laws of 2020, item 1970, as amended)
Order of the Regional Director for Environmental Protection in Olsztyn	Order of the Regional Director for Environmental Protection in Olsztyn of March 20, 2015, on the establishment of a plan of protective tasks for the Natura 2000 area, Baranowo Masuria Turtle Refuge PLH280055 (Journal of Laws of the Warmian-Masurian Province 2015, 1038)
Order of the Regional Director for Environmental Protection in Olsztyn	Ordinance of the Regional Director for Environmental Protection in Olsztyn of May 20, 2016, amending the ordinance on the establishment of a plan of protection tasks for the Natura 2000 area, Baranowo Masuria Turtle Refuge PLH280055 (Journal of Laws of the Warmian-Masurian Voivodeship 2016, 2210)
Resolution of the Sejmik of the Warmian-Masurian Province	Resolution No. XXXIII / 727/17 of the Sejmik of the Warmian-Masurian Voivodeship of 28 December 2017 on the Protected

	Landscape Area of Legińsko-Mrągowo Lakes (Journal of Laws of the Warmian-Masurian Province 2018, 415)

1. INTRODUCTION

1.1 Project of flood protection in the Odra and Vistula Rivers Basins

The main objective of the OVFMP Project is to protect the population in the floodplains within selected parts of the basins of the two largest Polish rivers, the Vistula, and the Odra, against threats caused by extreme floods. The POVFMP provides for the implementation of the most urgent tasks in the field of flood protection.

OVFMP consists of the following 5 Components:

- Component 1 – Protection against flooding of the Middle and Lower Odra;
- Component 2 – Protection against flooding of the Kłodzko Valley;
- Component 3 – Upper Vistula flood protection;
- **Component 4 – Institutional strengthening and modernization of the forecasting system;**
- Component 5 – Project management and development of further studies.

Component 4, under which Contract 4A.3.1 is being developed, which is the subject of this EMP, is divided into the following two Sub-Components:

- **Sub-component 4A– Expansion and modernization of the monitoring system for flood and drought-related risks;**
- Sub-component 4B – Construction of operational centres in RWMA Wroclaw and RWMA Cracow.

Detailed information on the Project can be found in the Framework Plan of Environmental and Social Management, published, inter alia, on the websites of the World Bank [1] and the PCU of the Odra and Vistula River Basin Flood Protection Project [2]. A detailed description of the Project is also included in the PAD document [3] and in the Project Operations Manual [4].

Due to the extensive scope of works, their location in remote locations and the long duration of the Contract, the General Environmental Management Plan was developed - Guidelines for the Contractor, where the entire Contract was described in a general manner. With reference to this document, as Environmental Decisions are obtained, site-specific EMPs are prepared

1 http://documents.worldbank.org/curated/en/717671468333613779/Poland-Odra-Vistula-Flood-ManagementProject-environmental-and-social-management-framework
2 http://odrapcu2019.odrapcu.pl/popdow_o_projekcie/
3 http://documents.worldbank.org/curated/en/320251467986305800/Poland-Odra-Vistula-Flood-Management-Project
4 http://www.odrapcu.pl/doc/POM_PL.pdf (the valid English version is available at: http://www.odrapcu.pl/doc/POM/ENG.pdf)

in the form of Detailed Environmental Management Plans or Checklists.This document on the meteorological radar station in Użranki is the DEMP.

2. DESCRIPTION OF THE 4A.3.1 CONTRACT AND TASKS RELATED TO THE CONSTRUCTION OF THE UŻRANKI METEOROLOGICAL RADAR STATION

2.1 General description of the 4A.3.1 Contract

4A.3.1 Contract is fully complementary to the other Contracts and together with them concerns the strengthening of the flood protection system in the Odra and Vistula basins. 4A.3.1 Contract complements the activities undertaken so far by IMGW-PIB in the field of flood protection.

The aim of the Contract is to improve the ability to visualize the weather situation in real time and detect dangerous phenomena such as storms, hail, torrential downpours, etc., sufficiently in advance to issue warnings for endangered areas and, if the situation requires it, to activate elements of flood protection. The data obtained from the system, thanks to the high accuracy and resolution, will also improve the accuracy of digital weather simulations for the purposes of short, medium, and long-term forecasts.

The POLRAD system operating so far consists of 8 radar towers located in Legionowo, Rzeszow, Brzuchania, Ramża, Pastewnik, Poznan, Świdwin and Gdansk. The system uses older generation Meteor radars of diverse sizes.

The Contact is described in detail in the General Environmental Management Plan - Guidelines for the Contractor for 4A.3.1. Contact in Chapter 2. Only the most essential information relevant to understanding this document is presented below.

The radar stations will be uniformly equipped with METEOR 735CDP10 radar devices manufactured by LEONARDO Germany GmbH with the following technical parameters:

Frequency tuning range:	5430-5800MHz
Operating frequency used:	5635 – 5645MHz
Operating frequency used:	5650MHz
Pulse duration:	0.33 –3.3µs
Pulse repetition frequency:	250-2000Hz
Power in the pulse:	400KW
Average power:	20W

Antenna polarization:	Dual polarity
Horizontal beam width:	1°
Vertical beam width:	1°
Directional gain:	45dB

The selected units make it possible to recognize the type of precipitation that forms in cloud clusters, i.e., to distinguish between rain, hail, and snow. This possibility is not available to the older generation of radars currently used in the POLRAD network.

As part of the investment, the Terrestrial Remote Sensing Department will be equipped with new computer equipment with full software supporting the data stream sent by individual stations. On their basis, the system creates an interactive weather map of Poland in real time. It also enables the generation of short-term (several hours) meteorological forecasts useful in various branches of the economy.

The investment will end with an Operational Test lasting 30 days. During the test, the reliability of the entire system, the consistency of the transmitted data, the interoperability of each component, and the quality of the generated weather maps will be checked. According to the contract, the Operations Test is expected to end in August 2023.

In accordance with the Investor's requirements, during the works, due to the need to ensure continuous weather monitoring, the sequences of switching off individual operating radars should be agreed with the IMGW-PIB. The Contractor has prepared and agreed with the Employer the General Contract Performance Schedule, which is Appendix No. 7 to the OEMP. The schedule will be updated when changes are necessary, which, however, will not affect the conditions of the EMP.

2.2 Użranki - construction of a new tower and radar station

The planned task will be located on the plot registration number 330/3, Użranki precinct, Mrągowo commune, Mrągowski district, Warmińsko-Mazurskie Province. The area under the radar tower with the infrastructure will cover about 0.03 ha, the rest of the area will be unpaved area, i.e., about 0.27 ha. The tower will be 38.35 m above ground level. Due to the need to ensure the best degree of coverage of the country with the "radar signal", which will increase public safety by including the country's cover into the monitoring system, at the stage of the radar concept in Masuria, alternative locations of the tower were considered.

The locations were considered in terms of shading, Doppler coverage, access to technical infrastructure, location in relation to the Great Masurian Lakes (GML) and the possibility of purchasing land and the planning situation of the commune. The radar in Masuria was to complement the radars in Legionowo and Gdansk, have a good range of Doppler measurements with relation to GML (including good quality warnings for sailors) and cover the areas near the border with Lithuania, Kaliningrad and Belarus. IMGW-PIB analysed several

locations in terms of the above-mentioned parameters and identified the location in Użranki as the most advantageous, in accordance with the table below.

Table 1 Summary of analysed locations

	Botowo	*Kobłuty*	***Użranki***	*Kożuchy*	*Milewo*	*Romejki*
Blind spots	*++*	*+++*	***+++***	*+++*	*+*	*+*
Doppler - coverage	*+++*	*+++*	***+++***	*++*	*++*	*+*
Infrastructure	*++*	*-*	***++***	*+++*	*++*	*+*
Location in relation to WJM	*++*	*++*	***+++***	*++*	*++*	*-*
Land acquisition	*++*	*-*	***+++***	*No data*	*No data*	*No data*

Source: Meteorological radar in north-eastern Poland - site selection report, IMGW-PIB

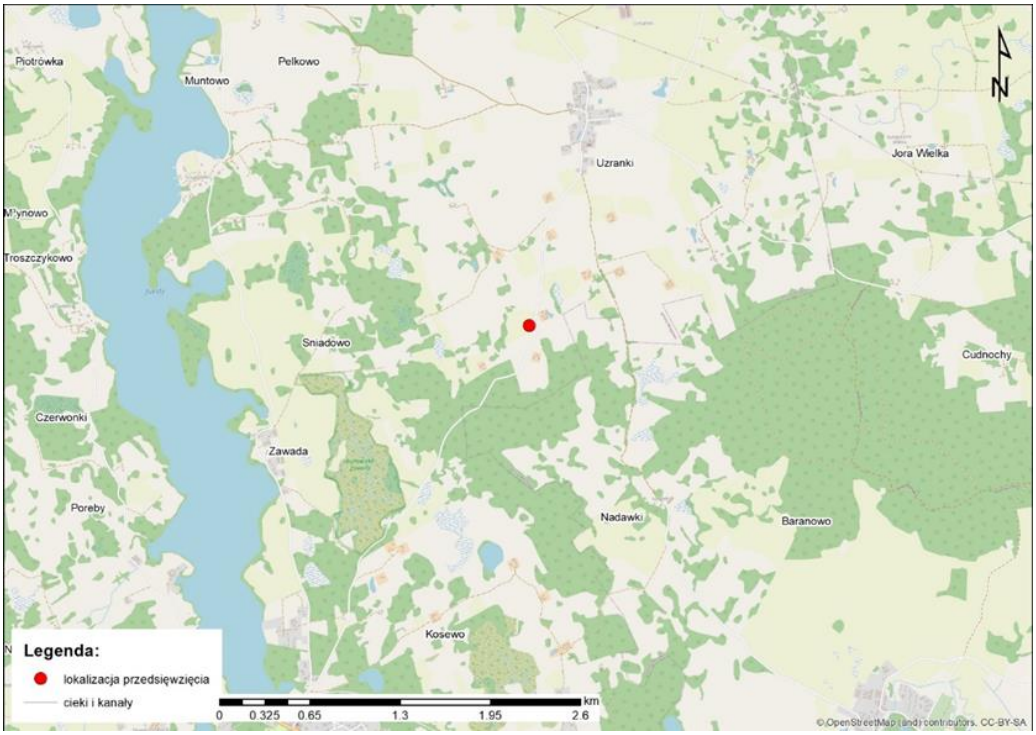

Figure 1 Location of the planned Użranki radar station

Photo 1 Location of the planned Użranki radar station - general view

The subject of the investment is the new construction of METEOR 735 CDP10 meteorological radar station in Użranki. The station is a unified whole and will be performed as a single-stage structure. The planned meteorological radar station will be included in the Polish network of POLRAD meteorological radars and will be an element of the Monitoring and National Protection System of the Polish state hydrological and meteorological service.

The investment will be dedicated to monitoring and observing meteorological phenomena, processing this data, and then sharing weather data with other entities. The designed facility is a maintenance-free structure, in which the stay and access to the devices located in the tower is of a service, periodic nature, resulting from the needs signalled by the ICT system. The facility will be equipped with a METEOR 735CDP10 radar with an antenna installed at a height of 35 m above terrain level. The radar room will be located directly under the dome with the antenna. Technical rooms are planned in the basement of the building. The facility will perform a research and scientific function.

The tower will be an enclosed spatial structure with an octagonal cross-section widened at the top in the place where the room for radar devices is located and at its base. The casing of the vertical part of the tower shaft will be made of trapezoidal sheet metal, and the casing of the widened parts will be made of sandwich panels. The oblique parts of the casing will be made of trapezoidal sheet metal. The weather radar will be built with a white dome 6.5 m in diameter. At the top of the dome, obstruction lights and a lightning rod are installed, which are part of the radar delivery. During the performance of the works, it is expected that temporary buildings will be constructed for the purposes of organizing the construction, transport, and assembly facilities. As part of the investment, construction of an exit from the commune road and a water and energy connection are planned.

As part of 4A.3.1 / h Task, the Contractor will perform, among other things:

- design and construction of a new radar station, with a complete set of technical and auxiliary infrastructure and development of the entire area of the radar station plot;
- construction of foundation excavation;
- construction of the foundation, considering the parameters of the tower;
- construction of the steel structure of the tower;
- construction of the corrugated sheet tower casing;
- construction of internal stairs in a steel structure of steel profiles and openwork lattice plates made of galvanized flat bars;
- building a service platform;
- construction of the radar room directly below the level of the antenna platform;
- building rooms in the basement, being part of the tower body: UPS, power generator, fuel tank for the aggregate, warehouse, utility room, toilet with a washbasin and a toilet;
- execution of finishing works on the tower and rooms with the supply of woodwork, floor, and wall finishing;
- execution of internal electrical and lighting installations;
- execution of a teletechnical installation and its connection to the external optical fibre;
- installing a single-phase winch with a lifting capacity of not less than 250 kg;
- delivery and commissioning of a new power generator;
- delivery and commissioning of a new UPS emergency power supply device;
- delivery and assembly of systems: electric heating, ventilation, air conditioning, technical and auxiliary rooms;
- installation of a new radar, apparatus, and dome;
- construction of an exit from a commune road;
- construction of a hardened access road and an internal manoeuvring area;
- construction of a water connection to the municipal water supply network and its connection to sanitary rooms;
- execution of a drainless septic tank and execution and connection of the sewage system from sanitary rooms;
- fencing the station area with an entrance gate;
- execution of external electrical installation and external lighting;
- execution of systems
  - anti-burglary,
  - fire alarm,
  - video monitoring.

2.3 Technologies and materials used

The table below shows the estimated amount of the main materials that will be used in the construction of the Użranki radar tower. The materials used for finishing works will be environmentally friendly and will not contain hazardous substances. Due to the fact that their quantities are incomparably smaller than those of building materials, they are not listed here.

Table 2 Materials to be used during the construction phase

Range	Description of the main materials	Estimated quantity
Użranki		
The main structure of the tower	Structural steel	40 t
External cover	PUR sandwich board	1100 m^2
Foundations of the tower	Concrete	98 m^2
	Reinforcing steel	10 t
Staircase	Structural steel	7 t
Platform	Structural steel	5 t
Tower roof	Trapezoidal metal sheet	40 m^2
	PUR sandwich board	40 m^2
	Roof membrane	40 m^2
Partition walls of the basement	Aerated concrete	70 m^2
Road layout	Paving stone	430 m^2
	Crushed aggregate	130 m^3

The technologies to be used during the investment do not generate hazardous waste, therefore there will be no need to determine the places of their storage and to develop plans for their management.

For the construction site, a spill procedure will be developed in the event of a leak of petroleum substances.

A Waste Management Plan will also be developed, which will be subject to approval by the Employer, which will describe the types of waste that will be generated, the method of their disposal and the rules of segregation.

3. INSTITUTIONAL, LEGAL AND ADMINISTRATIVE CONDITIONS

3.1 Institutions involved in the implementation of the Contract

The Investor of the Task is the Institute of Meteorology and Water Management - National Research Institute, represented by the Director of the Institute of Meteorology and Water Management - National Research Institute (IMGW-PIB), acting on behalf and for the benefit of the State Treasury

Additionally, at the stage of construction and operation, the Task implementation may require the involvement of public administration bodies at the central, regional, and local level. For the ongoing coordination of the Project implementation by the PIO, an organizational unit was established, the Coordination Office of the Odra-Vistula Flood Management Project.

3.2 Binding acts of national law in the field of environmental protection

Pursuant to Polish law, the investment process in the field of environmental protection is regulated by at least several dozen acts and regulations related to or resulting from provisions in European law. List of selected basic national and European legal acts related to the above-mentioned with the thematic scope and in force during the works on the EMP, see Appendix No. 3 to this EMP - List of legal acts related to environmental protection.

The number and content of the legal acts listed there may change along with changes in the environmental protection regulations in force in Poland. The contractor is obliged, in addition to applying the rules set out in this EMP, to comply with all current legal regulations in the field of environmental protection.

3.3 EIA procedure in Poland

The description of the environmental impact assessment procedure in force in Polish legislation has been included in the Framework Environmental and Social Management Plan (ESMF), published, inter alia, on the website of the World Bank (WB)[5] and the Coordination Office of the Odra-Vistula Flood Management Project[6]. In addition, the legal provisions listed in Appendix No. 3 to this EMP - List of legal acts related to environmental protection apply to the EIA procedure.

[5] *Website: http://documents.worldbank.org/curated/en/717671468333613779/Poland-Odra-Vistula-FloodManagement-Project-environmental-and-social-management-framework*

[6] *Website: http://odrapcu2019.odrapcu.pl/popdow_dokumenty/*

3.4 World Bank guidelines

The Contract in question will be co-financed, inter alia, by the International Bank for Reconstruction and Development (World Bank). For this reason, the conditions for its implementation in the field of environmental protection must be in line with the Operational Politics and Bank Procedures in the field of environmental protection, including policies and procedures of OP / BP 4.01 (for environmental impact assessment), OP / BP 4.04 (for natural habitats) and OP / BP 4.11 (for cultural resources). Description of the above World Bank policies are included in the Framework Plan for Environmental and Social Management (ESMF), published, inter alia, on the websites of the World Bank [7] and the Coordination Office of the Odra-Vistula Flood Management Project [8]. Source texts of the above-mentioned policies and procedures can be found on the World Bank website [7].

