Appendix 2

Detailed assessment of the environmental impact of potential support areas

Reference to matrix of impacts (project code: policy objective, specific objective, action, project	**Specific objective, action**	**Area of support, typical projects** (from the matrix of impacts)		
2.2.1.2	2.2 Promoting sustainable water management 2.2.1. Implementation of projects aimed at protection and condition improvement of water resources (including river basin management, infrastructure development of rainwater retention systems, activities related to improvement of water quality),Joint actions aimed at protection and improvement of water resources' condition	**Construction of small retention facilities**		
Elements of the environment subject to analysis	**Description of the results of analyses**			
	Identification of impacts	Duration	Type	Possible cumulative impacts
Biodiversity	positive: small retention measures contribute to an increase in biodiversity, both in river valleys, forest areas and semi-natural habitats. Small retention measures contribute to the restoration of hydrogenic habitats, e.g. on previously reclaimed peat bogs, wet meadows and pastures. Small retention in river valleys contributes to the preservation of natural river valley ecosystems, riparian forests, peat bogs, wet meadows, pastures and ecological corridors, and increases the level of groundwater in the valley.	long-term, permanent, short-term	direct, indirect	n/a
Fauna	negative: disturbance of animals in the vicinity of the investment; possible interruption of migration corridors in the riverbed in the case of installation of small damming devices.	long-term, permanent, short-term	direct, indirect	n/a

Reference to matrix of impacts (project code: policy objective, specific objective, action, project	**Specific objective, action**	**Area of support, typical projects** (from the matrix of impacts)		
	Positive: improvement of the living conditions of animals.			
Flora	positive: improvement of conditions for plant growth Negative: during the course of works, natural habitats and plant species sites may be occupied, trees and shrubs may be removed.	long-term, permanent short-term	direct, indirect	n/a
Integrity of protected areas	positive: small retention facilities can improve migration connectivity in ecological corridors for many species	long-term, permanent	direct, indirect	n/a
Water	positive: impact on increasing retention and delaying rainwater run-off. Negative: during construction, when disturbance of water relations and water pollution could occur.	short-term, long-term,	direct, indirect	n/a
Air	Negative: exhaust and dust emissions during construction works in the implementation phase.	short-term,	direct	n/a
Humans	positive: creation of recreation sites, particularly important during heat waves, influencing the improvement of air quality, through retention, reducing the likelihood of flooding during heavy rainfall Negative during construction due to noise, exhaust and dust emissions and occupation of land during construction activities.	long-term, permanent, short-term	direct, indirect	n/a
Land surface	positive: landform change. Negative: during construction - temporary excavation, land and soil movement.	short-term, long-term, permanent	direct	n/a

Reference to matrix of impacts (project code: policy objective, specific objective, action, project	**Specific objective, action**	**Area of support, typical projects** (from the matrix of impacts)		
Landscape	positive: landscape change. Negative: during construction, when the natural landscape will be disturbed	long-term	direct	n/a
Climate	positive: the greenery accompanying the retention facilities will absorb carbon dioxide, contributing to the overall balance of greenhouse gas emissions to the atmosphere. Negative: during construction - greenhouse gas emissions from construction equipment.	long-term, permanent	direct	n/a
Natural Resources	positive: improved water balance.	long-term	indirect	n/a
Heritage Objects	Positive: if water gardens are located in the vicinity of heritage objects. Negative: during construction as there may be difficulties in accessing heritage objects.	long-term, potential, short-term	indirect	n/a
Material Assets	positive: keeping land at an adequate level of irrigation improves the health of ecosystems and agricultural productivity and protects it, together with building facilities and infrastructure, from the consequences of local floods and flooding, leading to an increase in the value of the property (buildings and land).	long-term, potential	indirect, secondary	n/a

Reference to matrix of impacts (project code: policy objective, specific objective, action, project	**Specific objective, action**	**Area of support, typical projects** (from the matrix of impacts)
Other supplementary information and reference to map analysis using GIS. Identification of all protected areas and ecological corridors associated with the project.	Work performance in a manner ensuring water protection. In the exploitation phase - monitoring aimed at early detection of possible pollution of water due to a failure. In the case of treatment plants discharging wastewater into the receiving body in the catchment of dammed lakes, the high degree of treatment of nutrients is very important.	
Conclusions on effects reduction (mitigation), alternatives and compensation.		

The table above should indicate the following impacts:	positive, negative, significant negative, possible	long-term, medium-term, short-term, permanent, temporary	direct, indirect, secondary	If cumulative impacts occur, actions shall be identified to which the impacts refer.

