Ministry of Agriculture, Forestry and Water Management
Directorate for Water Management
11070 Belgrade,
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FLOODS EMERGENCY AND RECOVERY PROJECT (FERP)

ENVIRONMENTAL MANAGEMENT PLAN

for

The rehabilitation of the river bank in the Gomolava region - the left bank of the Sava River in Hrtkovci

from rkm 120+707 to rkm 121+277 (L = 570m)

DRAFT DOCUMENT 02
B E L G R A D E, April 2018

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Abbreviations

BoQ	Bill of Quantities
DAP	Directorate of Agrarian Payments
DWM	Directorate for Water Management
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESMF	Environmental Management Framework Document
ESSS	Environmental and Social Safeguard Specialist
FERP	Floods Emergency Recovery Project
GEMM	General Environmental Mitigation Measures
IFC	International Financial Corporation
MAFWM	Ministry of Agriculture, Forestry and Water Management
MEP	Ministry of Environmental Protection
PINP	Provincial Institute for Nature Protection
PIPCM	Provincial Institute for Protection of Cultural Monuments
PIU	Project Implementation Unit
PPE	Personal Protective Equipment
PSC	Project Supervision Consultant
PWMC	Public Water Management Company
RDNEIA	Request for decision about the need for EIA
SSIP	Site Specific Implementation Plan
WB	The World Bank Group

INTRODUCTION

In May 2014 the Republic of Serbia was afflicted with massive flooding caused by heavy rains which caused the formation of torrential streams, rivers overflowing across the dams and breach of embankments at several places resulting in flooding of much of the territory of Serbia. The flood affected 49 municipalities and thousands of hectares of arable land.

This document presents the Environmental Management Plan (EMP), which has been prepared to ensure that the proposed Floods Emergency Recovery Project is implemented in accordance with the World Bank operational policies and local legislation related to environmental protection. The main purpose of this EMP is to serve as a valuable tool for identifying possible key environmental and social impacts that will result from the project and proposing mitigation measures to address the most significant impacts. The EMP also shows the responsibilities of different parties involved in the project implementation. Although major environmental issues are not anticipated (the project has been categorized as environmental Category B according to the World bank OP/BP 4.01 on Environmental Assessment) since the investments are directed on the rehabilitation of existing embankment infrastructure, the EMP identifies several mitigation measures aimed at environment protection and maintenance of environmental conditions, mainly during the civil works execution.

1. FLOODS EMERGENCY RECOVERY PROJECT - DESCRIPTION

1.1. Background

Unprecedented rainfall started in early/mid-May 2014 had caused massive floods, resulting in the declaration of a national state of emergency in Serbia on May 15, 2014. The heavy rainfall, led to a rapid and substantial increase of water levels in eight of the main rivers in western, south-western, central and eastern Serbia. Flash floods destroyed houses, bridges and sections of roads, while rising water levels resulted in flooding of both urban and rural areas. The disaster resulted in 51 deaths, with approximately 32,000 people evacuated from their homes, and around 110,000 households cut off from the electricity supply. Overall, the floods affected some 1.6 million people, or about one fifth of the total population living in 49 municipalities. Adverse weather conditions have continued during next few months, causing further damage to harvest and energy infrastructure.

The Floods Emergency Recovery Project focuses on the priority sectors identified in the Recovery Needs Assessment including energy, agriculture, and flood protection. The project would help close the financing gap and ensure continued provision of electricity services, forestall a likely decline in direct support to farmers in affected areas at a time when the fiscal accounts are under severe stress and help improve resilience to disasters by financing investments in critical flood prevention infrastructure.

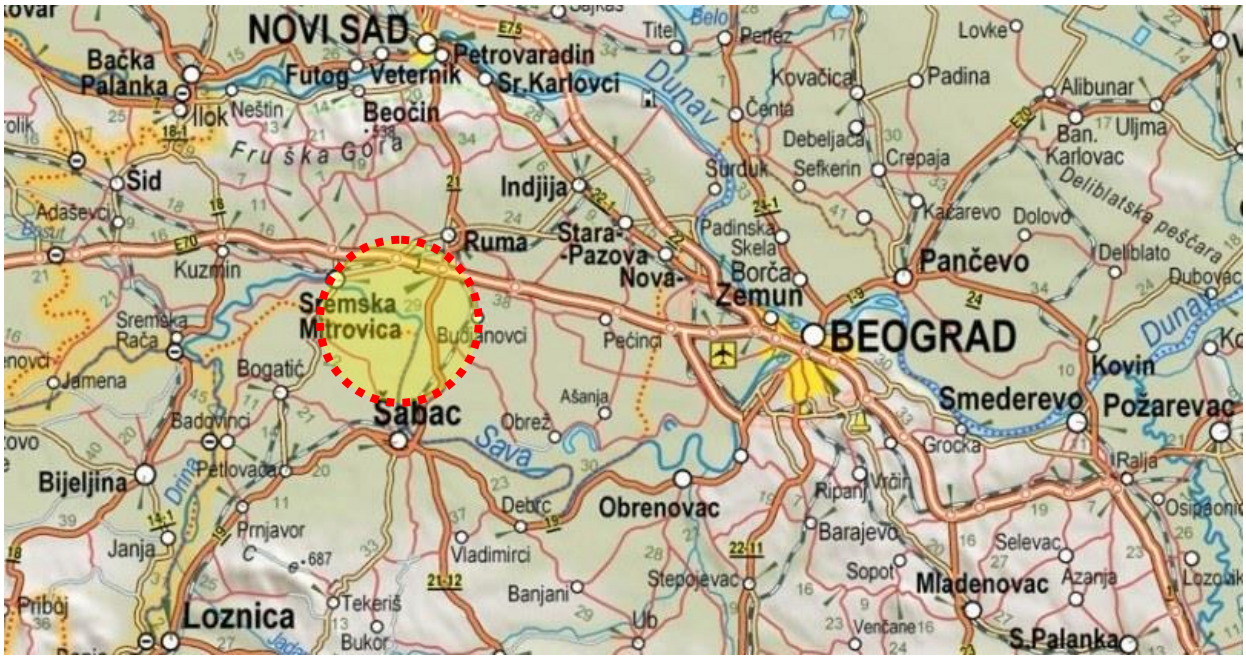
1.2. Hrtkovci Project Description

Flood Protection of Hrtkovci area includes rehabilitation of the left bank of Sava River within the explored zone of the archaeological sites „Gomolava“ and „Gomolava necropolis“, settlement Hrtkovci, Ruma municipality, in total length of 570m, starting from rkm 120+707 to ending chainage rkm 121+277.