3.5 The current state of administrative procedures for the 4A.3.1/h Task

Due to the fact that, according to the definition of the Regulation of the Council of Ministers of 10 September 2019 on projects that may have a significant impact on the environment, the averaged equivalent isotropically radiated power exceeds the limit value, all activities of the Contract related to the installation of new radars are classified as projects that can always significantly affect the environment. affect the environment. For this reason, they require the development of Environmental Impact Assessment Reports (hereinafter referred to as environmental reports) and obtaining the Environmental Decision on the consent for the implementation of the project issued by the Regional Directorate for Environmental Protection. In the case of the construction of the tower in Użranki, it is RDEP in Olsztyn. The proceedings were initiated on July 20, 2021. RDEP decision, mark: WOOŚ.420.8.2021.BG.18 was obtained on December 15, 2021. In addition, on December 28, 2021, the Regional Directorate for Environmental Protection issued a decision reference number: WOOŚ.420.8.2021.BG.22 supplementing the decision. The administrative decision allowing for the commencement of works and commissioning of the radar installation for operation will be obtained by the Act of 8 July 2010 on special principles of preparation for the implementation of investments in the field of flood protection structures. In this case, the Province Office in Olsztyn issued the permit for the investment.

Copies of administrative decisions are included in Appendix No. 4 to this study.

3.6 Mechanisms of complaints and applications

[7] *Website: https://policies.worldbank.org/sites/PPF3/Pages/Manuals/Operational%20Manual.aspx#S3-2 (in the part entitled Investment Project Financing / Environmental and Social Safeguard Policies).*
[8] *Website: http://www.odrapcu.pl/doc/POM_PL.pdf*

All persons affected by the implementation of 4A.3.1 Contract will have access to appropriate and available mechanisms for submitting complaints and applications. Everyone has the right to file a complaint and applications. Submitting complaints and applications is not a subject to fees. Moreover, pursuant to the regulations, the person submitting a complaint or applications may not be exposed to any damage or accusation due to their submission.

Complaints, applications, and opinions regarding non-compliance by the Project Implementation Units of the World Bank's operational policies, the rules described in the Project documents (Environmental Management Plans, Property Acquisition and Resettlement Plans, Project Operations Manual, etc.), environmental procedures, legal regulations, safety rules, conditions construction works and other matters may be directed to PCU OVFMP at the address indicated below:

Project Director
Coordination Office of the Odra-Vistula Flood Management Project
9-11 Jaworowa Ave.
53-123 Wroclaw
Poland

or by e-mail to the address: pcu@odrapcu.pl

More information on the grievance and application mechanisms applicable to World Bank Co-financed Contracts is included in the Operational Manual (POM) of the OVFMP Project, available on the website of the Project Coordination Office8. In addition, a complaint and application form are available on the website of the OVFMP Project[9].

4. DESCRIPTION OF ENVIRONMENTAL, CULTURAL AND LANDSCAPE ELEMENTS

A new radar station will be built on the plot 330/3 in Użranki. New radar devices and equipment for the radar station will be installed in the constructed facility. For activities related to the construction of the tower and the installation of radar devices, an environmental impact report was prepared in accordance with the provisions of the Act of October 3, 2008, on the provision of information about the environment and its protection, public participation in environmental protection and environmental impact assessments and other applicable laws.

The data used to describe the environmental elements come from local offices, portals of state offices, the Central Statistical Office, and scientific studies. Data availability is good, it is up-to-date and with a sufficient level of detail.

9 Website: https://odrapcu.pl/kontakt/

4.1 Elements of the environment protected under the Act of April 16, 2004, on nature protection and information on ecological corridors and biodiversity

National Park

There is no National Park within 10 km from the planned investment.

Natura 2000 Protection Area

The planned investment is located within the Natura 2000 Protection Area - Baranowo Masurian Turtle Refuge (PLH280055). All Natura2000 areas within a 10 km radius are:

- Baranowo Masurian Turtle Refuge – PLH280055 (in the area),
- The Puszcza Piska Forest – PLB280008 (located approximately 3.0 km from the area),
- Ostoja Piska – PLH280048 (located approximately 4.2 km from the area).

Baranowo Masurian Turtle Refuge PLH280055

By order of the Regional Director for Environmental Protection in Olsztyn of March 20, 2015, the Plan of Protection Tasks (PZO) was established for the Natura 2000 Protection Area, Baranowo Masurian Turtle Refuge PLH280055.

During the work on the PZO, several objects of protection were identified:

- 3150 Oxbow lakes and natural eutrophic water reservoirs with communities from Nympheion, Potamion;
- 6210 Xerothermic grasslands (Festuco-Brometea and thermophilic grasslands of Asplenion septentrionalis, Festucion pallentis)
- 6510 Low and mountain fresh meadows used extensively (Arrhenathetion elatioris);
- 7230 Mountain and lowland alkaline bogs, sedge bogs and moss bogs;
- 9170 Central European and subcontinental hornbeam forest (Galio-Carpinetum, Tilio-Carpinetum);
- 91D0 Forests and marsh forests (Vaccinio uliginosi Betuletum pubescentis, Vaccinio uliginosi Pinetum, Pino mugo-Sphagnetum, Sphagnogirgensohnii-Piceetum) and birch-pine swamp boreal forests;
- 1220 European pond turtle (Emys orbicularis);
- 1166 Northern crested newt (Triturus cristatus);
- 1188 European fire-bellied toad (Bombina bombina);

- 1393 Varnished hook-moss (Drepanocladus vernicosus);
- 1903 Yellow widelip orchid (Liparis loeselii).

The existing and potential threats to the above-mentioned habitats and species have also been described. In the area of the village of Użranki, and therefore also in the area of plot 330/3, no occurrence of these valuable habitats and species was found.

Numerous maps of the area covered by the PZO have been developed, including a map of valuable natural habitats (Figure 2) and the location of key areas for the protection of European pond turtle breeding grounds in the PLH280055 area (the map of these areas can be found in chapter 5.1 on the investment impact assessment on the European pond turtle) .

The PZO also indicates obligatory and optional activities related to active protection and activities related to the maintenance or modification of management methods. Activities related to the monitoring of the condition of the objects of protection and the monitoring of the implementation of the objectives of protective measures were indicated, as well as to supplement the state of knowledge about the objects of protection and the conditions for their protection.

Indications for changes in the existing studies of the conditions and directions of spatial development of the Mrągowo Commune and the City and Commune of Mikołajki, local spatial development plans of the Mrągowo Commune and the City and Commune of Mikołajki, regarding the elimination or reduction of internal or external threats, necessary to maintain or restore the proper state of protection natural habitats as well as plant and animal species for the protection of which an area of importance for the Community was designated Baranowo Masurian Turtle Refuge PLH280055.

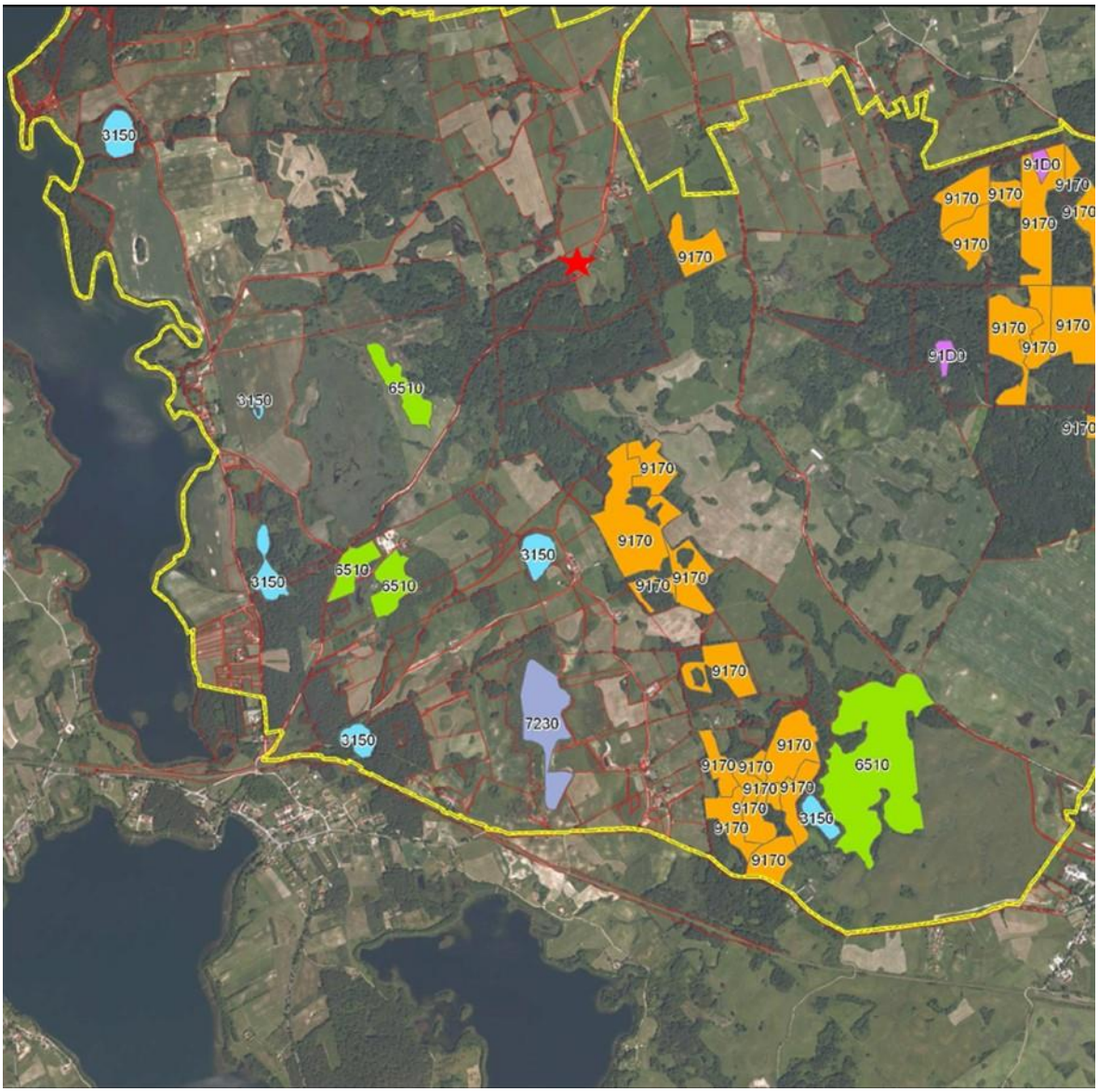

Figure 2. Location of natural habitats occurring in the PLH280055 area (Appendix to the Regulation of RDEP in Olsztyn of March 20, 2015.)[10].

Landscaped Park

The planned investment is not within the boundaries of any Landscape Park. Within a radius of 10 km, at a distance of 3.2 km, there is the Masurian Landscape Park only.

Protected Landscape Area

The investment is located on the border section of the Legińsko-Mrągowo Lakes Protected Landscape Area.

Within a radius of 10 km are also located:

[10] *For an explanation of habitat symbols see page 20*

- Protected Landscape Area of the Protection Zone of the Masurian Landscape Park - West (2.9 km away);
- Protected Landscape Area of the Land of the Great Masurian Lakes (3.9 km away).

The investment is located on the border of the Legińsko-Mrągowo Lakes Protected Landscape Area. Resolution No. XXXIII / 727/2017 of the Sejmik of the Warmian-Masurian Province of December 28, 2017, is currently in force. The area, with a total area of 20 832.34 ha, was established in 1998.

The area boasts terrains of high landscape and natural values, with numerous lakes. The largest lakes are: Legińskie, Juksty, Salęt, Juno, Gielądzkie, Kiersztanowskie, and Dejnowo. Apart from lakes and a network of small rivers, streams and ditches, there are numerous forest complexes with a rich flora and fauna in the Area. Forests cover about 30% of the area. There are mixed forests here with pine, spruce and birch stands. A valuable natural fragment is also the Gązwa nature reserve (204.76 ha), whose task is to protect the nature of the raised bog.

In Resolution No. XXXIII / 727/2017 of the Sejmik of the Warmian-Masurian Province of 28 December 2017 on the Protected Landscape Area of Legińsko-Mrągowo Lakes, it is prohibited to:

1. killing wild animals, destroying their burrows, lairs, other shelters, and breeding places as well as spawning grounds, complex roe, except for amateur fishing and performing activities related to rational agriculture, forestry, fishing, and hunting;
2. implementation of projects that may have a significant impact on the environment within the meaning of the provisions of the Act of 3 October 2008 on the provision of information about the environment and its protection, public participation in environmental protection and environmental impact assessments;
3. elimination and destruction of in-field, road, and water trees, if they do not result from the need for flood protection and ensuring road or water traffic safety or the construction, reconstruction, maintenance, renovation, or repair of water devices;
4. extracting rocks for economic purposes, including peat and fossils, including fossil remains of plants and animals, as well as minerals and amber;
5. performance of earthworks permanently deforming the topography, with the exception of works related to anti-storm, anti-flood or anti-landslide protection or maintenance, construction, reconstruction, repair, or renovation of water devices;
6. changing water relations, if they serve purposes other than nature protection or sustainable use of agricultural and forest areas, as well as rational water or fisheries management;
7. liquidation of natural water reservoirs, oxbow lakes, and wetlands;
8. building new buildings in a 100 m wide strip from:

a) bank lines of rivers, lakes, and other natural water bodies,

b) the range of the water surface in artificial water reservoirs located in flowing waters at the normal damming level specified in the water-legal permit referred to in Art. 389 point 1 of the Water Law Act of 20 July 2017 - with the exception of water facilities and facilities for rational agriculture, forestry, or fishing.

However, the legislator also indicated that these bans do not apply to the performance of tasks for the benefit of national defence and state security, conducting rescue operations and activities related to public safety, implementation of public purpose investments.

Nature reserves

A nature reserve includes areas preserved in their natural or slightly changed state, ecosystems, refuges, and natural habitats, as well as plant habitats, animal habitats and mushroom habitats, as well as creations and components of inanimate nature, distinguished by special natural, scientific, cultural or landscape values.

The planned investment is not in a nature reserve. There is no nature reserve within a 5 km radius.

Ecological corridors

The planned investment is not located in any ecological corridor. There are two ecological corridors within a radius of 10 km:

- The Puszcza Piska Forest (at a distance of approx. 2.5 km);
- Warmia - East Pasłęka Valley (at a distance of approx. 4.0 km).

Monuments of nature

They are individual creations of living and inanimate nature or their clusters of special natural, scientific, cultural, historical or landscape value and characterized by individual features distinguishing them from other creations, large trees, shrubs.

There are no natural monuments in the area of the planned investment. Within a radius of 5 km there are 2 nature monuments at a distance of 2.8 km, both of them are erratic boulders - Gray-pink granites "Gemini" under protection since 1977.

Documentation sites

Documentation site is a form of protection of inanimate nature, including non-isolated or accessible, scientifically, and didactically important places of occurrence of geological formations, fossil, or mineral formations as well as fragments of exploited and inactive surface

and underground workings. The creation of a documentary site takes place by way of an ordinance of the voivode or a decision of the commune council.

There are no documentation sites in the area of the planned investment and within a 5 km radius.

Ecological lands

Ecological lands are the remains of ecosystems important for the preservation of biodiversity that deserve protection – natural water reservoirs, mid-field and mid-forest ponds, clumps of trees and shrubs, swamps, peat bogs, dunes, patches of unused vegetation, oxbow lakes, rock outcrops, slopes, stones, natural habitats, and positions of rare or protected species of plants, animals and fungi, their refuges, and places of breeding or seasonal residence. From November 15, 2008, ecological areas are established only by a resolution of the commune council.

There are no ecological areas in the area of the planned investment. There is one ecological site " Zawady Broads (Rozlewisko Zawady)" within 5 km - 1.3 km away.

Nature and landscape complexes

The nature and landscape complex are a form of nature protection defined as "fragments of the natural and cultural landscape deserving protection due to their scenic and aesthetic values".

The natural and landscape complex is designated to protect exceptionally valuable fragments of the natural and cultural landscape, and to preserve its natural, cultural, and aesthetic values. Activities in the areas covered by this form of protection are conditioned by the development of a spatial development plan for them, which will consider the demands of naturalists and historians.

There are no nature and landscape complexes in the area of the planned investment and within a radius of 10 km.

Biodiversity

The Mrągowo commune belongs to the Mrągowo District. As a rural commune, it is characterized by a proportional share of agricultural land.

The area of the rural commune of Mrągowo is in total 29 514 ha. In terms of the structure of land use, agricultural land prevails in the commune - 61.1%. The largest share of agricultural land in the commune of Mrągowo is:

- arable land - 38.9% of the commune's area,
- orchards - 0.12% of the commune area,
- permanent meadows - 4.4% of the commune's area,

- permanent pastures - 11.9% of the commune area.

Forests wooded and bushy lands cover 20.7%.

There are no significant rock formations that could be used industrially in the vicinity of the planned investment.

The planned investment is located in the area of arable land. In the commune, anthropogenic activities have a significant impact on the landscape and the species structure of plants.

Despite the extremely agricultural nature of the commune, which reduces biodiversity, there are many areas of natural value in its area, which are habitats for valuable plant species, some of which are protected by the establishment of Natura 2000 habitat and bird areas, Protected Landscape Areas, Landscape Parks. In the commune, like the rest of Masuria, there are numerous lakes, characteristic of this lake district and creating a landscape unique in the country. The landscape of the commune is described in more detail in chapter 4.9.