Reference to matrix of impacts (project code: policy objective, specific objective, action, project	**Specific objective, action**	**Area of support, typical projects** (from the matrix of impacts)		
2.2.1.2	2.2 Promoting sustainable water management 2.2.2 Implementation of projects related to sewage management.Joint actions aimed at development of sewage infrastructure and improving wastewater management.	**2.2.2.2 Implementation of innovative projects in the field of wastewater treatment**		
Elements of the environment subject to analysis	**Description of the results of analyses**			
	Identification of impacts	Duration	Type	Possible cumulative impacts
Biodiversity	positive: an increase in biodiversity as a result of reducing the level of pollution of water and soil, negative: pollution occurring on the construction site	short-term, long-term, permanent	direct, indirect	n/a
Fauna	negative: disturbance of animals in the investment area, impoverishment of food base, occupation of breeding places, pollution, excessive noise during construction works; positive: improvement of living conditions for animals.	temporary, long-term	direct	Possible cumulation with tasks involving flood protection, hydraulic engineering and other modernisation, construction or expansion
Flora	negative: removal of trees and shrubs during the implementation of the investment, degradation of habitats, infiltration of pollutants from the construction site directly into the habitats; positive: improvement of conditions for plant growth	temporary, long-term	direct, indirect	Possible cumulation with tasks involving flood protection, hydraulic engineering and other modernisation, construction or expansion

Reference to matrix of impacts (project code: policy objective, specific objective, action, project	**Specific objective, action**	**Area of support, typical projects** (from the matrix of impacts)		
Integrity of protected areas	possible negative: possible disturbance to the integrity of certain types of protected areas, disturbance to the functioning of ecological corridors,	long-term, permanent	direct	Possible cumulation with tasks involving flood protection, hydraulic engineering and other modernisation, construction or expansion
Water	At the investment stage, negative impact is possible due to the risk of surface water (water from excavation drainage, leakages from machines) and groundwater (migration of pollutants from the soil - leakages from machines) pollution. In the case of sewerage networks, possible negative impact on the channels of watercourses in case of their crossing. In the exploitation phase, the impact is strongly positive (groundwater, surface water) due to the reduction of pollution loads discharged into the environment. Possible significant negative in the case of a failure (emergency discharge of untreated or partially treated wastewater, groundwater pollution caused by soil pollution, very serious consequences may occur due to a failure of the operating collector - soil and groundwater contamination).	short-term, long-term	direct, indirect	n/a
Air	negative: exhaust and dust emissions during construction works; in the exploitation phase - emission of pollutants into air (e.g. methane from sewage treatment plant), possible release of odours Negative impact is of a short-term nature, and is associated with the investment realisation i.e. performance of construction works.	short-term	direct	n/a

Reference to matrix of impacts (project code: policy objective, specific objective, action, project	**Specific objective, action**	**Area of support, typical projects** (from the matrix of impacts)		
Humans	positive: improving the humans' health condition as a result of wastewater management regulation. possible negative: inconveniences resulting from a possible odour nuisance in the case of a sewage treatment plant construction in the vicinity of residential areas. During construction, noise and pollution emissions from construction equipment.	long-term	direct	n/a
Land surface	negative: changes in landform at the stage of investment, temporary excavations, movement of land and soil. positive: protection of soil from pollution.	short-term, temporary, long-term	direct	n/a
Landscape	deterioration of landscape values in relation to investment implementation. The degree of landscape transformation depends on the investment scale and location. In highly anthropogenically transformed areas the landscape disturbance will be hardly noticeable. However, in the case of locations in weakly transformed areas in the vicinity of recreation places, the investment can cause landscape disharmony.	long-term	direct	n/a
Climate	positive: possible insignificant impact on greenhouse gas reduction.	long-term, permanent	indirect	n/a
Natural Resources	consumption of building materials during the construction period.	short-term	direct	n/a
Heritage Objects	no impacts	-	-	n/a

Reference to matrix of impacts (project code: policy objective, specific objective, action, project	**Specific objective, action**	**Area of support, typical projects** (from the matrix of impacts)		
Material Assets	positive: the increase of the value of properties covered by the collective municipal sewage and water supply system.	long-term, potential	indirect	n/a
Other supplementary information and reference to map analysis using GIS. Identification of all protected areas and ecological corridors associated with the project.	Work performance in a manner ensuring water protection. In the exploitation phase - monitoring aimed at early detection of possible pollution of water due to a failure. In the case of treatment plants discharging wastewater into the receiving body in the catchment of dammed lakes, the high degree of treatment of nutrients is very important.			
Conclusions on effects reduction (mitigation), alternatives and compensation.				