Hrtkovci is a settlement located in Ruma municipality, inside Srem county in the Republic of Serbia. It is 17 km away from the city of Ruma. According to the 2011 census Hrtkovci have a population of 3036. The settlement is located along the left river bank of the Sava River.

Throughout time Sava River has eroded the high river bank, especially during high water periods when erosion processes are intensified and the river bank is constantly being destroyed, and the entire riverbed moves towards the left river bank and farmlands in the vicinity of Hrtkovci settlement.

The project defines technical solutions and scope of works on river bank rehabilitation in the Gomolava region, with the goal of stopping further erosion of the left river bank resulting from the meandering river flow through the region and poor river bank resilience, rehabilitating existing damages and permanently halting the erosion process of the river bank and the riverbed on the project section.



Picture 01: Project location, Hrtkovci region, Sava River

Picture 02: Project micro location, Gomolava

Due to the proximity of the archaeological locality, project works will be executed in complete compliance with the protection conditions issued by the competent institutions.

Besides the undisputable hydraulically and hydrotechnical benefits, regulation of the left river bank of the Sava River will greatly improve the quality of life of the local community. The project will allow for a creation of a pleasant ambient in place of the currently eroded riverside and will improve the general hygiene on project section.

1.2.1. Baseline conditions assessed during route survey

The project section is 570 m long and has a poor soil composition and is exposed to a constant influence of flowing from the Sava River. Above mentioned properties cause continuous destruction of the river bank and movement of the left riverside towards the Hrtkovci settlement and neighboring farmlands. The erosion process influences the river bank and the riverbed. Destruction of the left river bank has caused the local access road to advance further into the riverbed. The river bank along the section is nearly vertical or with steep slopes. Slope stability along the riverside is constantly endangered, and the erosion process is unceasing. Along the riverside on some less steep slopes there is some vegetation, both short and tall.

Due to erosion, the left bank of Sava River is destroyed and the riverbed had moved towards the left river bank near agricultural lands and the village Hrtkovci (Picture 03).

Some flood protection works, funded from the State Budget, have already been executed, from confluence of Vranj channel into Sava River on rkm 120+347 to the beginning of the protected archaeological site Gomolava on rkm 120+567. Works on next section (“tel”), i.e. on first section of Gomolava archaeological site (rkm 120+567 to rkm 120+707, see Pictures 05, 07, 08 and 09) will not be subject of works and implementation under Gomolava Sub-Project too (nor any other World Bank supported Sub-Project). However, project design is harmonised with IPCM preconditions and Consent for performing of flood protection works on all sections from 120+347 to rkm 121+277 is already obtained on 24 Jul 2017 from IPCM Sremska Mitrovica (Annex 2).

The project section is uninhabited. Characteristics of the surrounding land are typical for plaines, there is a slight north – south inclination. Geologically project section is defined as a river terrace with gravel and sand, facies with sand, clay and loess sediments.

Watercourses present at the project section are Sava River and Vranj channel. Project location is on an alluvial terrace of Sava River, and possess typical, for alluvial terraces, hydrological characteristics. Underground water levels are high. Maximum river levels are observed in spring (Apr – May) and in autumn (Nov – Dec) , whereas minimum river water levels are marked in summer (July – August) and in winter (Jan – Feb). Average annual river flow is 1561 m^3/s.