4.2 Nature

Plot No. 330/3 is covered with synanthropic low vegetation, free from trees and shrubs. According to the land register, it was classified as pasture (PsIV) and agricultural land (RIVa). No valuable species of plants, animals, fungi, and their habitats were found on the analysed property.

Therefore, construction works will not have a negative impact on valuable natural resources. During these works, there will be no felling of trees and shrubs. The natural resources related to the earth's surface will not be disturbed either. After the construction of the new tower, the ground around it will be hardened with rainwater permeable material. A lawn of low nature value will be sown on the plot, mowed several times a year to keep the grass up to 10 cm high.

A detailed description of the nature inventory conducted is included in Chapter 4.8.

4.3 Physical and geographical division and geology

According to the physical and geographical regionalization, prof. Jerzy Solon (modification of J. Kondracki's division conducted in 2018), the investment area is located within the Mrągowo Lakeland mesoregion (842.82), the Masurian Lakeland macroregion.

The dominant morphogenetic unit is the undulating ground moraine plateau, made of tills.

Locally, in the area of Polska Wieś (north-west of the planned project) and Kosewa (south-east) there is a wavy, sandy sander.

The landscape of the upland is diversified by latitudinal lines of terminal moraines in the form of hills.

To the west of the area in question, there is a belt of hills (terminal moraines) called the Krzywe Mountains with height differences over 40 m above the plateau level, i.e., locally up to 195 m above sea level (running in the areas of Kolonia Szestno, Miejski Las and Kosewo Górne). These areas are composed of sand, gravel, and clay sediments.

The geological structure of the area of the Mrągowo sheet has been analyzed on the basis of the Detailed geological map of Poland at the scale of 1: 50,000, sheet Mrągowo (Lisicki, 1995,[11], 1997[12]).

The area of the Mrągowo map sheet is located within the Masurian Lake District. The topography is very diversified. The moraine upland is cut by a series of subglacial gutters on one side and diversified on the other with forms characteristic of the marginal zone (kemes, moraines). In the geological structure of the subsurface part of the area in question, only the Quaternary, North Polish glacial and Holocene formations are visible. Till clays and glacial sands with quite a significant share of mineral-organic deposits dominate.

4.4 Soil conditions

The rural commune of Mrągowo, despite its location in the post-glacial landscape, does not have the best conditions for agricultural production, due to the nature of the soils found in its area. Its area is mostly poor soils, prone to degradation. Factors influencing soil degradation include, inter alia, agricultural use and erosion.

In the area of glacial gutters and in outwash areas there are light, permeable soils, V and VI valuation class, weak rye complex and local rye-lupine complex. They are formed of slightly loamy sands lying on loose sands. Their largest concentrations are in the area of Polska Wieś, to the west and south of Mrągowo. On the upland, near the gutter, poorly fertile soils of rye-rye-lupine complexes, V and VI valuation class also prevail.

The soils more useful for agriculture lie on the moraine plateau at a certain distance from the gutter. Locally occurring, most often in land depressions, soils of organic origin (peat and silt-peat) are included in the 2nd and 3rd complex of permanent grasslands.

In total, there are 1,052 farms in the rural commune of Mrągowo. Farms with the size of up to 1 ha constitute 41% of the total number of farms. Farms larger than 1 ha constitute 59% of the total number of farms in the commune, with the largest number of farms larger than 1 ha and less than 5 ha: (20%). Large farms with an area of over 15 ha constitute 21%.

[11] *Lisicki S. 1995 – Detailed geological map of Poland in the scale 1: 50,000 sheet Mrągowo. Central Geological Archive Polish Geological Institute Warsaw.*
[12] *Lisicki S. 1997– Explanations to the Detailed Geological Map of Poland 1: 50,000 sheet Mrągowo. Wyd. Geol., Warsaw.*

Considering that the area for the proposed project has not been used so far in a way other than agricultural, it should be concluded that the soil in the area of the project is not contaminated.

According to the type of use of Corine Land Cover 2018, the area of the planned investment is located in the area of arable land beyond the range of irrigation devices, and according to the Land and Buildings Register, the area for the radar station is agricultural land of the RIVa and PsIV valuation class.

4.5 Surface waters

Surface water bodies

The investment area is located in the Łyna and Węgorapa water region.

According to the country's division into surface water bodies (SWB), the planned investment is located in the catchment area of the Uniform River Surface Water Bodies with the European code RW70002558482953 Dejna to the outflow from Lake Dejnów. The indicated SWB is 103.16 km long, and the catchment area is 273.50 km2. The status was defined as a natural SWB of type 25 (a watercourse connecting lakes). The table below presents an abbreviated assessment of the condition of this SWB.

Table 3. Assessment of the condition of SWB

Assessment of the condition of SWB		
Is SWB monitored?		NM
Code and name of a similar monitored SWB		RW80002564872 (Marycha from Marychna to the tributary of the lake Zelwa)
Assessment of the condition for the years 2010-2012	AT LEAST GOOD	BELOW GOOD
	no data for SWB	not applicable
		GOOD
	GOOD	not applicable
		BAD
Anthropogenic pressures on the condition of waters		
Type of use of the water body		agricultural
Pressures / impacts and anthropogenic threats		
Risk assessment of failure to achieve the environmental goal		not threatened
Protected areas listed in Appendix IV of the WFD		

The areas designated pursuant to Art. 7 for the abstraction of water intended for human consumption	NO	
Areas intended for the protection of aquatic species of economic importance	None	
Bodies of water which are dedicated to recreational purposes, including designated bathing areas	NO	
Water bodies designated as a particularly vulnerable area from which the outflow of nitrogen from agricultural sources to these waters should be limited	NO	
Water bodies designated as water sensitive to pollution with nitrogen compounds from agricultural sources	NO	
Water bodies designated as biogenic substances sensitive areas	YES	
Areas dedicated to the protection of habitats or species where the maintenance or improvement of the condition is a crucial factor in their protection	YES	
ENVIRONMENTAL GOAL FOR SWB	good ecological condition	good chemical condition
The type of derogation resulting from Art. 4 sec. 4 and 5 WFD	None	
Deadline for achieving environmental goals	2015	
Justification for the derogation	Not applicable	
The type of derogation resulting from Art. 4 sec. 7 WFD	4(7)	
Justification for the derogation	Retention preparation of the Dajna River, commune Piecki, Mrągowo, Reszel, voivodeship Warmia-Masuria Province	

Rainwater and snowmelt from development and paved areas

The investment area receives about 630 mm of atmospheric precipitation a year on average. Rainwater and snowmelt will be discharged to the ground spontaneously, flowing from the meteorological radar. The materials of the tower (truss) do not pose a risk of soil or water pollution. No paved areas larger than 0.034 ha are planned in the area covered by the investment, and this hardening will have a permeable surface of rainwater. In addition, rainwater will not flow to adjacent plots of land.

Water monitoring - surface waters

Prepared on the basis of the Report on the state of the environment in the Warmińsko-Mazurskie Province in 2020 (www.gios.gov.pl).

The planned investment is located within the unit with the European code RW70002558482953 Dejna to the outflow from Lake Dejnowa, which in terms of the abiotic typology of watercourses qualifies as type 25, i.e., the watercourse connecting the lakes.

The analyzed SWB was not subject to monitoring in 2016-2017.

Flood risk areas

According to the flood risk maps and flood risk maps published on October 22, 2020, the investment area is not located in the area of particular flood risk.

4.6 Groundwater

In terms of groundwater, the analysed area is located within the limits of the groundwater body (GWB) with the code PLGW700020, which has a good chemical status, good quantitative status, and thus a good general condition. Based on the condition analysis, GWB was determined as not at risk in relation to the achievement of environmental objectives.

There will be no permanent staff in the radar tower. A water connection from the municipal water supply will be made to the designed facility, while the sewage connection will be made to a sealed septic tank located also on the property.

The aquifers are fed by the infiltration of precipitation. The effective infiltration module is spatially diversified. It depends on the amount of rainfall and the permeability of the exposed rocks.

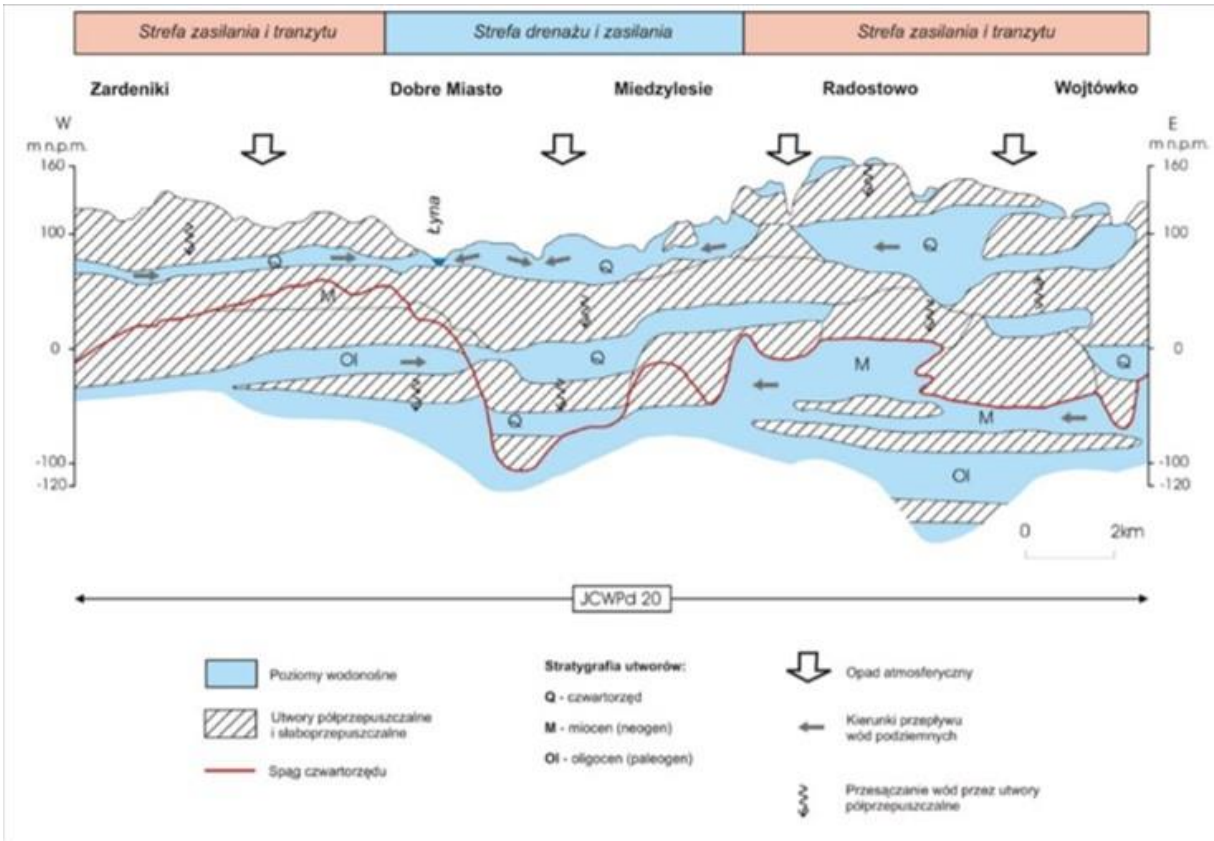

Figure 3. Groundwater GWB code PLGW700020 (source: Polish Geological Institute - National Research Institute)

The investment is not located within the reach of any major groundwater reservoir.

4.7 Climate conditions

The area where the project is located is located in the Masurian climatic region, in the Masurian climatic district. There is a considerable influence of the continental climate here. The Mrągowo Lake District is characterized by the greatest cloud cover, the highest wind speeds and, apart from mountain regions, it is one of the coldest regions of Poland. The average annual temperature is 6.6°C. The highest average highs usually occur in July with the monthly average temperature of 17.4°C. February is the coldest with an average temperature of -4.8°C. Elevation above sea level, a large accumulation of open water reservoirs, as well as wetlands causes that individual seasons enter here at various times than in other regions of the country . The influence of surface waters is also marked by higher air humidity. On average, there are 38 days with fog per year. The sunniest days are in May, June, and September, and the least - in November and December. Throughout the year, there are about 110 days with full clouds and about 160 days with partial clouds. The average annual rainfall is 630 mm. The minimum falls in March (23 mm), and the maximum in July (78 mm). The annual system is dominated by south-west and west winds. Winds from the north-east, north and east are definitely the least frequent. The length of the growing season is approximately 209 days.

4.8 Natural inventory

For the purposes of the environmental impact assessment procedure of this investment, a natural inventory of the radar station area was made, the results of which are presented below.

Inventory of nature is the basic activity necessary to make decisions regarding the implementation of investments in areas of natural value and management, and to optimize this activity.

Characteristics of the area

According to geobotanical regionalization performed by Matuszkiewicz, the area is located in the District of Mrągowo-Giżycki, unit - Świętolipski.

The following hierarchical units are presented below in which the area is located.

Central European Province - Proper Central European Sub-Province

F. Northern Masurian-Belarusian Department

F1. Masurian land

F.1a. West Masurian sub-region

F.1a.3 District of Mrągowo-Giżycki

F.12.3.b. Świętolipski

Potential vegetation

According to the Potential Vegetation Map, for the entire area of the planned investment, the potential vegetation is the Subcontinental hornbeam forest of the subboreal fertile variety (*Tilio Carpinetum, subbor., rich.)*. It should be remembered that the map was made at a scale of 1: 300,000 and is only a fairly significant generalization, it does not include the local variability and mosaicism of habitats, but observing the area from the geomorphological side, such an approach seems completely justified.

Land relief and water system

The topography is varied, characteristic of the postglacial landscape. On plot 330/3, no areas and places filled with stagnant water, watercourses or ditches were observed. There were also no other hydrated and wetlands or ponds. There are two natural water reservoirs on plot no. 355/8, lying in the 100 m buffer of plot 330/3 at a distance of approx. 60 m and approx. 70 m from its E border. The closer reservoir is approximately 4 ares and is heavily contaminated with leachate from a nearby manure depot. The further reservoir has an area of about 0.5 ares

and serves as a watering hole for cattle. These tanks are not connected to any inflow and outflow and are fed by subsurface and rainwater.

During the thaw period (February 2021), these reservoirs were connected. After snowy winters, on the plots surrounding the plot 330/3, but apart from the 100-meter buffer, the appearance of wet and hydrated areas is observed. These are depressions of the terrain with a clay substrate, which hinders the infiltration of meltwater.

Research methodology

The inventory area has been marked out with a training ground that delineates the area of the plot in question. In the area of the indicated plot in the area of the future investment and in the immediate vicinity, 100 m from the plot, the presence of protected and rare species was searched for.

The planned investment will not affect the areas located beyond the border of plot 330/3, which could limit the inventory to its area. However, while implementing good practices regarding the recognition of the natural environment, the inventory was conducted not only in the area of the planned investment. Additionally, inventory works were conducted in the contractual buffer of 100 meters around the indicated plot.

Figure 4. The research area covering plot 330/3 in the Użranki district, along with a 100-meter buffer (underlay - geoportal.gov.pl)

Field work was conducted:

- on October 19th / 20th and November 2nd, 2013.
- October 26th – 27th 2020.
- On February 27th, 2021.

The observations themselves included the entirety of flora, fauna, biota of fungi, but the focus was especially on finding protected and rare species as well as taxa characteristic of habitats of interest to the Community.

Another vital component in defining the corridors was the search for well-trodden paths of animals as well as tracks and traces.

A drone with a camera was also used, allowing to take a series of photos from the tested surface and possible detection of unusual habitats and moving animals.

Flora, fungi biota and plant communities

The botanical and mycological inventory was made during the visit: October 26 - 27, 2020. First of all, protected and rare plants were searched for, due to the limited impact of the planned investment in this area, no extensive research was conducted.

Because trees and shrubs are not intended to be removed during construction. Therefore, there is no possibility and no need to indicate their location and species.

Inventory in the field was conducted in clear weather conditions, determining the distinct patches of vegetation. The aim of the botanical inventory was to identify rare and protected plant species, their habitats and plant communities that could constitute the basis for distinguishing natural habitats protected in the Natura 2000 network.

As field work was conducted in periods when not all species may be present in the study area, the literature, and the Order of the Regional Director for Environmental Protection in Olsztyn of March 20, 2015, on establishing a plan of protective tasks for the Natura 2000 area, Baranowo Masuria Turtle Refuge PLH280055 were used.

The nomenclature of vascular plant species is given according to Mirek et al. (2002), mosses according to Ochyra et al. (2003), and the syntaxonomic classification according to Matuszkiewicz (2001).

Fauna

Mammals

The field work on the inventory of mammals was divided into several groups of species, forcing a different methodology. Large mammals were observed with 10x42 binoculars during transects. Tracking was conducted and traces of presence were searched (droppings, traces of feeding, marking the boundaries of territories, etc.).

The observations were conducted on October 19/20 and November 2nd, 2013, and on 27/02/2021 in conditions of good visibility. On the night of October 19/20, 2013, animals with the type of nocturnal activity were observed.

The nomenclature of mammals used in this study is consistent with the publication "Polish naming of mammals of the world" (Cichocki W. et al. 2015).

Birds

Bird observations were conducted on October 19 and 20, 2013, November 2, 2013, and February 27, 2021, in good visibility conditions.

The studies were performed at various times of the day in the morning 6:30 - 9:00, mid-afternoon 11:00 - 13:00 and in the evening 16:00 - 18:00 in conditions of good visibility. On the night of October 19/20, 2013, owls were observed.