The table above should indicate the following impacts:	positive, negative, significant negative, possible	long-term, medium-term, short-term, permanent, temporary	direct, indirect, secondary	If cumulative impacts occur, actions shall be identified to which the impacts refer.

Reference to matrix of impacts (project code: policy objective, specific objective, action, project	**Specific objective, action**	**Area of support, typical projects** (from the matrix of impacts)		
LIP 5 1	**Large Investment Infrastructure Projects** LIP 5 Sustainable Water Management and Recycling: A Way to Revive Western Ukraine and Eastern Poland	**Construction of 60 km of water supply network in Svitaz, Pulmo and Shatsk equipped with a water treatment plant, construction of a water treatment plant in Rivne and Hoszcza, reconstruction of a wastewater treatment plant in the village of Kwasylów, reconstruction of the water supply in Svaliava, construction of a sewage system in Lipina Nowa and Zawody, improvement of the sewage treatment plant in Skerbeszów and cleaning works at the Ternopil reservoir**		
Elements of the environment subject to analysis	**Description of the results of analyses**			
	Identification of impacts	Duration	Type	Possible cumulative impacts
Biodiversity	negative: at the construction stage, formation of communication barriers, interference with water relations (required excavations and their adequate drainage), habitat fragmentation, access roads to excavations,	short-term, long-term, permanent	direct	Possible impact cumulated with tasks requiring construction works, e.g. Construction of a network and a water treatment plant at the same time.
Fauna	negative: noise and exhaust emissions during the works, resulting in disturbance of animals, formation of barriers to animal movements; restriction of access to the food base, feeding and breeding sites	short-term, temporary	direct	Possible impact cumulated with tasks requiring construction works, e.g. Construction of a network and a water treatment plant at the same time.
Flora	negative: interference in water regime has a direct impact on the habitats; direct destruction of habitats occurs together with their fragmentation which is caused by a removal of trees and shrubs, synanthropisation and spread of alien species along the road. Occupation of sites of valuable species and fragmentation of natural habitats,	short-term, temporary	direct, indirect	Possible impact cumulated with tasks requiring construction works, e.g. Construction of a network and a water treatment plant at the same time.

Reference to matrix of impacts (project code: policy objective, specific objective, action, project	**Specific objective, action**	**Area of support, typical projects** (from the matrix of impacts)		
Integrity of protected areas	negative: destruction of habitats and their fragmentation, which affects the disruption of animal migration routes;	short-term, permanent	direct	Possible impact cumulated with tasks requiring construction works, e.g. Construction of a network and a water treatment plant at the same time.
Water	possible negative during implementation: risk of surface water and groundwater pollution during construction works, risk of adverse changes in water relations. In the operation phase - water abstraction, which increases water consumption.	short-term, long-term	direct	Possible cumulative impact with tasks associated with the construction of similar facilities within the catchment boundary.
Air	negative: exhaust and dust emissions during construction works. Negative impact is of a short-term nature, and is associated with the investment realisation i.e. performance of construction works.	short-term	direct	Possible impact cumulated with tasks requiring construction works.
Humans	negative: noise and exhaust emissions during the works; changes in the organisation of road traffic connected with the execution of the investment. Negative impact is of a short-term nature, and is associated with the investment realisation i.e. performance of construction works. positive: providing people with water	short-term, long-term	direct	Possible impact cumulated with tasks requiring construction works.
Land surface	negative: change in landform at the stage of investment execution, temporary excavations, land and soil movement,	short-term, temporary	direct	n/a
Landscape	no impacts, except during construction	-	-	n/a

Reference to matrix of impacts (project code: policy objective, specific objective, action, project	**Specific objective, action**	**Area of support, typical projects** (from the matrix of impacts)		
Climate	positive impact on adaptation to climate change, independence from individual water sources.	long-term, permanent	indirect	n/a
Natural Resources	negative: consumption of raw materials in connection with realisation of the investment. During operation - higher water consumption.	short-term, long-term, permanent	direct	n/a
Heritage Objects	no impacts, except during construction	long-term, potential	indirect	n/a
Material Assets	positive: increase in the value of properties covered by the collective water supply system.	long-term, potential	indirect, secondary	n/a
Other supplementary information and reference to map analysis using GIS. Identification of all protected areas and ecological corridors associated with the project.	Construction work performance in a manner ensuring water protection. Implementation of a monitoring system for the completed water supply network.			
Conclusions on effects reduction (mitigation), alternatives and compensation.	The construction of the water supply system should be accompanied by the construction of a sewage system so that wastewater is not discharged directly into the environment.			