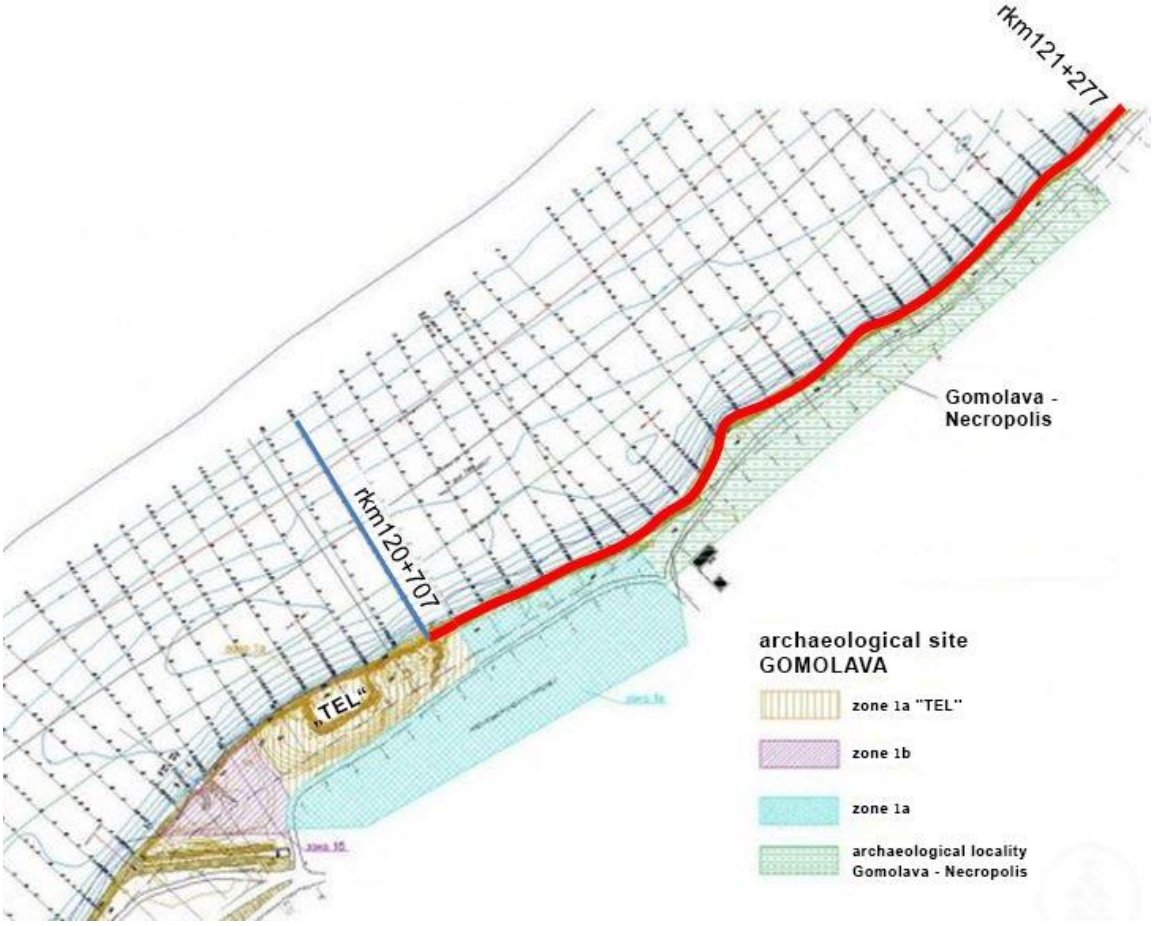
Picture 03: Current condition of the left river bank of Sava River at project location

Most significant damages have been assessed on a stretch from rkm 120+347 to 121+277 near Hrtkovci, where Sava River is approximately 20 m away from the nearest residential house (Picture 04). This area of the Sava River in the vicinity of Hrtkovci is known as Gomolava, since the archaeological site with same name and of highest importance is located along the eroded river bank.

Picture 04. Most significant damages on the project section

The high river bank along the project section presents the principal flood protection measure since the terrain behind it is mostly plain and with lower altitude. However the high river bank doesn't protect the area from centurial high waters of Sava River.

In Hrtkovci, present state of the riverside requires urgent rehabilitation works on the protection of the left river bank in the subject section, in order to halt the erosion and destruction of the river bank, which is Hrtkovci settlement's principal line of defence from Sava River's high water.



Picture 05 Location of the construction site in respect to the protected cultural heritage

Flood protection works on project section, starting from rkm 120+707 to rkm 121+277, in total length of 570m, their environmental impacts, mitigation measures and monitoring activities are subject of this Environmental Management Plan (EMP). Protective archaeological excavation is completed on this section and Preconditions and Consent on Preliminary design are obtained from relevant institution – Institute for Protection of Cultural Monuments (App. 02). Land acquisition issues were solved for the purpose of obtaining the construction permit which was obtained on August 31st, 2017, and there is an approved design which determines the concept of river bank rehabilitation. Seven parcels in total will be affected by the works, six of them were and will continue to be in state property, whereas a leasing agreement has been concluded with the owner of the single privately owned parcel for the duration of the works. This parcel shall be acquired permanently and compensated at full replacement cost.

The Gomolava Sub-Project will have minor social impacts and will require land acquisition of one land parcel in private ownership and the remaining area of land already is within the right of way and owned by PWC Vode Vojvodine . The social aspects, impacts of Sub-Project and the respective safeguards will be in detailed covered by the Abbreviated Resettlement Action Plan (ARAP) which is under preparation and is acceptable in this case since less than 200 persons are displaced and impacts are considered "minor". The ARAP shall follow the consultation and disclose requirements as provided under OP 4.12 and is expected to be .completed by June 2018

1.2.1.1. Significant contents on the project section

Along the left river bank there are agricultural lands, Hrtkovci settlement and the archaeological site Gomolava, enriched with artefacts from prehistoric and antic times. Archaeological site is composed of two wholes: Archaeological locality „Gomolava“ and „Gomolava – Necropolis“. This project will be realized strictly on the explored section of these archaeological localities, downstream from rkm 120+707.

Picture 06. Closest residential building, rkm 120+867, 20m away from eroded river bank

Significant contents inside the project area are:

- Explored part of archaeological site „Gomolava“ from rkm 120+707 to rkm 120+827, particularly from the end of „tel“ to Vuk Karadzic Street in Hrtkovci.

- Explored part of the archaeological site „Gomolava – Necropolis“, from rkm 120+847 to rkm 121+207, from Vuk Karadzic Street upstream in respect to the Sava River.
- Nearest residential building belonging to the Hrtkovci settlement is at the chainage rkm 120+867. The building is located just 20m from Sava River's eroded river bank (Picture 06) and the agricultural land in its vicinity is being gradually destroyed by the continuous erosion of the river bank.
- On the section from rkm 120+867 to rkm 121+277 there is a service road which follows the river course. Agricultural lands extend all the way to the road.