Amphibians and reptiles

Field observations were conducted on October 26, 2020, and October 27, 2020, in good visibility conditions. The research consisted in passing the area several times in order to identify the species of amphibians and reptiles present in the studied areas and to capture the migration routes of batrachofauna. Particular attention was paid to all water reservoirs in the study area, such as: ditches and ruts filled with water. The main research method was visual observation.

Invertebrates

Observations were conducted on transects and using the "on target" method. Typical hiding places were searched - under logs, under stones, etc.

The observations were conducted on October 19 and 20, 2013, November 2, 2013, and February 27, 2021, in conditions of good visibility.

The observers made every effort to ensure that the knowledge was as complete as possible and constituted the best possible basis for issuing an environmental decision, however, it should be borne in mind that the timing of the work being conducted means that many of the migratory species may not be considered.

For the above reason, the literature, and the Order of the Regional Director for Environmental Protection in Olsztyn of March 20, 2015, on the establishment of a plan of protection tasks for the Natura 2000 area, Baranowo Masuria Turtle Refuge PLH280055 were also used.

Biotic components of the environment

Species names of animals under species protection are written in bold letters.

Mammals

Mammalian fauna is typical of the local environment, there are no rare species. Below is a list of them:

Table 4 Mammals in the vicinity of the planned investment

Wild boar (*Sus scrofa*)	huntable species, common throughout Poland, despite significant depletion of the population due to AFS, traces were noticed in the study area near the grove on plot 366/1 near the border with plot 355/8
Red fox (*Vulpes vulpes)*	huntable species, common throughout Poland, appearing on the studied area. In the area under investigation, traces of marking the area and droppings were found. Two individuals were seen in the study area
Roe deer (Capreolus capreolus)	hunting species, common throughout Poland, 3 goats with 4 cubs were observed in the study area (the same herd in two places) and traces of existence were found in two places
European hare (Lepus europaeus)	huntable species, common throughout Poland, traces were observed on the studied area, but no presence was found
Bank vole (*Myodes glareolus*)	one of the most common rodents throughout the country. Numerous in the studied area. A dozen or so used burrows were found, both on the plot 330/3 and on the neighbouring plots
European mole (*Talpa europea*)	partial species protection, common species throughout the country. Numerous traces of the presence of this species were observed in several places throughout the study area

The species composition of mammals is influenced by the agricultural, transformed landscape with a large number of trees and shrubs, and the nearby forests. The area of the future investment is not a significant feeding place.

Birds

The bird fauna of the area is typical of grasslands, groves and small forests surrounding the study area. The list of bird species includes individuals found in the area adjacent to plot no. 330/3. No birds were observed in the area of the future investment, only single flying individuals. The observed species are not associated with nesting on intensively used grasslands, which can only be a feeding place.

Table 5 Birds in the vicinity of the planned investment

Great tit (*Parus major*)	on the edge of trees and bushes and near buildings
European greenfinch (*Chloris chloris*)	on the edge of trees and bushes and near buildings
Eurasian blackcap (*Sylvia atricapilla*)	on the edge of trees and bushes
Raven (Corvus corax)	flying over the area under study
Lesser whitethroat (Curruca curruca)	on the edge of trees and bushes
Corn bunting (*Emberiza calandra*)	near buildings
Tawny owl (*Strix aluco*)	only the voice of 2 individuals during night eavesdropping
Eurasian jay (*Garrulus glandarius*)	flying over the area under study
Yellowhammer (*Emberiza citrinella*)	near buildings
Common chaffinch (*Fringilla coelebs*)	on the edge of trees and bushes

All the mentioned birds are protected species.

No species included in the Red List of Birds of Europe were observed, where there are 15 species that breed regularly in Poland: Greater spotted eagle (EN: a very high-risk species, highly endangered), Black-tailed godwit, Common pochard, Eurasian oystercatcher, Northern lapwing, Eurasian curlew, Common kingfisher, Great grey shrike, Aquatic warbler, European

turtle dove (VU: high-risk species, endangered) and European herring gull, Redwing, Meadow pipit, Red kite and Eurasian coot (NT: lower risk but near threatened species).

Among the bird species observed and listed above, there are no bird species valorising the Special Protection Areas - Natura 2000 in Poland. There are no such SPAs in the area of the planned investment or in the immediate vicinity.

Due to the already completed breeding period, the findings were made in random places that are not related to their nesting and could only be related to the feeding sites as well as flying in and out of them.

Reptiles and amphibians

The herpetofauna of the studied area is poor, typical, and comparable to the surrounding areas. On the plot no. 330/3, there is no breeding and feeding site for amphibians and reptiles. The presence of the following species was found among the reptiles:

Table 6. Herpetofauna in the vicinity of the planned investment

Common toad (*Bufo bufo*)	partial protection. Common toad throughout the country. The presence of 1 specimen was found in the area of the planned investment.
Common frog (*Rana temporaria*)	partial protection. One of the most common of our amphibians. Observed in the area of the planned investment and on neighbouring plots. A total of 3 individuals were found.

Invertebrates

A small number of them were observed in the study area. The grapevine snail and the remains of its shells have not been found. No larvae of imaginary forms or traces of protected beetles have been found.

Protected invertebrate species have not been observed.

Fungi biota

During the inventory works, no species of large-fruited fungi were found outside the area of the planned investment:

No protected species of fungi or lichens have been found.

European pond turtle (Emys orbicularis)

In the plot 330/3 and in the tested buffer 100 meters from it, no living or breeding habitats of the European pond turtle were found.

Description of the Natura 2000 site Baranowo Masuria Turtle Refuge PLH280055 is included in chapter 4.1, and the impact of the planned investment on the European pond turtle in chapter 5.1.

Flora and plant communities

The area of the plot planned for the construction of a meteorological radar and the immediate vicinity is the area covered by the pasture. The flora of the described area is strongly disturbed and strongly influenced by anthropogenic factors. At the same time, it is difficult to find

natural or semi-natural, well-developed, or well-preserved communities. They are mostly pasture, hay, segetal and ruderal species, associated with grasslands and wastelands.

The area used for pasture is not conducive to the processes of natural succession and the development of a different plant cover than typical for such use. The species composition as well as the distribution and condition of the vegetation indicate its uncontrolled growth occurring as a result of self-seeding. The greenery consists of low grassy vegetation - synanthropic in nature, both segetal (herbaceous plants in fields and gardens) and ruderal, i.e., growing in the vicinity of human settlements and roads. There are no trees or shrubs in the plot under the radar. Within 150 meters of the future meteorological radar tower there are only groupings of shrubs, and the only few closer trees (willows) grow about 70 meters to the south-east, above a small body of water serving as a waterhole for cattle.

Pastures and hay meadows cover the vast majority of the studied area. Some of them are mowed several times a year. During the last on-site inspection in February 2021, the condition of the mowed meadows indicated that the last mowing was performed at the end of September or even in October, because the grass had not yet had time to regrow. Plot 330/3 and the surrounding plot 330/4 are still pasture.

Within the plot 330/3 and in the inspected 100 m buffer, no valuable and protected natural habitats and plant species were found. Plant species characteristic of the pasture dominated.

It should be expected that after the completion of the investment, native species, characteristic of the region and the climatic zone, will appear on the site of the future radar station. No agricultural activity: cyclical cultivation of grassland (e.g., grazing or mowing), fertilization (e.g., fertilization with mineral fertilizers, liming), plant protection (e.g., application of herbicides, fungicides, zoocides), in order to create optimal conditions for the growth and yielding of crops, should significant expansion of the feeding base for numerous animal species, as well as the number of shelters for them. A specific and beneficial ecosystem appears in the area of the radar station, which is the opposite of intensively used agricultural areas.

4.9 Description of the monuments and the cultural landscape

The village of Użranki was founded in 1555, and in documents it was written under the names: Oszrannicken, Usranki, Uszranken, Königshöhe. The village was established as a result of selling (for 180 hryvnias) to brothers Wawrzyniec and Mikołaj Klemczyk, six lugs of land, located in the forest called Sądry, in order to establish a rental village (under the Chełmno law) on 60 dragons, with a period of 11 years free of charge (rent exemptions for development time).

In 1838, 52 houses and 308 people were recorded. After the separation of land in 1847, in the following years, peasants established their habitats on their land, outside the village. So-called buildings (colonies) were built. As a result, the buildings in the village changed from compact to colonial and dispersed. At the end of the 19th century, a neo-Gothic church was built in the

village. In 1892, Użranki became the seat of a new Evangelical parish. The parish also included the following towns: Jora Wielka, Jora Mała, Mierzejewo, Notyst Mały, Śniodowo, Recommendation. In 1896, the village had 1,900 inhabitants, including 1,500 Poles.

In 1907, a road from Użranki to Jora Wielka was built. There was also a market here. In 1927, a water and drainage company were established, which drained many of the surrounding meadows. The village was electrified in 1925. In the middle of the 19th century a school was established here. It operated as a two-class village school with 120 children. In 1928, the village had 497 inhabitants, and in 1939, 477 people lived in the village.

According to the register of immovable monuments kept by the Provincial Office for the Protection of Monuments in Olsztyn, the list of monuments within a radius of 5 km from the planned project is presented below.

Table 7. List of immovable monuments within 5 km from the planned investment

City	Distance from the project	Facility	Plot	Commune
UŻRANKI	1 km to the North	PARISH CHURCH UNDER THE INOCATION OF THE APOSTLES PETER AND PAUL AND THE SURROUNDINGS (PLOT)	123/2	MRĄGOWO
BARANOWO	3 km to the Southeast	MANOR PARK WITH AN ADJACENT RESIDENTIAL AND ECONOMIC CONSTRUCTION AREA	-	MIKOŁAJKI (rural area)
BARANOWO	3 km to the Southeast	EVANGELICAL CEMETERY	-	MIKOŁAJKI (rural area)
BARANOWO	3 km to the Southeast	EVANGELICAL CEMETERY	-	MIKOŁAJKI (rural area)
BARANOWO	3 km to the Southeast	MANOR AND PARK COMPLEX (MANOR HOUSE, ANOIL, PARK)	-	MIKOŁAJKI (rural area)
BARANOWO	3 km to the Southeast	PAŁAC ŁĄCZNIE Z PARKIEM	-	MIKOŁAJKI (rural area)
CUDNOCHY	5 km to the East	EVANGELICAL CEMETERY / BY THE CUDNOCHY - FASZCZE ROAD /	-	MIKOŁAJKI (rural area)
JORA MAŁA	5 km to the East	"KOŹLAK" WINDMILL	-	MIKOŁAJKI (rural area)
JORA WIELKA	5 km to the East	EVANGELICAL CEMETERY WITH THE CONCOURSE/BY THE ROAD TO UŻRANKI/	-	MIKOŁAJKI (rural area)

City	Distance from the project	Facility	Plot	Commune
MUNTOWO	3 km to the North-West	EVANGELIC CEMETERY /BY THE ROAD TO ZALEC/	217	MRĄGOWO
MUNTOWO	3 km to the North-West	EVANGELIC CEMETERY / BY THE ROAD TO URŻANKI/	262	MRĄGOWO
POPOWO SALĘCKIE	5 km to the North-West	PARK	88/2	MRĄGOWO

The investment location area is characterized by a monotonous landscape of forests, arable fields, hay meadows, pastures, and rural buildings. Currently, the investment area is surrounded by arable fields, right next to the municipal road. The paved area of the investment will take up to approx. 0.034 ha, and the fenced plot will take up 0.3 ha.

4.10 Description of the landscape

The forest cover index in the commune is 20.7%, according to the Central Statistical Office data for 2019. This value is lower than the value for the voivodship.

The current nature of the vegetation in the commune is the result of human transformations. Most of the forests have been replaced by agricultural land and built-up areas with artificial surfaces and accompanying synanthropic and alien vegetation.

The centuries-old presence of man in this area and his close relations with agriculture have been a factor of balance in nature. In the Mrągowo District, various forms of nature protection have been created, including Natura 2000 areas, landscape parks, nature reserves, protected landscape areas.

The investment is located within the Masurian Lake District. What distinguishes the landscape of the Mrągowo district is the concentration of large, natural water reservoirs, unprecedented anywhere in the country. In total, lakes cover about 14% of the county's area. The second, apart from lakes, a characteristic element of the Mragowo landscape are vast forest complexes extending in the southern part of the district.

The area of the commune belongs to the 2nd Masurian-Podlasie natural and forest region, the Mezoregion of the Mrągowo Lake District (II.2).

4.11 The electromagnetic field

The radar is equipped with an antenna that continuously rotates about its vertical axis. The radar antenna (hidden under a non-conductive shield that protects the antenna against the effects of precipitation - a characteristic sphere) is characterized by a very strong

concentration of electromagnetic energy. As a result, the space around the antenna is swept by the very narrow signal emitted from the radar antenna. Due to the extremely directional features of the radar antenna, the signal on the ground surface and at heights even quite significantly close to the antenna installation height is very small, at ground level immeasurable with instruments with sensitivity adjusted to environmental protection regulations. The field from the radar antenna would be huge if the point in the direction of the antenna's maximum emission was analysed. However, the essence and purpose of such a radar shows that it can never radiate towards any (conductive) obstacle, i.e., buildings, but also trees, or even more places accessible to people, because designing the radar in this way would be absurd. Therefore, the antennas are mounted at a significant height exceeding the height of the existing and expected terrain obstacles, in the case of Użranki 35 m above terrain level. Due to the physical principle of the meteorological radar, the antenna does not emit electromagnetic energy continuously, but it is a pulse signal. Consequently, this signal has a certain average energy, the value of which is significantly lower than the energy value of a single pulse. In the signal emitted from the antenna, there are much more moments of no emission than there are moments of emission (in the installation of weather radars the ratio of emission time to no emission varies within the range of 1: 250… 1: 2000). The latter ratio means that during operation, the antenna emits the energy of the electromagnetic field for one time unit, and for the next 1999 the same time moments there is no emission. This shows the degree of "dilution" of the field energy emission. This also justifies the use of averaged values rather than maximum energy and power figures. Similarly, the principle of operation of the radar results in the fact that the antenna rotates around the horizon. Therefore, the emission in the selected (any) direction occurs only for a brief time, after which the antenna continues its rotation and ceases to "illuminate" this point. This is an example of a non-stationary field emission. The regulations require that the impact resulting from the very short exposure time be corrected in a manner based on physical phenomena. It is understood that the time of "illumination" of an object (eg.a human) by the field beam from the antenna depends on the degree of focus (width) of this energy beam. The aforementioned factors precisely consider these directional features of the antenna.

The large diameter of the reflector in combination with a very high frequency of the signal (5 GHz - C band) causes that the concentration of electromagnetic energy is enormous; the generated beam has a very strong convergence, and after deviating from the axis of the maximum radiation by half a degree, the amount of energy drops to half the maximum. With further deflection, the amount of energy felt in this direction decreases very quickly. As a result of this operation of the parabolic antenna, an energy flux is created that can be compared to a needle with an opening angle of about 1°. No other type of common antenna can concentrate and direct electromagnetic energy so strongly.

The schematic distribution of the field and its relative position in relation to the areas accessible to people in the case of classic construction of meteorological radar towers is shown in the figure below.

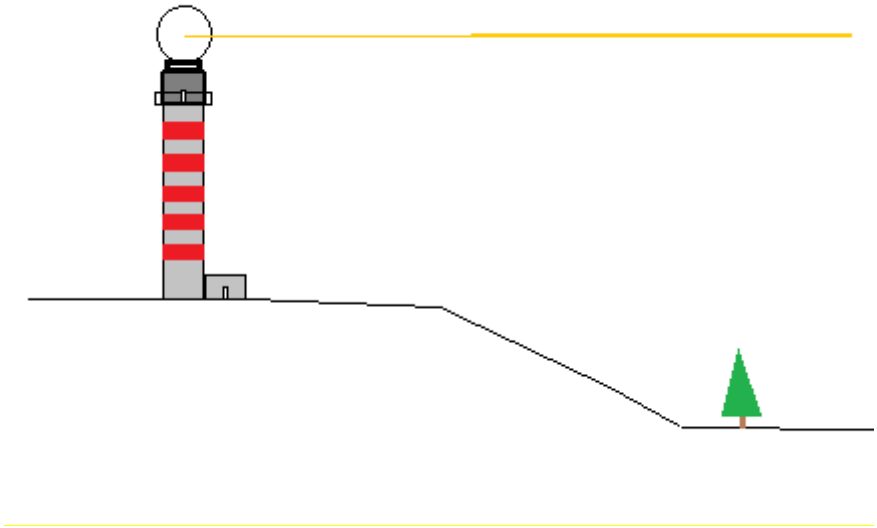

Figure 5 Schematic layout of the radar station

According to the definition of the Regulation of the Council of Ministers of 10 September 2019 on projects that may have a significant impact on the environment, radar devices with an equivalent isotropic radiated power greater than 20kW are classified as projects that can always have a significant impact on the environment. In the case of the METEOR 735CDP10 radars selected for the Contract, the value of this indicator is 436.5 kW, therefore the implementation of the radar installation under the Contract required obtaining the Environmental Decision.

4.12 Acoustic climate

The area of the radar station is not acoustically sensitive. People do not stay here permanently, technical teams usually come once a month for less than 8 hours.

The radar tower is not in the acoustically endangered area. The nearest buildings are located approx. 120 m to the south-east (on the other side of the road), while the compact buildings of Użranki are 1.5 km away.

At the stage of the environmental impact assessment, an impact assessment in terms of noise emission was conducted. According to this assessment, the works related to the investment implementation will result in the installation of the following noise sources:

- construction machinery with noise levels 80-105 dB(A),
- means of road transport with a noise level of approx.102 dB(A).

For the assumed working time (during the most unfavourable hours, time of the day) of all devices, the equivalent sound power level for the sum of sources is 83.9 dB. However, this

value only applies to the immediate vicinity of the equipment and the work being conducted. However, this value is important from the point of view of occupational health and safety, as an emission in the environment, noise is treated considering the decrease in acoustic power.

The above analysis indicates that at the stage of construction and implementation works of the projects in question, the noise will be nuisance within a distance of 100 m from the machines in operation or the works being conducted. The greater the distance from the emitter, the greater the decrease in acoustic power. Considering the location of the habitat buildings at a distance of 120 m, and the compact development (approx. 1.5 km), the implementation stage will not involve any inconvenience and exceeding the permissible standards. At a distance of 120 m, slight exceedances of the 55db standard may occur, however, it should be noted that the noise emission at the stage of project implementation is temporary and will cease when the works are completed.

At the stage of operation, the sources of noise should be indicated:

- Vehicle traffic on the premises of the planned project (1 passenger vehicle, 6 visits a year, up to 8 hours)),
- Power generator - operation for control purposes, a trial run will be conducted once a month for approx. 1 hour, i.e., a maximum of 12 hours / year,
- Air conditioners (2 pcs).

The operation of these devices and car traffic will not have a significant impact, and the permissible standards will not be exceeded in the long term.

4.13 Material goods

The planned investment is located on land used as pasture, and the nearest built-up areas are within a radius of 120 m to the south-east (on the other side of the road), while the compact built-up area of the village of Użranki is 1.5 km away.

There is currently no agricultural production on the plot 330/3.

The POLRAD radar network is registered as Air Ground Equipment and as such their work is protected in accordance with Art. 88 sec. 3. Aviation Law. It should be borne in mind that aeronautical ground equipment are objects:

- whose construction and operation are a public purpose within the meaning of Art. 6, point 1b of the Act of August 21, 1997, on real estate management (Journal of Laws of 2010, No. 102, item 651);
- which are provided with appropriate protective measures to protect them against damage or interference with their operation in accordance with Appendix No. Va, part A – Physical Characteristics, Infrastructure and Equipment, Point 3 (a) d Regulation (EC)

No 1108/2009 of the European Parliament and of the Council of October 21, 2009 amending Regulation (EC) No 216/2008 in the field of airports, air traffic management and air navigation services and repealing Directive 2006/23 / EC (Official Journal No. 309 p. 51 of November 24, 2009);

- which must not be disturbed and whose operation cannot be adversely affected by radiation sources or the presence of fixed or moving objects in accordance with Appendix No. Va, part A - Physical characteristics, infrastructure, and equipment, point 3 (a) and (b). e of the above-mentioned Regulation (EC) No. 1108/2009 of October 21, 2009.

Therefore, protection zones are designated around meteorological radars. They are published on the website of the Civil Aviation Authority[13]. Depending on the topography of the area around a given radar, the protection zones differ from each other, among others, in terms of the permissible object heights to be agreed. It should be mentioned that the protection zones do not imply a construction ban, but only the need to agree on the objects listed in the table below.

The restriction applies to objects, at least some of which are above the area limiting the development. For several types of construction objects, the ranges of the zone for which development restrictions apply, marked with radii (distance from the device), the ranges of the zones, expressed in kilometres.

Table 8 Development restriction zones

Zone number	Area of validity	Description of the objects to which the restrictions apply
1	from 0 km to 0.6 km	applies to: - all facilities
2	from 0.6 km to 1.6 km	applies to: - wind turbines - other objects, if their height exceeds 15 m above terrain level, with the exception of buildings whose tops are not above the existing buildings in their immediate vicinity [above sea level]
3	from 1.6 km to 6 km	applies to: - wind turbines - other objects, if their height exceeds 15 m above terrain level, with the exception: a) buildings whose tops are not above the existing buildings in their immediate vicinity [above sea level] b) stationary, tall objects, the plan of which is the main structure within a circle with a radius of 5 m, e.g., GSM masts
4	from 6 km to 30 km	applies to: - wind turbines

[13] Register of Aviation Ground Devices (RLUN) and Their Limiting Areas (BRA) https://caa-pl.maps.arcgis.com/apps/webappviewer/index.html?id=a1a678f73a2f40b89c54f8cba453f071

5. SUMMARY OF ENVIRONMENTAL IMPACT ASSESSMENTS

5.1 Elements of the environment protected under the Act of April 16, 2004, on nature protection, ecological corridors, and biodiversity

The planned investment is not located in the areas of statutory forms of nature protection, such as: national parks, reserves, landscape parks and nature and landscape complexes. There are no natural monuments, documentation sites and ecological sites in the immediate vicinity.

The planned investment is located in the Natura 2000 area, Masuria Pond Turtle Refuge, below is the assessment of the impact on the above-mentioned area.

The occurrence of the European pond turtle in this area was known already at the end of the 19th century (Młynarski 1954). During this period, the European pond turtle was observed in many nearby regions, but the data are so inaccurate that it is difficult to determine their numbers and determine the main sites. However, the pond turtle was more numerous in this area than today. An example is the 1910 study where Hilbert writes that turtles in Lake Czos are "in the hundreds".

Information from the following years is very modest and does not add much information about the distribution of European pond turtles in the vicinity of Mikołajki. It was not until 1981 that a study by Rudolf Klarowski was published, who after almost 30 years tried to summarize the knowledge about the distribution of European pond turtles in Warmia and Mazury. This article refers to the sites in the area of the Napiwodzko Ramucka Forest, but also mentions several observations near Mrągowo. In the 1980s, the local population also encountered turtles in the area of the "Prawdowskie Marshes", near Mikołajki.

At the end of the 1980s, information on the distribution, biology, and ecology of the European pond turtle in this area began to be collected by Krzysztof Majcher, an employee of the Pedagogical University in Olsztyn. He discovered a very important population of European pond turtles in the vicinity of Baranów and Zawady in the commune of Mikołajki ("Masuria European Pond Turtle Refuge") (Bogdaszewska et al. 2004), which is the closest place of occurrence of European pond turtles from the planned investment.

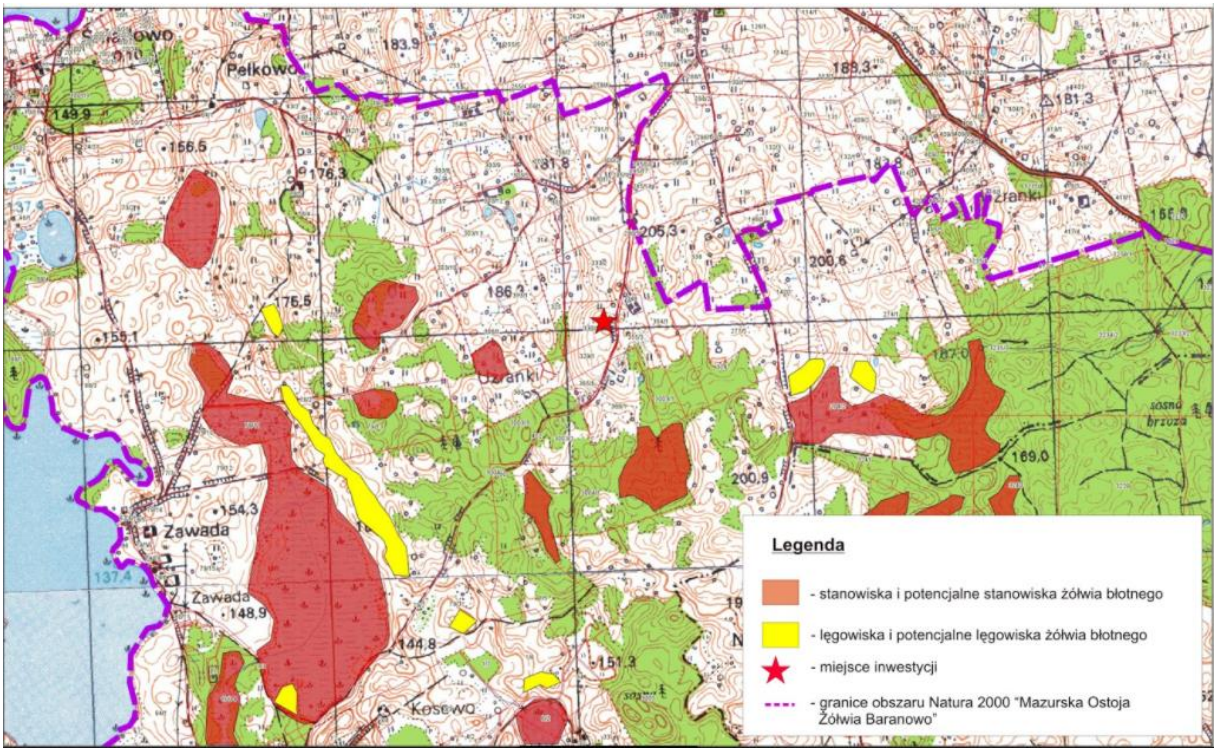

Figure 6. The occurrence of the European pond turtle (Emys orbicularis) in the area of the planned investment

The beginning of the 21st century is the intensification of observations in the area of the refuge. Over the last 10 years, almost 30 adult specimens have been tagged in this area and several breeding grounds have been detected. Juveniles were also observed, which proves that this population is reproducing. Genetic studies (Dmitryjuk 2007) confirmed the high genetic variability of this population. This may be because the population of these long-lived animals used to be much larger than it is today.

At present, the "Mrągowsko-Mikołajska" population of the European pond turtle can be estimated at about 70-100 adults. Turtles in this area are found in several main sites. They occur in the Natura 2000 site " Masuria European Pond Turtle Refuge ", but some sites are also located in the northern part of the Natura 2000 site " Piska Nature Refuge" PLH280048.

Temporary impact of the investment on European pond turtles.

The investment area is 1.5 km from the nearest permanent and well-documented place of the European pond turtle (Photo 2).

Photo 2. European pond turtle site - ecological site Zawady broad

At a distance of 500 m and approx. 800 m from the planned investment, there are backwaters, which may be the site of pond turtles (Photo 3). These broads are close to other very favourable habitats for the European pond turtle, which form a natural corridor that connects with the habitat of the European pond turtle - the Zawada ecological site. Therefore, it is very likely that European pond turtles could use these broads.

Photo 3. A broad in the vicinity of the planned investment

The construction work itself will not affect this water broad.

This investment is located on the top of a hill that slopes gently to the south side. The southern slopes are now used as pasture (photos 4 and 5). The trophy of this area makes it impossible to consider this place a potential breeding ground for European pond turtles. This place is very fertile, and the soil is mostly clay. European pond turtles do not lay eggs in such habitats (poor soil temperature). The nearest potential breeding ground is located about 850 meters south-east of the investment site.

Photo 4. Investment site

Photo 5. Southern slope near the investment

During construction, this investment will have a very limited impact on the environment, important for European pond turtles (the area under the construction will be about 80 m2), therefore the investment in progress will not affect the local population of European pond turtles.

Long-term impact of investments on European pond turtles

European pond turtle is sensitive to changes in the environment in its immediate vicinity, e.g., a drop in the level of groundwater and surface water. The investment during operation will not have such an impact. Another very important element negatively affecting the population of the European pond turtle is the increase in human pressure, but the investment will not increase human pressure during its operation.

In view of the above, it should be stated that the project will not in any way affect the statutory forms of nature protection and Natura 2000 sites.

The planned investment is located on the border of the Protected Landscape Area of Legińsko-Mrągowo Lakes, however, it should be stated that the planned investment, due to the lack of direct interference with the places and habitats for which the Protected Landscape Area was established, and the long distance of the investment from other Protected Landscape Areas, should be stated that the planned the project will not affect the protected landscape areas.

Due to its nature, the planned investment will not have a negative impact on the ecological corridors.

5.2 Nature

In the area and in the immediate vicinity of the Użranki meteorological radar station, during the nature inventory, no valuable natural habitats and species of plants, animals and fungi were found, and therefore no negative impact on protected areas and other forms of nature or landscape protection as well as on valuable habitats and species of plants, animals, and fungi. Due to the implementation of construction works, removal or destruction of valuable natural habitats is not planned.

Prior to the commencement of works, an inventory of vegetation will be conducted in order to designate the sites, primarily of trees and shrubs, to be protected.

Moreover, the investment takes up a small area and has a point character, so it is not linear, which could indicate a threat to migrating species. The fence will have a space of at least 10 cm between the ground surface and the lower edge of the fence mesh, allowing for the free movement of small animals. Large animals will be able to bypass the investment area through the neighbouring areas which are still used for forests and agriculture. Therefore, the creation of the planned installation will not contribute to the creation of a migration barrier.

Moreover, no residential buildings are planned in the study area, which is often the cause of a reduction in biodiversity. The investment will not affect species perceived as conflicting and will not increase the penetration of alien species.

There are no plans to clear trees and bushes.

The implementation of the investment will not adversely affect the species of amphibians, reptiles, and invertebrates.

The planned installation will not negatively affect the European pond turtle, nor its potential habitat, inventoried within 500 m from the planned project. This issue is discussed in more detail in chapter 5.1.

The planned installation will also not have a negative impact on the bats. Transparent vertical surfaces with which these mammals may collide during flight can pose a threat to bats. This threat especially applies to young individuals learning to fly, in which the echolocation system of spatial orientation is not yet fully developed.

The potential impact of the investment on local bird populations may be twofold:

- indirect impact such as loss of natural habitats, fragmentation of habitats and / or their modification,
- direct impact such as the possibility of creating alternative feeding or nesting sites.

The transport of devices, equipment, and materials as well as the operation of machines used for construction works will have a very limited and short-term impact on animals (mainly birds), which occasionally use the area of the current radar station as a feeding place.

However, this will be a short-term and limited impact, and the implemented mitigation measures will significantly minimize it.

5.3 Land surface and landscape

The implementation of the planned task of 4A.3.1 Contract in Użranki does not involve the felling of trees and shrubs requiring, in accordance with Polish law, reporting to the appropriate authority.

The investment with the infrastructure will cover approximately 0.03 ha, the rest of the area will be unpaved area with an area of approximately 0.27 ha.

The impact on the earth's surface will relate to the permanent occupation of a small part of the area under the meteorological radar tower, as well as the temporary occupation of the area for the purposes of the location of the work facilities. This impact occurs on a small spatial scale and will not cause a negative impact.

At the Użranki site, where the new tower will be built, there will be an impact on the landscape. It is related to the construction of a new technical facility with a height of 38.35 meters above terrain level. The subject will be clearly visible on the horizon.

The perception of landscape is always subjective, depending on personal feelings, therefore aesthetic assessments can be extremely diverse. Opinions may be negative, which will be related to the presence of foreign technical structures in the landscape, and positive, related to the country's meteorological safety and the appearance of the meteorological radar, as well as its use as a landmark in the field.

The impact on the landscape will be permanent.

5.4 Soils and land

Due to the local and point use of the area for the radar tower, the project will not adversely affect the geological and soil conditions.

Impact on soils and land may result from local degradation of the soil cover during earthworks at the construction site. The impact will be local and its intensity will be small, short-term, and reversible. The impacts will relate to the temporary occupation of the area for the purposes of locating the work facilities. This impact occurs on a small spatial scale and will disappear with the completion of works and the liquidation of temporary occupancy sites.

After the possible end of the radar use, the area will be put into another use, impossible to define today. In the case of radar on agricultural land, for primary use.

Additionally, at this stage, works related to land reclamation and leaving it in a condition not worse than before the start of the investment will be conducted. These works will be

conducted in accordance with the regulations that will be in force at the time of the dismantling of the meteorological radar and with the use of machines and devices that will allow the intended effect to be achieved.

There will be no impact on land and soil during operation.

5.5 Surface waters

It is planned to build a new meteorological radar station, i.e., a facility that does not require a permanent water supply either for technological or social purposes. There will be no permanent staff working in the facility.

Potential contamination of surface waters at the construction stage is not diagnosed due to the proper technical condition of construction machinery and equipment.

The location of the planned investment will not conflict with surface waters.

Operation of the meteorological radar will not affect surface waters. Estimated water consumption for a radar station, in accordance with the ordinance of the Minister of Infrastructure of January 14, 2002, on determining the average standards of water consumption, is set at 50 dm3 / inhabitant x day, however, it should be noted that only service teams will use it, whose presence is estimated for 1 day a month.

Bearing in mind the above data:

- no technological sewage will be generated during the implementation of the investment,
- the generated domestic sewage will be collected in a sealed tank and exported by authorized entities,
- the project does not provide for the transformation of watercourse beds or water reservoirs, the flow of watercourses will not be changed, as well as changes in the quality of surface waters,
- rainwater from the areas covered by the investment will freely infiltrate the soil.

When using the fenced area of the plot with a radar station, no pesticides or mineral fertilizers will be applied.

The implementation of the investment will not have a negative impact on the condition of surface waters. During the operation of the meteorological radar, no pollutants are emitted.

5.6 Groundwater

Potential contamination of surface waters and shallow circulation groundwater is not diagnosed at the construction stage due to the proper technical condition of construction machinery and equipment.

A water supply connection will be made to the designed facility from the municipal network on the neighbouring plot, while the sewage connection will be made to a sealed septic tank located on the property.