1.2.1.2. Protected cultural heritage

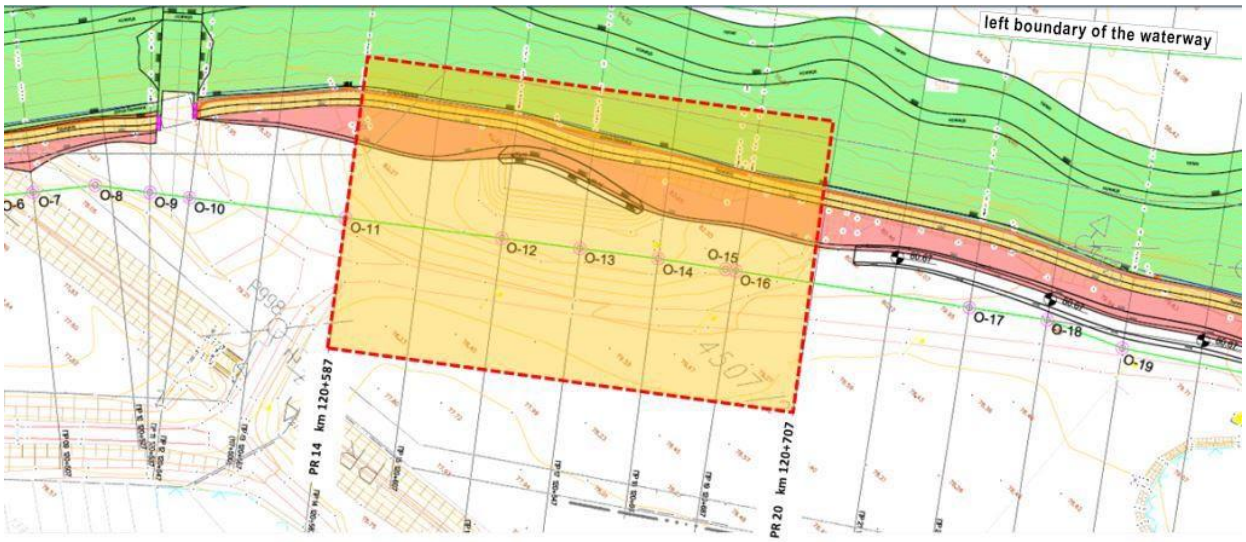
Archaeological site “Gomolava”

“Gomolava” is a world-famous archaeological site on the edge of Hrtkovci settlement. It is placed along the left bank of the Sava River, from rkm 120 + 567 to rkm 120 + 827, in the length of 260m. With its richness of diverse findings, through several archaeological layers, “Gomolava” witnesses the lives of people in this region since the prehistoric age. This multilayer archaeological site is a settlement where the horizons of habitation from late Vinca, Neolithic, early Bronze and Iron Age are recorded.

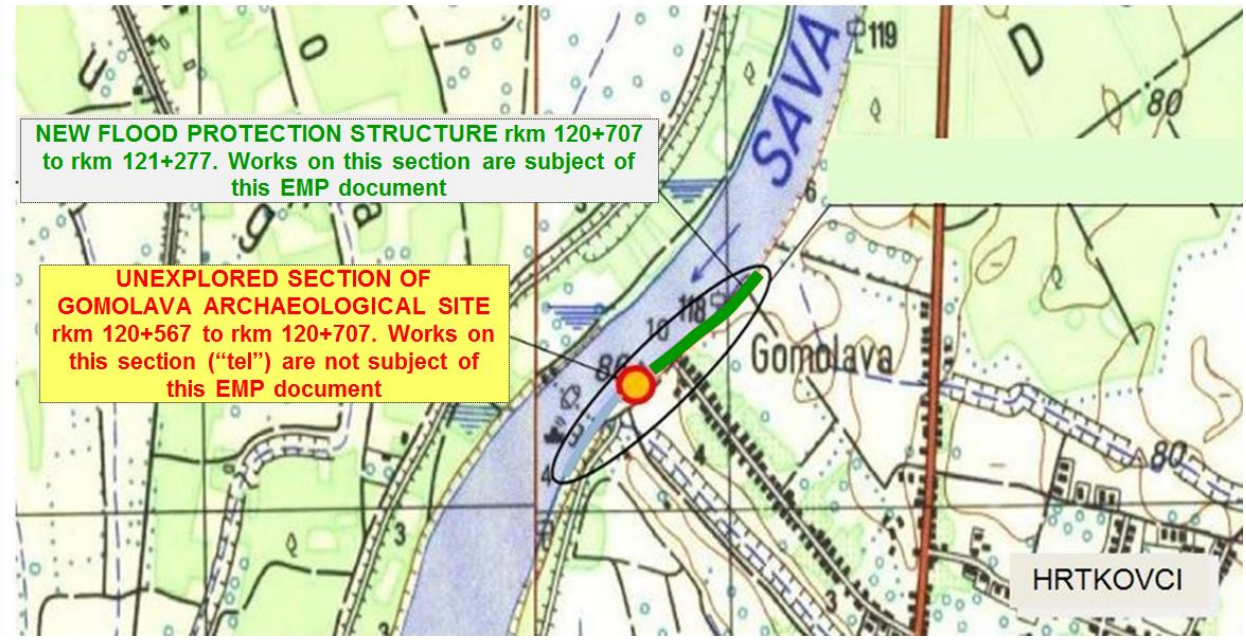
Archaeological exploration works were started in 1904, and systematic works on “Gomolava” started in 1953 and are still periodically active. The site itself is now under the protection of the state as an archaeological site of exceptional importance, but it is seriously endangered by the Sava River that erodes it, especially in the high water level seasons.

Project rehabilitation works on the left river bank will be performed at explored part of the „Gomolava“ archaeological site, in length of 120m, from rkm 120+707 to rkm 120+827, since the archaeological excavations on this section are completed and necessary consents have been obtained from the competent Institution (IPCM from Sremska Mitrovica, App 02).

The zone of the unexplored part of the archaeological locality „Gomolava“ („tel“), from rkm 120+567 to rkm 120+707, in a length of 140m, is not a subject of this project or this EMP, and works on the abovementioned section are not to be executed until the design solution for this section has been modified and approved by IPCM.