During the construction works, proper organization of the construction site and proper storage of building materials will be ensured. Appropriate organization of works will allow to protect the surface of the site and, consequently, also surface and groundwater against contamination.

There are no wetlands in the area designated for the investment, and thus no hydrogenic ecosystems.

Continuous groundwater monitoring is not required for the project in question. Operation of the new meteorological radar will not affect surface and groundwater. Estimated water consumption, in accordance with the ordinance of the Minister of Infrastructure of January 14, 2002, on determining the average standards of water consumption, is determined at 50 dm3 / inhabitant x day, however, it should be noted that it will be used only by service teams whose presence is estimated 1 day a month.

Bearing in mind the above data and the following findings made in the Environmental Impact Assessment Report for the planned Investment:

- no technological sewage will be generated during the implementation of the investment,
- domestic sewage generated during construction will be stored in closed containers of portable toilets and sent for disposal by the toilet service,
- • it is planned to store 1000 l of fuels on the investment site (for the aggregate), however, in order to minimize the possibility of contamination of the soil by petroleum compounds, the fuel tank will be double walled, with anti-corrosion protection and will be secured with a septic tank capable of receiving the entire contents of the tank and will be located inside the building. There will be a sorbent container in the room, to be used in the event of a spill of fuel while refuelling the tank,
- rainwater from the areas covered by the investment will freely infiltrate the soil.

When using the fenced area of the plot with a radar tower, no pesticides or mineral fertilizers will be applied.

The operation of the radar tower in Użranki will not have an impact on the state of quality parameters and will have an immeasurably minimal impact on the quantitative parameters of groundwater.

5.7 Climate

Due to the nature of the task under 4A.3.1 Contract in Użranki, no negative impact of this investment on the climatic conditions around the site of its implementation is expected, both at the stage of works implementation and at the stage of operation.

The implementation of this task will not significantly affect the emission of greenhouse gases and the increase of climate change.

The implementation of 4A.3.1 Contract indirectly contributes to limiting the negative effects of the phenomena accompanying climate change.

The applied technological solutions will ensure resistance to climatic conditions, including extreme conditions such as strong and gusty winds. Appropriate security and the dome will prevent their destruction during rainfall (including hail and snow), lightning protection systems will ensure safety during storms and lightning strikes, and appropriate insulations will ensure safety during flooding.

5.8 Cultural landscape and monuments

Implementation of the task with Użranki under 4A.3.1 Contract, may affect this element of the environment only through increased traffic of motor vehicles during the work, but it will be a short-term impact, vehicles will move at certain hours along communication routes, it may cause increased noise , exhaust emissions and the induction of vibrations, however, will not have a significant negative effect.

The planned implementation of the task will not be located within the conservation protection zones, and there are no identified objects of cultural value in the area of the investment.

Due to the distance of the investment from the nearest cultural and architectural heritage, the meteorological radar station in Użranki will not have a negative impact on this element of the environment during its operation.

5.9 Electromagnetic field

Protection of the environment against electromagnetic fields consists in the obligation to ensure that, in any place accessible to the public, there are no fields, the values of which would exceed the limit values. The Regulation of the Minister of Climate of February 17, 2020, on the methods of checking compliance with the permissible levels of electromagnetic fields in the environment specifies the details of the environmental compliance test. Regulation of the Minister of Health of 17 December 2019 on the permissible levels of electromagnetic fields in the environment, the values define the power density of 10 W / m2 as the limit value for humans. For the purposes of the preparation of the Environmental Impact Assessment reports

for individual locations of the Contract, computational analyses were conducted to determine the hazardous area for humans. The calculations show that the radius of the danger zone closes at a distance of 59 m around the antenna axis, however, due to the convergence of the radar beam, this area does not exceed the zone of several centimetres at the height of the centre of the radar antenna, i.e., 35 m above ground level, high above the zone accessible to humans. The locations of the radar towers have been selected in such a way that the likelihood of high construction in the immediate vicinity of the radars is excluded. Considering the results of the calculations and the above-mentioned conditions related to the construction method, it can be concluded that the electromagnetic radiation generated by the POLRAD radars do not have a detrimental effect on humans, and their impact on the environment is negligible. Due to the large mutual distance between radar stations and the difference in the absolute ordinates of the assembly of individual radar devices, resulting in the lack of overlapping of the radiation impact planes, there is no cumulative effect of the electromagnetic impact from meteorological radars being the subject of the Contract.

During the construction phase, the radar's electromagnetic radiation occurs only in the last stage of construction and is associated with the commissioning and testing of the installed device.

The electromagnetic force of radar is reversible, long-lasting, and local.

5.10 Sanitary condition of the air

The sanitary condition of the air will be influenced by the emission of pollutants related to the operation of machines, vehicles, and devices as well as the lifting of fine dust fractions from unpaved soil at the construction stage. The impact is expected to be local, short-term, and of minor intensity.

At the operational stage, the impact on the air condition will be limited to occasional exhaust emissions resulting from service and maintenance works on the meteorological radar and the use of an emergency unit in the event of a power failure.

As a result of the Contract implementation, there will be electromagnetic interaction. It was described in subsection 5.9 Electromagnetic field.

5.11 Acoustic climate

The sources of noise in the implementation of 4A.3.1 Contract will be the operation of construction machinery and the movement of vehicles (including trucks) at the construction stage. The impact will be periodic as well as local (limited to the vicinity of the radar and roads through which transport will take place). The construction site is not located in an acoustically protected area, nor will it have a significant negative impact on acoustically protected areas and will not result in long-term and significant exceeding of the permissible noise standards for these areas. The area of exceedance of noise standards has been defined up to 100 m from

the investment, therefore, occasionally a slight exceedance of the standards for the area of habitat development may occur.

The housing development is about 120 m away, there are no other areas under acoustic protection.

No significant and long-term noise emission is expected at the investment operation stage.

5.12 Material goods

The planned investment is located on a plot of land on which agricultural production is not currently conducted, despite its intended use in the land register. Within the studied area, there are no buildings, infrastructure or objects of significant material value that could be damaged as a result of the investment. Apart from the technical infrastructure, the construction of the meteorological radar will not affect other material assets.

The nearest single settlement buildings are located within a radius of 120 m to the south-east (on the other side of the road), while the compact buildings of Użranki are 1.5 km away. The implementation of the project will not change the areas adjacent to the plot.

The impact on the technical infrastructure, especially roads, in connection with the mitigating measures taken, will be negligible or will not occur.

Due to the scale of the planned project and its location, the impact on material goods will be negligible. Due to the location of the existing radar station, there are no grounds for a decrease in the value of the land in their vicinity.

The analysis conducted for the investment in question shows that, under the conditions specified in the documentation prepared for the purposes of the proceedings, the environmental quality standards will be met in the area of the investment as well as outside its area.

This means that the investment in question will in no way introduce restrictions on the use of neighbouring properties in connection with the works conducted.

5.13 Human health and safety

The works conducted in Użranki under 4A.3.1 Contract will not cause a temporary deterioration in the quality and standard of living of the inhabitants. Any possible negative impact on traffic conditions will be temporary and limited and will cease at the end of the construction phase. In order to minimize this impact, appropriate mitigation measures will be provided.

Improper organization of works and non-compliance with relevant standards could lead to soil and water contamination with petroleum substances at the stage of construction works,

which could result in a direct or indirect threat to the health of the Contractor's staff or local residents. The issues related to the possibility of a failure or catastrophe are discussed in chapter 5.14.

In order to minimize the occurrence of health and safety hazards in the environment and on the construction site, it is required to prepare a Health and Safety at Work Plan and comply with the Health and Safety rules and the labour Code. While working on the tower, the radar will be off, so there will be no electromagnetic interaction.

During the operation of the radars, there will be no negative impact on the health and safety of the local residents. The negative influence of electromagnetic fields occurs at the height of the antenna centre in the zone of approx. 59 m. Appropriate procedures and security measures at IMGW-PIB prevent the Institute's employees from staying in this zone while the antenna is in operation. The area around the radar is fenced and is a closed zone, that is, outsiders cannot enter its area. Moreover, even if an outsider could enter the fenced area around the radar, the radiation at ground level is immeasurably low, i.e., zero.

5.14 Extraordinary threats to the environment

The crisis situation

In the event of a crisis situation, the competent services should be notified in the first instance:

Services	Phone number
Emergency number from a mobile phone	112
Police	997
Fire brigade	998
Emergency medical Services	999

The Contractor's obligation is to counteract threats in the first place, and in the event of their occurrence, limit the consequences of their occurrence. The basic threats are characterized below, but the list of given threats is open and does not exhaust the risk of other threats, not listed in the EMP.

In the event of any crisis situation, the Contractor is obliged to immediately notify the relevant services as well as the Employer and the Project Coordination Office. In the event of any crisis situation, the Contractor is obliged to immediately notify the relevant services as well as the Employer and the OVFMP Project Coordination Office.

Windstorms and hurricanes

The Contractor is responsible for ensuring safety in the area of the Contract implementation. The procedure to be followed in the event of extreme weather phenomena, such as storms and hurricanes, but also torrential precipitation, hailstorms, and other extreme phenomena, will be included in the SHP Plan prepared by the Contractor.

Leakage of oil derivatives

Another type of extraordinary hazard is the leakage of petroleum substances into water or soil. In order to reduce the risk of environmental pollution, appropriate preventive measures will be implemented, including for proper organization and equipment of construction sites and back-up facilities, equipping places of leakages with appropriate sorbents and ongoing control of the condition of used construction equipment.

In the event of a spill of petroleum derivative substances, measures should be taken to limit the spread of contamination and remove them immediately.

In the case of the presence of contaminated soil layers, they should be managed in accordance with applicable regulations in this area.

Finding unexploded ordnance and misfires

The Employer did not control the work site for the presence of unexploded ordnance or misfires. In connection with the above, the Contractor is obliged to ensure engineer supervision (sapper supervision of the Contractor) during the conduct of earthworks, consisting in ongoing checking (before the commencement of works) and cleaning the area of dangerous objects of military origin along with their disposal. Due to the fact that the area is not crossed by pipelines and installations that make it difficult to analyse the area for unexploded explosions, a sapper's expertise prior to the commencement of construction works will be sufficient for the investment. Sapper supervision during earthworks will not be necessary.

In the event of finding unexploded ordnance during the works, the Contractor should immediately stop work, evacuate workers, and notify the engineer supervision, police, and the Employer.

It is absolutely forbidden to pick up, dig up, bury, move, throw into fire or water, etc. items that are potentially dangerous of military origin found before the arrival of the Contractor's engineer supervision or the military demining patrol.

Fire

During the construction phase, a fire-related emergency may occur (e.g., due to equipment failure, negligence of personnel, explosion of flammable substances, lightning strike, etc.). The occurrence of such a situation poses a threat to both the Contractor's staff and the environment.

The Contractor is responsible for fire protection in the area of 4A.3.1 Contract implementation. A detailed procedure in the event of a fire will be included in the SHP Plan prepared by the Contractor.

Epidemiological threat

If there is an epidemiological emergency or an epidemic during the implementation of the works, the Contractor will be obliged to comply with the legal requirements, in particular the Act of 5 December 2008 on preventing and combating infections and infectious diseases in humans (consolidated text: Journal U. of 2020, item 1845), all obligations resulting from the declaration of an epidemic or epidemic threat and relevant guidelines of the World Bank. The Contractor's actions should reduce the risk of spreading infection both in relation to the Contractor's staff, as well as the Employer and the local community.

Notwithstanding the above, the Contractor will implement an awareness-raising program in the field of spreading infectious diseases (e.g., HIV-AIDS, COVID 19).

5.15 Other ES risks

The implementation of the task of Contract 4A.3.1 in Użranki, may involve a number of impacts related to ES issues (i.e., environmental, social, and occupational health and safety aspects). In addition to the issues discussed earlier in chapters 5.1-5.13, during the performance of Contract 4A.3.1, there may be, inter alia, the following additional problems or risks related to the above-mentioned subject:

- accidents and near misses involving persons related to the implementation of the Contract and / or outsiders;
- cases of unacceptable behaviour in the workplace, such as sexual harassment or mobbing;
- cases of deliberate or inadvertent breach of labour law provisions, including those related to social conditions as well as working and pay conditions of staff;
- cases of infections with sexually transmitted diseases (including HIV / AIDS) and other infectious diseases (including those caused by coronaviruses, e.g., COVID-19), resulting from the lack of knowledge or non-compliance with the applicable rules on the prevention and control of this type of infections.

Due to the significant social effects of the above-mentioned threats, the EMP and other documents of 4A.3.1 Contract contain a number of detailed conditions aimed at preventing and effectively responding in the event of such events and ensuring proper implementation of all provisions of national law in force in the above scope (see, inter alia, chapter 6.1) .

5.16 Cumulative impact

According to the analyses of electromagnetic fields at the stage of environmental impact assessment, cumulative impacts do not occur, as there are no other electromagnetic wave emitters nearby. The negative impact of the radar is limited to a buffer of approx. 59 m at the height of the antenna centre, i.e., at a height of 35 m above sea level, and will occur during the operation phase and in the final phase of construction.

There will be no other cumulative impacts during the operation phase.

5.17 Summary

The matrixes summarizing the environmental impact of the Użranki radar tower are presented below. The first table shows the environmental impact during construction and the second - during the operation phase.

Table 9 Environmental impact of the Użranki radar tower during the construction phase

	Physical aspects							Ecological aspects		Social aspects			
Description	**Soil erosion / stability**	**Agricultural land**	**Air quality**	**Noise level**	**The quality of surface waters**	**Groundwater quality**	**Landscape quality**	**Protected / endangered species**	**Protected areas**	**Local employment**	**Employee safety and health**	**Health and safety of local residents**	**Road safety**
Back-up preparation	0	-1	0	-1	0	0	0	0	0	+1	0	0	0
Excavations for the foundation	0	-1	0	-1	0	-1	0	0	0	+1	-1	0	0
Construction of the foundation - reinforced concrete works	0	-1	0	-1	0	-1	0	0	0	+1	-1	0	0
Construction of the tower's steel structure	0	-1	0	-1	0	0	-1	0	0	+1	-1	0	0
Construction of the tower staircase - steel structure	0	0	0	0	0	0	0	0	0	+1	-1	0	0
Installation of the winch	0	0	0	0	0	0	0	0	0	0	-1	0	0
Covering the tower with sheet metal	0	0	0	0	0	0	-1	0	0	0	-1	0	0
Execution of an exit from the commune road, works of hardening the area around the tower and the manoeuvring area	0	-1	-1	-1	0	0	-1	-1	-1	+1	-1	0	0
Fence construction	0	0	0	0	0	0	-1	-1	-1	+1	-1	0	0
Mounting the radar and the dome	0	0	0	-1	0	0	-1	0	0	+1	-1	0	0
Installation of radar and associated devices (IT, heating, air conditioning)	0	0	0	-1	0	0	0	0	0	0	-1	0	0

	Physical aspects							Ecological aspects		Social aspects			
Description	**Soil erosion / stability**	**Agricultural land**	**Air quality**	**Noise level**	**The quality of surface waters**	**Groundwater quality**	**Landscape quality**	**Protected / endangered species**	**Protected areas**	**Local employment**	**Employee safety and health**	**Health and safety of local residents**	**Road safety**
Tests of electromagnetic field distribution performed by an authorized entity	0	0	0	0	0	0	0	0	0	0	0	0	0
Back-up disassembly	0	0	0	-1	0	0	0	0	0	0	-1	0	0

Legend: 0 = no impact; -1= slight negative impact; -2= significant negative impact; +1= slight positive impact; +2= significant positive impact

Table 10 The impact of the Użranki radar tower on the environment during the operation phase

	Physical aspects							Ecological aspects		Social aspects			
Description	**Soil erosion / stability**	**Agricultural land**	**Air quality**	**Noise level**	**The quality of surface waters**	**Groundwater quality**	**Landscape quality**	**Protected / endangered species**	**Protected areas**	**Local employment**	**Employee safety and health**	**Health and safety of local residents**	**Road safety**
Maintenance-free operational work	0	0	0	0	0	0	-1	0	0	0	0	0	0
Periodic test of the generator set	0	0	0	-1	0	0	0	0	0	0	0	0	0
Operation of air conditioners and heating	0	0	0	-1	0	0	0	0	0	0	0	0	0
Service operations	0	0	0	0	0	0	0	0	0	0	0	0	0

Legenda: 0 = no impact; -1= slight negative impact; -2= significant negative impact; +1= slight positive impact; +2= significant positive impact

6. DESCRIPTION OF MITIGATING ACTIVITIES

6.1 Mitigation actions by component

In order to limit the potential negative impacts of the planned project on individual elements of the environment, Appendix No. 1 presents the Mitigating Action Plan applicable to the Contractor of Contract 4A.3.1 for individual components of the environment. These activities have been developed on the basis of knowledge, experience, and good practices in this field.

The Mitigation Action Plan was supplemented on the basis of the RDEP conclusions contained in the decision on environmental conditions for the investment. The Decision on Environmental Conditions is included in Appendix 4. The most important conditions of the RDEP Decision are presented below.

Notwithstanding the above, the Contractor is obliged to apply and comply with all requirements and conditions in the field of ES policies (relating to environmental, social and occupational health and safety issues) specified in the Contract documents, in the Operational Policies and Procedures of the World Bank[14] for Environmental Protection, Healthcare and Safety Rules (EHS Guidelines[15], in the ES Code of Conduct (developed at the stage of submitting the tender offer [16]), as well as resulting from the provisions of legal acts in force in Poland (including the Labour Code, Construction Law, etc.).