Picture 07. Unexplored section of Gomolava – layout plan



Picture 08. Position of the unexplored section of "Gomolava" (tel) and construction site

Picture 09. Unexplored section of Gomolava archaeological site is out of work zone

Archaeological site "Gomolava – Necropolis"

Archaeological locality "Gomolava – Necropolis" in Hrtkovci stretches from the end of Vuk Karadzic Street (rkm 120+847) towards northeast in a length of 340 m (rkm 121+207) with a width of 25-40 m. A part of the locality has been registered along Vuk Karadzic Street. Archaeological locality has been explored in spring of 1991. When protective probe explorations have been completed (Picture 10). Latest protective archaeological exploration took place in 2017. In accordance with the preconditions obtained from the Institute for protection of Cultural Monuments from Sremska Mitrovica, issued on June 2016 (App. 02).

Picture 10. Protective probe explorations at the locality „Gomolava – Necropolis“

Archaeological locality “Gomolava – Necropolis” encompasses two zones of protection:

- 1 a – roman necropolis, spans from rkm 120+847 to 121+007.
- 1 b – Hallstatt and Latin necropolis, located in continuation of roman necropolis (rkm 121+007) to the border of cadastral municipalities Hrtkovci and Jarak (rkm 121+207)

Part of the explored Necropolis on the left bank of Sava River in Hrtkovci confirms the existence of a roman settlement during III and IV centuries. After the devastation of the roman Necropolis at the end of the IV century, in the V and VI century, the area was used as a burial ground.

Site “Leget“ in Sasinci

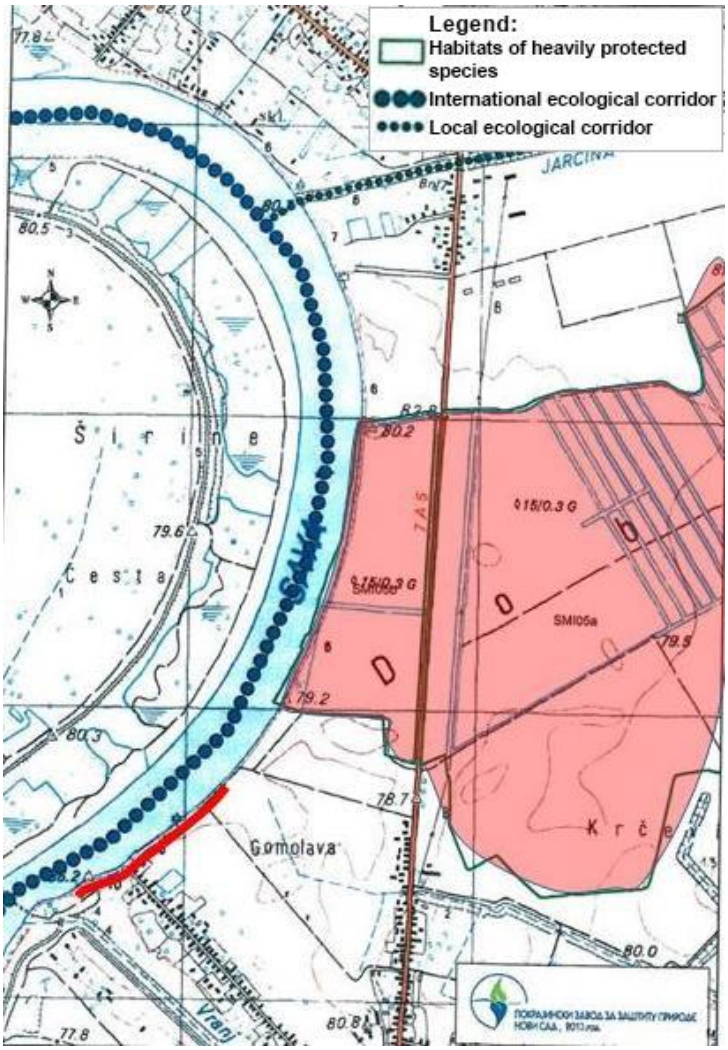
Outside the project area, in its broader environment, at a distance of around 5 km there is a culturally and historically significant area „Leget“ in Sasinci, municipality of Sremska Mitrovica. It has been marked with number 5 on the map of protected goods. (Picture 12)

1.2.1.3. Zone of works and its location in respect to natural protected areas

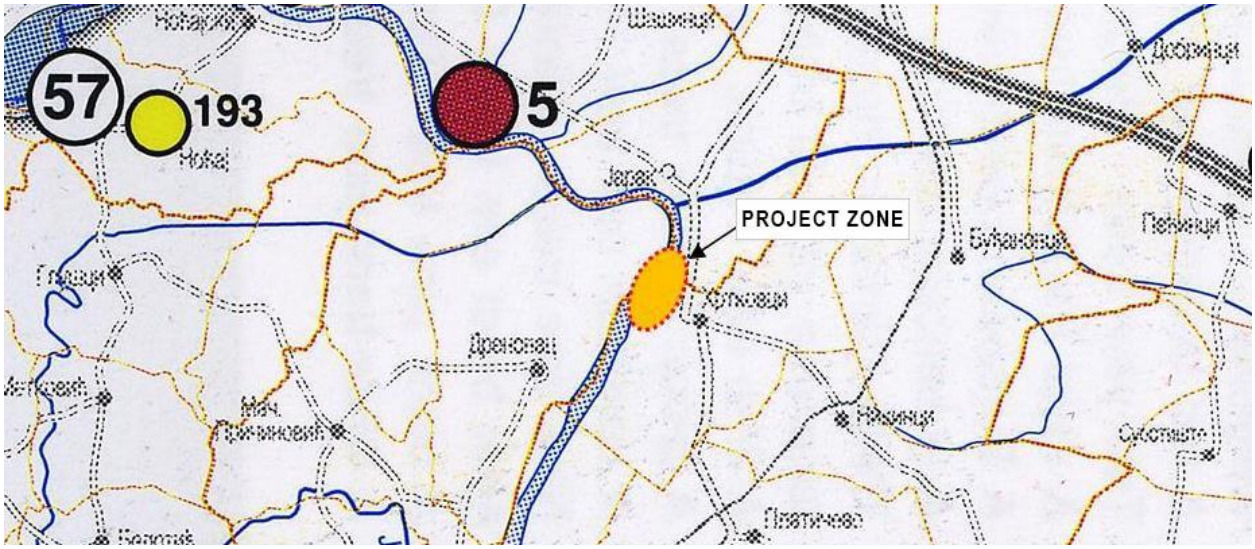
Immediately alongside the work zone flows Sava River – an international ecological corridor established by the regional Spatial Plan of the Autonomous Province of Vojvodina and by the Statute on ecological networks (SL.GL.RS 102/2010)

In the vicinity of the subject section, at a distance of around 350m, there is a habitat of protected and heavily protected plant species „Dobrec“ which belong to the category of hygrophilous forests and bushes. (Picture 11)

Inside the wider area surrounding the project section there are 2 protected natural goods. The closest protected natural area is a monument of nature – Morus tree trunk inside the Nocaj farm (yellow circle no. 193 on Picture 12), which is 14 km away from the project area. Second protected natural area is the nature reserve "Zasavica“ (white circle no. 57 on Picture 12) which is at least 16 km away from the project area.



Picture 11. Location of the habitat of protected and heavily protected species „Dobrec“



Picture 12. Location of project area in respect to protected areas.

Significant contents surrounding the project section:

Before the start of the project section, on which river bank rehabilitation works are to be done, there is a confluence of the Vranj channel rkm 120+487, boat access ramp rkm 120+542 and a section of the archaeological site „Gomolava‘‘ from rkm 120+567 to 120+707 („tel“) on which

protective excavation works have not been completed and will be exempt from all river bank rehabilitation works, which is confirmed within the Plan of detailed regulation of the Sava river bank area.

The section covered by the Preliminary Design, from rkm 120+347 up to the beginning of the archaeological locality Gomolava at rkm 120+567, river bank rehabilitation works will be financed by Republic of Serbia. Design is already completed and Construction permit is obtained on 31 Jul 2017 from relevant institution (Annex 3). No social issues are recognised on this section due to the fact that all cadastral parcels at that section are state property[1]. Works are funded by State Budget and are ongoing.

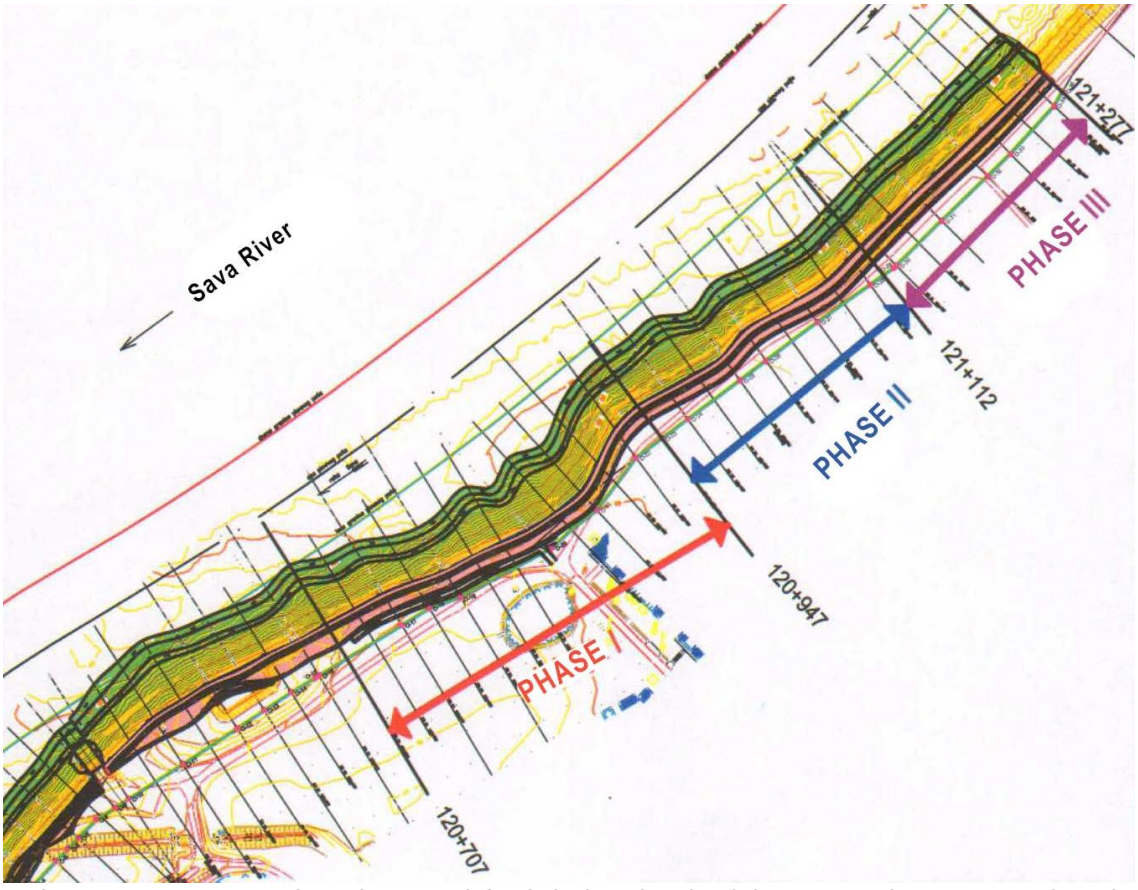
1.2.2. Summary of construction works on realization of project Hrtkovci

Along the subject section construction works to be executed consist of works on stabilization/rehabilitation of endangered section along the high river bank of Sava River, in a total length of 570m, from rkm 120+707 to rkm 121+277.