6.1.1 Nature

Limiting the negative impact on nature will be implemented through the implementation of the following mitigation measures described in Appendix 1 of the EMP, aimed at, among other things:

- limiting losses in natural resources in connection with the occupation of land in the back of the construction site as well as access and technological roads (items 3, 4, 5, 10, 11, 12, 13, 14);
- elimination or reduction of impacts on animals (items 15, 76);
- elimination or limitation of the impact on protected habitats and animal species (items 5, 15);
- land reclamation after completion of works and maintenance (items 20, 21, 77).

[14] *Available on the website: https://policies.worldbank.org/sites/PPF3/Pages/Manuals/Operational%20Manual.aspx#S3-2 (in the part entitled Investment Project Financing / Environmental and Social Safeguard Policies).*

[15] *These guidelines are posted on the World Bank's website, at: https://www.ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/Sustainab ility-At-IFC/Policies-Standards/EHS-Guidelines/ and https://www.ifc.org/wps/wcm/connect/29f5137d-6e17-4660-b1f9-02bf561935e5/Final%2B-%2BGeneral%2BEHS%2BGuidelines.pdf?MOD=AJPERES&CVID=jOWim3p*

[16] *According to the conditions specified in the tender documents*

According to the decision of RDEP in Olsztyn of December 15th, 2021, the transport of equipment and materials should take place from the exit of the national road DK59 through the town of Użranki due to the fact that the Użranki-Kosewo dirt road crosses the Baranowo Masuria Turtle Refugee, including the ecological site Zawady. In the case of using the Użranki-Kosewo dirt road, during the construction period, when crossing the road of hydrated areas and places of potential migration of turtles, amphibians and other reptiles, these sections should be fenced with fences with safe containers for these animals (protected against predators). These containers should be emptied several times a day, and the animals found in them should be inventoried by a specialist and transported safely to the other side of the road.

Before commencing the works, the area on which the works will be performed will be fenced with a fence preventing the movement of small animals to the construction site. The hurdles will be made of thick, smooth foil, minimum 40 cm high, with a sling to prevent animals from penetrating outside the fenced area. The foil will be stretched on metal or wooden stakes driven deep into the ground so that the fence becomes a rigid and stable structure. The lower edge of the foil will be tucked into the ground to prevent animals from entering the fence. The fences will be disassembled after all construction works are completed. After the area is fenced off, before starting the works, the fenced area will be inspected and, if amphibians are found, they will be harvested and moved outside the construction site.

In the event of the need to move specimens of species covered by species protection, a permit should be obtained from the Regional Director for Environmental Protection in Olsztyn to perform activities subject to prohibition, in relation to species covered by strict and partial protection, issued pursuant to Art. 56 sec. 2 point 1 of the Act of April 16, 2004, on nature protection (Journal of Laws of 2020, item 55).

In addition, in accordance with the Supplementary Decision of the RDEP of 28 December 2021, in exceptional situations, e.g., related to the work schedule, construction works with the use of heavy equipment may be carried out during the bird breeding season (from March to the end of August) under environmental supervision. In the event of a possible breach of the prohibitions listed in Art. 52 sec. 1 of the Nature Conservation Act, work should be suspended until the competent authority has obtained a permit to derogate from the prohibitions set out in the above-mentioned article.

6.1.2 Land surface and landscape

The reduction of the negative impact on the land surface and landscape will be implemented through the implementation of the following mitigation measures described in Annex 1 to the EMP, aimed at, among other things:

- recreating or preserving transformed space (item 20);
- location of temporary occupation sites in a way that minimizes the surface of interference and the impact on the values of the landscape (items 3, 4, 10, 11, 13, 14).

6.1.3 Soils and land

The reduction of the negative impact on the soil surface and land will be implemented through the implementation of the following mitigation measures described in Annex 1 of the EMP, aimed at, among other things:

- reduction of losses in soil resources related to land occupation (items 16, 17, 18, 19, 20);
- safe waste management (items 40, 41, 42, 43, 44, 78);
- reducing the risk of soil contamination at the stage of works (items 22, 23, 24, 25 26, 27, 28, 29, 30, 31, 32, 33, 34, 69, 70, 71, 72, 73).

6.1.4 Surface and ground waters

Reducing the negative impact on surface and groundwater will be implemented through the implementation of the following mitigation measures described in Appendix 1 of the EMP, aimed at, inter alia:

- safe waste management (items 40, 41, 42, 43, 44, 78);
- reducing the risk of changing water parameters at the stage of works and operation (items 11, 12, 22, 23, 24, 25 26, 27, 28, 29, 30, 31, 32, 33, 34, 69, 70, 71, 72, 73).

6.1.5 Climate

In the case of the Contract in question, it was not found necessary to perform any mitigating measures due to climate protection.

6.1.6 Cultural landscape and monuments

The reduction of the negative impact on monuments will be implemented through the implementation of mitigating measures described in Appendix 1 of the EMP, serving mainly:

- implementation of appropriate procedures in the event of the discovery of movable monuments or archaeological sites at the stage of works (items 52, 53).

6.1.7 The electromagnetic field

The reduction of the negative impact of the electromagnetic field will be implemented through the implementation of the following mitigating measures described in Annex 1 of the SPZ, mainly serving the method of designing and installing the devices (items 46, 49).

6.1.8 Sanitary condition of the air

The reduction of the negative impact on the sanitary condition of the air will be implemented through the implementation of the following mitigating measures described in Annex 1 of the DEMP, aimed primarily at reducing air pollution by exhaust gases and dust (items 35, 36, 37).

6.1.9 Acoustic climate

The reduction of the negative impact on the acoustic climate will be implemented through the implementation of the following mitigating measures described in Annex 1 of the DEMP, aimed primarily at reducing noise during the works (items 11, 12, 38, 39, 75).

6.1.10 Human health and safety

Reducing the negative impact on human health and safety will be implemented through the implementation of the following mitigating measures described in Appendix 1 of the EMP, aimed at, among other things:

- limiting the impact on the sanitary condition of the air (items 35, 36, 37);
- reducing the impact on the acoustic climate (items 11, 12, 38, 39, 75);
- elimination or reduction of the risk of water and soil pollution (items 11, 12, 22, 23, 24, 25 26, 27, 28, 29, 30, 31, 32, 33, 34, 69, 70, 71, 72, 73);
- ensuring safety on the construction site and its surroundings (items 45, 46, 47, 48, 49);
- ensuring proper response in emergency situations (items 50, 51);
- specific requirements of the ES World Bank policies (items 60, 61, 62, 63, 64, 65, 66, 67, 68).

6.1.11 Extraordinary threats to the environment

Extraordinary threats to the environment are described in chapter 5.14.

Risk-related mitigation measures are specified in Appendix 1 of the EMP, which include:

- proceedings in the event of a crisis situation (item 50);

- proceedings in the event of finding unexploded ordnance and misfires (item 51);
- proceedings in the event of an epidemiological emergency or a pandemic state during the works (item 68);
- development of documents related to safety in the area of work (item 45).

6.1.12 Other ES risks

Examples of forms of additional threats related to ES issues are presented in chapter 6.2.

In order to counteract these threats, the following mitigation measures are specified in Appendix No. 1 to the EMP, which include:

- counteracting accidents and near misses on the works site and in other places related to the performance of the Contract (items 60, 61, 62);
- combating unacceptable behaviour in the workplace, such as sexual harassment or mobbing (items 63, 64);
- implementation and reporting of the Detailed Environmental Management Plan for the Contract Task 4A.3.1 / h meteorological radar station in Użranki (items 54, 55, 56, 57, 58, 59);
- ensuring appropriate social conditions and lawful working and pay conditions for the personnel involved in the implementation of the Contract (item 65);
- ensuring appropriate procedures for informing on an ongoing basis about problems and threats related to the above-mentioned subject matter (item 66);
- reducing the risk of spreading infectious diseases, especially sexually transmitted diseases (including HIV / AIDS) and diseases caused by coronaviruses (e.g. COVID-19) (items 67, 68).

6.1.13 Material goods

The investment will take place on a plot belonging to the Employer, therefore it was not required to develop a Real Estate Acquisition and Resettlement Plan.

In order to limit the potential impact of works on tangible goods, mitigating measures have been introduced in Annex 1 of the EMP to ensure the protection of buildings, roads and other infrastructure elements against the adverse effects of works and / or transport (items 5, 6, 7, 8, 9).

6.2 Specific requirements for the World Bank's ES policies (environmental and social aspects, including the risk of sexual exploitation, sexual abuse, and sexual harassment)

The implementation of 4A.3.1 Contract is related to the need to meet a number of ES requirements (environmental, social, health and safety aspects), which are governed by national regulations governing the issues of environmental protection, occupational health and safety and labour law. State institutions and bodies supervise their observance. In particular, in the field of compliance with health and safety at work and labour law, the bodies of the state sanitary inspection and state labour inspection are authorized to control the activities of entrepreneurs, including on construction sites. However, due to the high importance of the World Bank's requirements to ES, the terms of contracts financed by a World Bank loan impose obligations to ensure the implementation of the applicable regulations. Particular attention is paid to issues such as:

- Protection of young people employed in the performance of the Contract;
- Eliminating inappropriate forms of behaviour of people employed in the performance of the Contract (including sexual harassment and mobbing);
- Ensuring the safety and health protection of people employed in the performance of the Contract, including the provision of health and safety services required by law;
- • Providing appropriate social and employment conditions to employees employed in the performance of the Contract (including fair pay conditions).

Below is a list of issues in the form of requirements for the Contractor, related to ES WB policies. It should be emphasized that the requirements and conditions in the scope of ES specified for the Contractor and its employees also apply to the Contractor's Subcontractors and their employees or Subcontractors.

- • The Contractor will conduct training and implement an awareness-raising program on counteracting sexual harassment and mobbing. These activities will be conducted throughout the duration of the Contract, at least every other month. They will take the form of information, education, and awareness campaigns.
- The Contractor will immediately inform the Employer about all reported and suspected sexual harassment and mobbing cases.
- The Contractor will inform all persons employed on the site about the possibility of submitting complaints about working and pay conditions and will deliver an information leaflet with the necessary information on submitting complaints and applications, in which he will ensure that there are no repercussions for the person reporting the problem. The content of the leaflet will be agreed with the PIO.
- The Contractor will inform the Employer about all accidents involving employees and third parties in accordance with the procedure presented by the Employer. In the

event of an accident, the Contractor will take all actions required by applicable law, such as the Construction Law and the Labour Code.

- The Contractor will ensure equal remuneration for employees performing the same work without considering their gender, sexual orientation, or age, moreover, persons employed under the Contract will not be harassed or discriminated against on the basis of sex, sexual orientation, and age.
- The Contractor, in accordance with the possibilities and conditions and the Polish provisions of the Labour Code, will satisfy the living and social needs of employees at the workplace.
- The contractor is obliged to facilitate the employees' improvement of professional qualifications.
- The contractor may only employ an employee who has reached 18 years of age, has completed at least eight-year primary school, and has presented a medical certificate stating that the work of a given type does not endanger his health.
- The Contractor will employ a health and safety specialist with qualifications and professional experience in accordance with Polish labour law.

However, it should be emphasized that the Contractor is obliged to apply and comply with all provisions of the Labour Code and will act in accordance with the ES Code of Conduct.

6.3 Requirements for the implementation of action plans during the construction phase

In order to ensure the proper organization of the works, as well as to correctly implement the conditions set out in the SEM for the Użranki location, the Contractor is obliged to develop and obtain approval from the Employer, and then implement the following documents for implementation:

- *Construction site organization project*, which should include, inter alia, elements such as:
  - location of construction facilities,
  - development of the construction site,
  - securing the construction site,
  - technological roads, including obligatorily planned temporary occupation of the area,
  - environmental protection at the construction site.

- *Waste management plan,* which should include, inter alia, the following main elements and detailed guidance contained in Appendix No. 1:

– the existing and anticipated types and amounts of waste,

– ways of preventing the negative impact of waste on the environment,

– waste management, including collection, transport, recovery, and disposal of waste,

– type of waste generated (e.g., waste from construction, renovation and dismantling of buildings and road infrastructure - including soil from polluted areas, hazardous waste, municipal waste, waste containing asbestos) and the method of their storage and disposal.

- *Action plan in the case of uncontrolled emission (leakage) of oil derivatives*, which should include, inter alia, elements concerning the procedure to be followed in the event of the spill of chemical and petroleum derivatives, i.e.:

  – the mode of equipping with appropriate materials in relation to the anticipated threats and substances,

  – mode of alerting and notifying individual services,

  – procedure to limit spillage,

  – the procedure for handling sorption materials.

- *Plan for the Safety and Health Protection* (SHP plan), which should include, among others the following items:

– indication of the elements of the plot or area development, which may pose a threat to the safety and health of people;

– information on the anticipated threats occurring during the execution of construction works, specifying the scale and types of threats as well as the place and time of their occurrence, including in relation to the natural environment;

– information on the separation and marking of the site for construction works, depending on the type of risk;

– information on the method of training employees before commencing the implementation of particularly dangerous works;

– determination of the method of storing and managing hazardous materials, products, substances, and preparations on the construction site;

– indication of technical and organizational measures to prevent dangers arising from construction works in areas of particular health risk or in their vicinity, including ensuring safe and efficient communication, enabling quick evacuation in the event of fire, failure, and other threats;

- indication of the place of storage of construction documentation and documents necessary for the proper operation of machines and other technical devices,
- COVID-19 troubleshooting information.

The Contractor, in the preparation of the above-mentioned documents, will consider the relevant operational policies of the World Bank regarding the protection of health, the environment and safety rules, including the ES Guidelines[17]. These documents, before implementation, must be approved by the Employer, which then also monitors their correct implementation.

The Contractor will also conduct training on the principles and conditions for implementing the EMP for the Contractor's managerial, engineering, and technical staff and regular training of Employees in the field of occupational health and safety, raising awareness in the field of preventing sexual harassment and mobbing.

When developing the above-mentioned documents, the Contractor will consider the relevant operational policies of the World Bank regarding the protection of health, the environment and safety rules. These documents, before implementation, must be approved by the Employer, which then also monitors their correct implementation.

7. DESCRIPTION OF MEASURES IN THE AREA OF ENVIRONMENTAL MONITORING

On the basis of the Mitigating Action Plan, a Monitoring Action Plan was developed with a set of monitoring activities applicable to the Contractor of the 4A.3.1 / h Contract. These activities consider the conditions of using the environment and the requirements for its protection contained in the Decision on Environmental Conditions issued by RDEP.

8. PUBLIC CONSULTATION

8.1 Public consultation of the framework environmental management plan (2015)

The draft Framework Plan for Environmental and Social Management (ESMF) for ORFPP was subject to the procedure of public consultations conducted in accordance with the operational policy of the World Bank OP 4.01. Their aim was to enable the public to become acquainted with the content of this document and to provide the possibility of submitting any comments, questions, and conclusions regarding its content.

[17] *https://www.ifc.org/wps/wcm/connect/topics_ext_content/ifc_external_corporate_site/sustainability-at-ifc/policies-standards/ehs-guidelines*

Documentation of the public consultation process of the ESMF document is available on the website of the Project Coordination Office for flood protection of the Odra and Vistula basins [18][19].

8.2 Public consultations at the EIA stage (2021)

In accordance with the Polish EIA procedure, at the stage of issuing the decision on environmental conditions, the planned project falling within the scope of Contract 4A.3.1 was subject to the obligation to conduct public consultations conducted by the relevant RDEP.

Pursuant to Art. 33 paragraph 1, in connection with Art. 79 sec. 1 of the Environmental Protection Act, the Regional Director for Environmental Protection in Olsztyn twice ensured the participation of the public in the pending proceedings, which he informed successively in the announcement of 27.07.2021, reference number: WOOŚ.420.8.2021. BG.9 and the announcement of 04.10.2021. , reference number: WOOŚ.420.8.2021.BG.13. The above announcements were posted on the RDEP website in Olsztyn and on the notice board of the local office, as well as on the notice board at the seat of the Mrągowo Commune Office and on the BIP website of this Office and on the notice board of the Użranki village council, where the project will be implemented. Those interested could read the submitted application and the report on the environmental impact of the project and its supplements at the seat of the Regional Directorate for Environmental Protection in Olsztyn, as well as submit comments and applications, orally and in writing, and by electronic means of communication, within 30 days from the day it is made public (i.e., from 2 to 31 August 2021 and from 7 October to 5 November 2021). In the above-mentioned no comments and conclusions were submitted within the time limit.

The Regional Director for Environmental Protection in Olsztyn, aiming to issue a decision on environmental conditions for the project in question, informed by a notification of November 22, 2021 that evidence was collected in the case in question, and the parties to the proceedings, pursuant to Art. 10 of the Code of Administrative Procedure, you have the right to read the files, comment on the evidence and materials collected so far, and on the demands made before issuing a decision on the merits of the case. In the course of the administrative procedure, the parties to the proceedings did not raise any comments regarding the planned project.