River bank rehabilitation works consist of embankment construction at the riverside slope, above which geocover shall be placed to protect the upper slope, beneath the embankment geocover shall be placed as well in length of 5m, and at the level of medium waters two layers of stone lining shall be placed. At the bottom of the embankment a stone foot will be constructed as a mean to stop the slippage of stone lining placed on the slope. Behind the stone foot towards the river axis, a carpet shall be constructed, 5.0m in length.

Works are to be executed in 3 phases, as shown on Picture 13.

Works on proposed project are divided into 6 groups: geodetic works, preparatory works, earthworks, stone works, works on flood protection structure and finishing works.



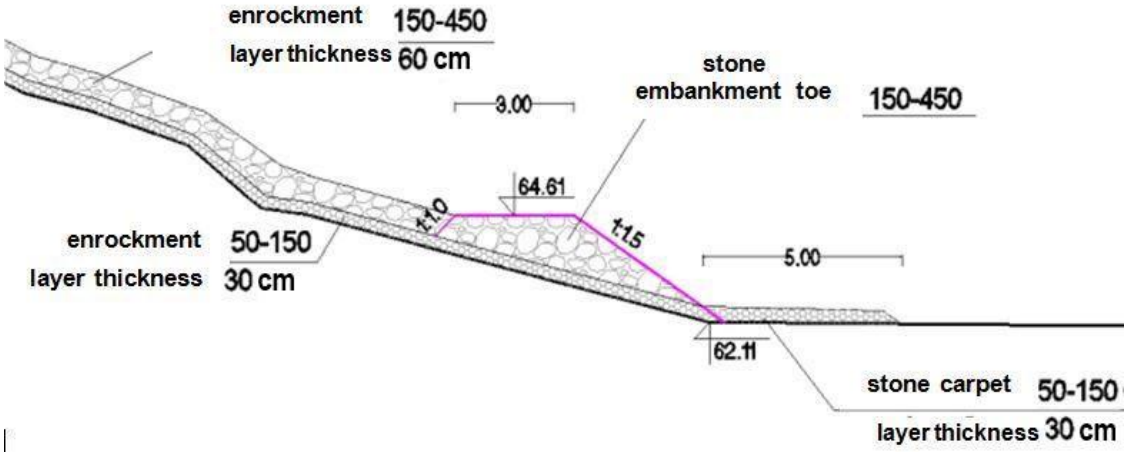
Picture 13. Construction phases of the left river bank of the Sava River near Hrtkovci

[1] All cadastral parcels from rkm 117+200 to 120+867 are State Property. It is confirmed within the relevant documentation (Detailed Design, Spatial Plan)

1.2.3. Conceptual Design solution – embankment works

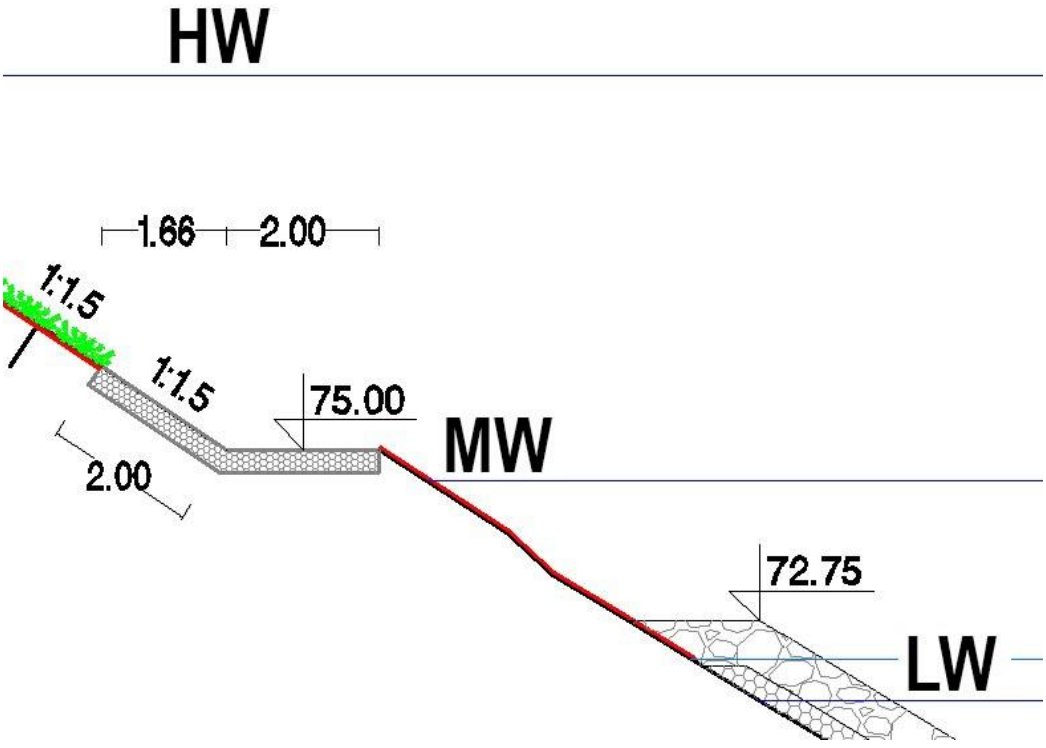
Left side of the Sava riverbed will be encased with stone lining, in order to improve water flow and stop water accumulation.

Slope steepness of 1:1.5 has been determined in the hydraulic calculation. On the lower part of the slope, works are to be done with stone lining and an average stone size of 0.15 m. On the higher part of the slope, the riverbed encasement works consist of two layers of stone lining, with stone sizes varying from 30 cm to 60 cm. (Picture 14.). .).