8.3 EMP public consultations (2021)

[18] http://www.odrapcu.pl/doc/OVFMP/RPZSiS_Zalacznik_08_Raporty_z_procedury_upublicznienia_projektu_EM_AF.pdf

[19] http://www.odrapcu.pl/doc/OVFMP/RPZSiS_Zalacznik_09_Raporty_z_konsultacji_spolecznych_RAF.pdf

Public consultation process for the entire Contract 4A.3.1. documents have been described in chapter 8.3. Social consultations of the EMP (2021) in the General Environmental Management Plan - Guidelines for the Contractor. It describes the procedure for individual documents, i.e., OEMP, EMP and checklists. The process of social consultations of the EMP for Użranki is described below, which, according to the established nomenclature, is the EMP.

After obtaining administrative approvals regarding environmental protection, in particular the Decision on Environmental Conditions, the EMP will be subject to mandatory public consultations conducted in accordance with the operational policies of the World Bank (OP / PB 4.01). Due to the threats related to the epidemic of the coronavirus causing the COVID-19 disease, the action plan related to the publication of EMP projects will consider the recommendations of the World Bank's Technical Note „Public consultation and stakeholder involvement in activities supported by the World Bank, in the event of restrictions in the conduct of public meetings”[20].

It should also be emphasized that the consultation process described in chapter 8.2 is also conducted under the EIA procedure.

After the detailed draft of the EMP has been developed and the PCU approval (consent to be made public) has been obtained on its basis for the commencement of the publication procedure, the electronic version of the detailed draft EMP will be posted on publicly available websites: on the IMGW-PIB – https://www.imgw.pl, PCU OVFMP – http://odrapcu.pl and Mrągowo Commune Office Website.

Detailed information on the possibility of reading this document and the possibility of submitting conclusions and comments (along with an indication of detailed contact details: postal address, e-mail address, telephone number) will be made public in the Notice available in the relevant period in the following places:

- On websites:
    - IMGW-PIB – https://www.imgw.pl,
    - PCU OVFMP – http://odrapcu.pl,
    - Mrągowo Commune Office Website;
- on notice boards on the premises of the Mrągowo Commune and at the premises of the above-mentioned institutions;
- in the IMGW-PIB social media, https://www.facebook.com/Meteoimgw;
- in the relevant local press, on the Internet.

[20] In relation to the procedures applied before the outbreak of the coronavirus pandemic, in the current situation, the paper version of the draft EMP document for viewing at offices and public offices has been abandoned, the period of publication (up to 15 working days) has been extended and the organization of an open public debate at the end of the publication period of the project has been abandoned. of the EMP document. Instead of the above-mentioned debate, on the last day of public consultations, a publicly available teleconference (online seminar) was organized, consisting of a presentation of the draft EMP document and a question-and-answer session.

The above-mentioned announcements will also include information about the possibility of participating in a publicly available teleconference (online seminar), planned for the date indicated in the announcement (with the date and time of the teleconference) and information on the location of the link to download the "Step-by-step instructions" and a link to taking part in a teleconference.

Information about the commenced procedure of publishing the detailed draft EMP and the possibility of submitting applications and comments will also be sent by e-mail to the following persons, institutions, and organizations:

- Mayor of the Mrągowo Commune,
- Council of Mrągowo Commune,
- Ogólnopolskie Towarzystwo Ochrony Ptaków [EN. Polish Society for the Protection of Birds],
- Towarzystwo na Rzecz Ziemi [EN. Society for the Earth],
- Polskie Towarzystwo Ochrony Przyrody „Salamandra," [EN. Polish Society for Nature Conservation "Salamandra"],
- Klub Przyrodników [EN. Naturalists' Club]

After the end of the public consultation period, a report on public consultations of the EMP in Użranki and the final version of the given EMP for the task of Contract 4A.3.1 / h in Użranki will be prepared. After the above-mentioned works are completed, these documents will be submitted to the World Bank for the final approval clause, the so-called "No objection".

9. ORGANIZATIONAL STRUCTURE OF IMPLEMENTING THE EMP

Contract 4A.3.1 is part of the Odra and Vistula basin flood protection project co-financed by the World Bank, the Council of Europe Development Bank, the European Union Cohesion Fund, and the state budget. Therefore, the structure of supervision over the implementation of the EMP must comply with both the provisions of Polish law and the requirements of the World Bank.

9.1 Coordination Office of the Odra and Vistula River Basin Flood Protection Project

The Project Coordination Office (PCU), which functions as an organizational unit within the structures of the National Water Management Authority (KZGW), which is an organizational

unit of the Polish Water Management State Water Management (PGW WP), is responsible for the overall coordination of the implementation of individual EMPs under the PGW WP. The tasks of the PCU include, among other things:

- managing the tasks of Project Execution Units (PIU) and Project Implementation Units (PIO), in the scope of tasks included in the Project;
- technical assistance and support to PIU and PIO in the implementation of tasks included in the Project, including the application of the World Bank procedures related to procurement, environmental protection, and social matters;
- preparation of annual work programs under the Project and assessment of their progress;
- supervision of works under the Project and assessment of their progress;
- ongoing control and monitoring of financial resources allocated to the Project implementation and participation in the management of Project financial resources;
- reporting, including preparation and submission to the World Bank, CEDB and the Steering Committee of quarterly reports on the implementation of the Project.

9.2 Project Implementation Unit (PIU) and Project Implementation Office (PIO)

The Project Implementation Unit (PIU), i.e., the Institute of Meteorology and Water Management - National Research Institute with its seat in Warsaw, is directly responsible for the implementation of the EMP for Contract 4A.3.1 and the monitoring of its implementation progress.

In connection with the implementation of the OVFMP Project, the Project Implementation Office (PIO) was separated in the structure of the PIU, constituting a separate organizational unit and supervised by the director of the Institute of Meteorology and Water Management - National Research Institute with its seat in Warsaw. Such a structure is transparent and has a very high decision-making level, which increases the effectiveness of the implementation of the Contract.

As part of the supervision over the implementation of the EMP, PIU performs the following tasks:

- monitoring the progress of the EMP implementation;
- financial management and accounting;
- drawing up the necessary reports for the purposes of monitoring the implementation of the EMP and coordinating its implementation by all services involved in the implementation of the EMP;

The scope of duties of PIU employees related to the supervision over the implementation of the EMP is as follows:

- managing, coordinating, and supervising the EMP monitoring conducted by the Contractor;
- direct supervision over the proper performance of tasks;
- cooperation with PCU;
- exercising administrative and legal supervision over the implementation of the EMP;
- verification of Reports and reports on the implementation of the EMP prepared by the Contractor;
- exercising financial supervision over the implementation of the EMP;
- supervision over the correct application of formal procedures in the implementation of the EMP, resulting, inter alia, from the requirements of Contract 4A.3.1, Construction Law, Environmental Law, and others.

The PIU has appointed an Investor Supervision Inspector who will be responsible for:

- monitoring of the Contractor's activities;
- checking the quality of construction works performed by the Contractor and built-in construction products, in particular preventing the use of defective construction products and products not approved for use in construction;
- representing the Investor on the construction site by controlling the compliance of its implementation with the design and implementation permit, environmental protection regulations and the principles of technical knowledge;
- conducting additional tests if it is necessary to verify the Contractor's reports;
- checking and acceptance of construction works subject to covering or disappearing, as well as preparation and participation in the acceptance of finished construction works.

9.3 The Contractor

In order to conduct the works, a Contractor was selected who will be responsible for the implementation of the EMP. The Contractor's obligations in this respect include, among others:

- conducting construction works on the terms specified in the EMP, in accordance with contract conditions and design documentation, in accordance with applicable law and the requirements of administrative decisions issued for this Contract;
- ensuring constant health and safety supervision;
- keeping construction documentation;

- preparation of reports (reports to RDEP and / or GDEP [the latter only to the extent resulting from the decisions of the above-mentioned bodies obtained at the implementation stage, if the Contractor obtains such decisions]);
- applying to the Investor for changes in design solutions, if it is justified by the need to increase the safety of construction works or to improve the construction process in the scope related to the implementation of the EMP;
- repair of any defects / faults that will be reported by the Investor during the works and in the period of reporting defects, guarantee and warranty. The contractor is obliged to report all actions that have been performed to remove defects / faults. The report should be submitted to the Investor;
- confirmation of actually performed works and removal of defects, as well as, at the request of the Investor, control of construction settlements;
- participation in the acceptance of finished building objects and their handing over for use.

The EMP Coordinator will be appointed in the Contractor's team - a person coordinating and supervising activities related to the implementation of the EMP. Throughout the duration of the Contract, the Contractor will ensure the participation of environmental experts, depending on the needs. The work of the expert team will be coordinated by the Contractor's EMP Coordinator. The EMP Coordinator will be responsible for:

- monitoring of the implementation of the EMP;
- supervising all issues related to environmental protection by specialists in the field of environmental protection and other personnel of the Engineer;
- constant monitoring of the correctness of the implementation of activities mitigating the negative environmental impact;
- identifying problems resulting from the harmful impact of construction works on the environment and presenting proposals to solve these problems.

A health and safety specialist will also be appointed in the Contractor's team, available throughout the duration of the Contract, responsible also for the implementation of other ES issues not included in the EMP. The contractor will specify a person to whom complaints about mobbing, discrimination and ill-treatment can be submitted.

10. SCHEDULE FOR THE IMPLEMENTATION OF THE EMP AND REPORTING PROCEDURES

The implementation of the Użranki DEMP enables the parties involved in the preparation, implementation, and supervision of this task of the 4A.3.1 Contract:

- identification of various environmental aspects that have a significant impact on the state of the environment, thanks to which they can be controlled, corrected, reduced, but - as a result - having economic effects;
- correction of unfavourable consequences of the works conducted during the implementation to the benefit of the environment and financial results;
- defining the objectives and tasks implemented under the adopted environmental policy, covered by the EMP, which require expenditure and bring measurable results;
- identification and elimination of potential threats and failures, prevention and removal of environmental effects that may be related to them and entail losses disproportionate to the preventive costs;
- rational use of natural resources, with minimal environmental losses and optimal cost generation.

In addition, the implementation of recommendations and actions resulting from the EMP may reduce or even eliminate the risk of occurrence of unfavourable social, environmental, and economic events and phenomena related to the Contract, in particular:

- the risk of neglecting environmental protection issues in the process of performing tasks by the Contractor;
- risk of escalation of local society protests as a result of the Contractor's failure to comply with the technologies for conducting works and environmental procedures approved by the Investor;
- the risk of additional environmental penalties;
- the risk of incurring additional losses in the environment.

Bearing in mind the importance of the issues determining the environmental and social conditions, the following EMP implementation procedures are envisaged for the entire Contract:

- The Contractor of 4A.3.1 Contract, through the Investor, will submit a general draft EMP to PCU, and then checklists or EMP for each location for opinion;
- after expressing no objection (so-called No Objection) by the World Bank for OEMP, it will be published in the final version on the websites of PCU, the Employer and the Bank throughout the duration of the Contract;
- after obtaining individual EDs, they will be prepared for all EMP locations, depending on the provisions of ED;
- checklists will be created for other locations, for which there will be no need for ED;
- after PCU expresses no objection to the presented checklists, they will be made public in the final version;

- after the PCU expresses no objection to the presented EMPs, they will be made public on the website of the OVFMP Project and the IMGW-PIB and forwarded for public consultations, in addition, the draft of these EMPs will be forwarded to the World Bank for opinion;
- comments will be considered for the draft of the EMP, and their final versions will be submitted to the World Bank in order to express no objection, the so-called No Objection;
- all activities of the Contractor will be reported at regular intervals (monthly), in Polish and, if necessary, in English, in paper and electronic versions, in terms of obligations under the EMP and other contractual documents. These reports will be subject to approval by the Employer. After the end of the Contract, the Contractor will prepare a final report on the implementation of the EMP, which is subject to opinion and no objection expressed by the World Bank. It is a condition for the completion and settlement of the Contract.

In addition, the relevant units involved in the implementation of 4A.3.1 Contract are required to implement additional obligations in the scope of monitoring and reporting environmental issues specified in administrative decisions issued for the project and presented at the next stage in individual mitigation action plans for each location, the content of the checklist or as an attachment to the detailed EMP.

The Project work progress reporting system will be based on monthly reports submitted by the Contractor to the PIU. As part of the above-mentioned monthly and quarterly reports or as a separate document, monthly and quarterly reports on the implementation of the EMP will also be prepared.

PIU will submit quarterly reports to PCU in the part concerning the tasks performed by them. They will contain the required set of information and descriptions enabling the preparation of a quarterly report of the Project by PCU. Moreover, especially in the case of problems with the implementation of Contract 4A.3.1, PCU will expect PDU to submit statements and data on a monthly basis.

The following reporting procedures have been established:

1. Reporting:
    a) reports (monthly, quarterly, ad-hoc, final) will be prepared by the Contractor;
    b) submitting the report to the Employer;
    c) submission of a report to the RDEP and / or GDEP (only to the extent resulting from the administrative decisions issued during the implementation stage, if they result in the need to report the activities in question);
    d) submission of the quarterly PIU report to PCU;

e) the final report on the implementation of the EMP prepared by the Contractor (after verification by PCU, submitted to the World Bank no later than 3 months after completion of the works).

2. Archiving:

a) The Contractor: 1 copy of each report in electronic version for 5 years from the date of the Contract completion 4A.3.1;

b) Investor: 1 copy of each report in electronic version for 5 years from the date of completion 4A.3.1 Contract.

3. Evaluation:

a) current assessment of the implementation results of the planned activities resulting from the EMP;

b) ongoing analysis of documentation (Contractor's Reports) by the Investor;

c) providing the Employer with reliable information on the course of the construction process, with particular emphasis on the implementation of activities limiting the negative impact on the environment and recommendations resulting from environmental decisions;

d) drawing up and submitting quarterly reports by PCU to the World Bank.

There are planned:

- ongoing evaluation: Contractor's quarterly reports,
- ex-post evaluation:
    - Report after completion of the works (final reports on the implementation of the EMP, prepared by the Contractor),

11. SOURCE MATERIALS

1) Environmental Impact Assessment Report for OVFMP 4A.3.1 "Modernization of the POLRAD meteorological radar network" at the Użranki site, Consortium: INSTAL Warszawa S.A. and Klimas Przedsiębiorstwo Budowlano-Projektowe Ryszard Klimas, Krotoszyn; 2021.

2) ISOK - IT System for the Country Protection,

3) General Directorate for Environmental Protection, Central Register of Forms of Nature Protection,

4) Explanations to the geo-environmental map of Poland 1: 50,000 Mrągowo Sheet(141) - Polish Geological Institute - National Research Institute, Warsaw 2012,

5) Przewodnik Collinsa. Ptaki. L. Svensson, K. Mullarney, D. Zetterstrom, Multico 2012, [EN. Collins Guide. The birds.]

6) Owady Heiko Bellmann Multico 2007, [EN. Insects]

7) Atlas ptaków Europy Detlef Singer, Delta, [EN. Birds of Europe Atlas]

8) Przewodnik do oznaczania zbiorowisk roślinnych Polski. Władysław Matuszkiewicz, Wydawnictwo Naukowe PWN 2008, [EN. A guide to the marking of plant communities in Poland.]

9) Flora Polski, Rośliny łąkowe, Zbigniew Nawara, Multico 2012, [EN. Polish flora. Meadow plants.]

10) Flora Polski. Rośliny synatropijne. Barbara Sudnik-Wójcikowska. Multico 2011, [EN. Polish flora. Synatropic plants.]

11) Atlas owadów polskich. Łukasz Przybyłowicz. Publicat, [EN. Atlas of Polish insects]

12) Przewodnik do rozpoznawania roślin. Schauer, Caspari, Elipsa, [EN. A guide to identifying plants.]

13) Mammal Research Institute Polish Academy of Sciences, Białowieża, Project of ecological corridors connecting the European Natura 2000 Network in Poland, Study prepared for the Ministry of Environment (Agreement No. 13 / N / 2004 of December 29, 2004) as part of the implementation of the Phare PL0105.02 program "Implementation of the European Ecological Network in Poland", Warsaw 2005,

14) Zmyślony M. Działanie biologiczne i skutki zdrowotne pól elektromagnetycznych w aspekcie wymagań raportów o oddziaływaniu przedsięwzięć na środowisko. Med Pr 2007 [EN. Biological action and health effects of electromagnetic fields in terms of the requirements of reports on the environmental impact of projects.]

15) Operational Policy of the World Bank OP 4.01 - Environmental Assessment

16) (https://policies.worldbank.org/sites/PPF3/Pages/Manuals/Operational%20Manual.aspx# S3-2 [in the part entitled *Investment Project Financing / Environmental and Social Safeguard Policies*]).

17) Environmental and Social Management Framework Plan, final document, April 2015 (http://odrapcu2019.odrapcu.pl/popdow_dokumenty/).

18) Project of flood protection in the Odra and Vistula basins - Project Operational Manual, Wroclaw 2015 (http://www.odrapcu.pl/doc/POM_PL.pdf).

19) Website: http://odrapcu2019.odrapcu.pl/popdow_dokumenty/.

20) GDEP Geoservice http://geoserwis.gdos.gov.pl/mapy/.

12. LIST OF PHOTOGRAPHIES

13. LIST OF FIGURES

14. LIST OF TABLES

ATTACHMENTS LIST

Appendix No. 1 Mitigation Action Plan

Appendix No.2 Monitoring Action Plan

Appendix No. 3 List of legal acts related to environmental protection

Appendix No. 4 Copies of administrative decisions

Appendix No. 5 Map of the location of the Użranki meteorological radar station

Appendix No. 6 Map of the location of the Użranki meteorological radar station against the protected areas background

Appendix No. 7 Public consultation report