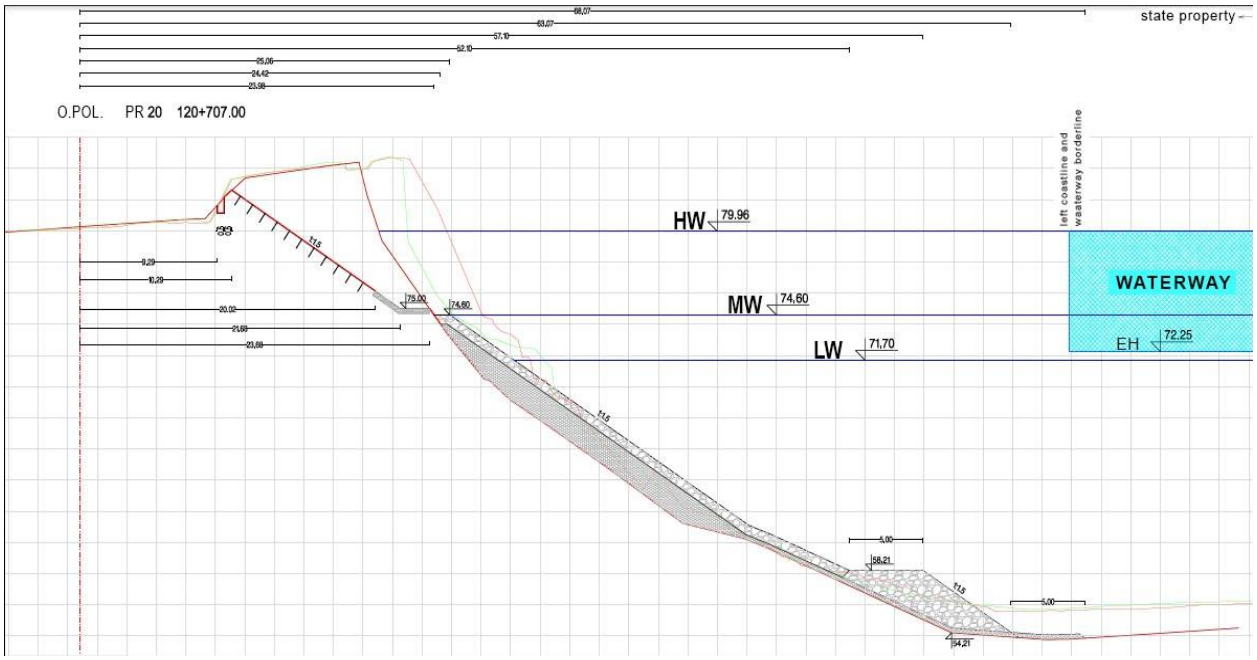
Picture 14. Typical cross section with stone lining detail

Shoulder width of 2 m has been designated, located on the altitude of 75 m.n.m, little above the altitude of medium waters (from 74.59 m.n.m to 74.62 m.n.m) and has been placed to improve the stability of the riverside slope. Pictured below is the shoulder in respect to the level of high waters (HW), medium waters (MW) and low waters (LW). (Picture 15.).



Picture 15. Typical cross section of the accepted technical solution, embankment with shoulder

Height and width of the embankment structure vary from 21m to 24m and from 50m to 68m, respectively. Dimensions vary throughout different cross sections along the embankment.



Picture 16. Cross section at rkm 120+707, beginning of the subject section

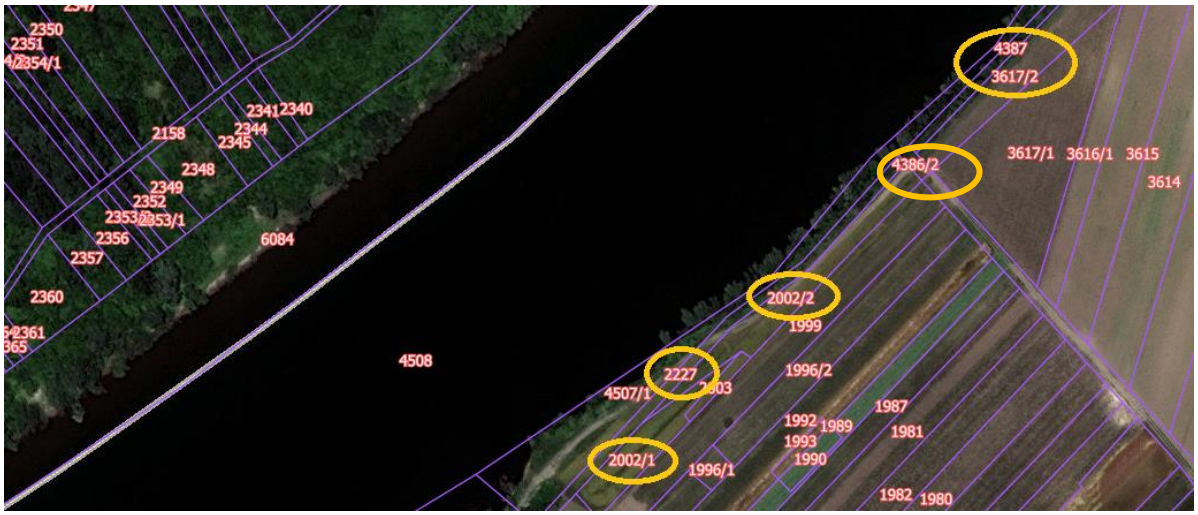
1.2.4. Property – Legal affairs

On a part of the subject section from rkm 120+707 to rkm 121+047, in total length of 340m there are three parcels belonging to the Public Water Management Company „Vode Vojvodine". Those are parcels 4507/1, 4507/2 and 4508.

Eroding and removal of the river bank, has caused the riverbed to leave the parcels belonging to Public Water Management Company „Vode Vojvodine", carry away parts of the local access road, and arrive to the private parcel 3617/2, as shown on picture 17.

From rkm 121+047 to rkm 121+277, along the 230m long river bank, preliminary design confirmed existence of 5 cadastral parcels, in total area of 2.464 m2 due for expropriation. Those are following parcels: State owned parcels 2227, 2002, 4386 and 4387 and private parcel 3617/2.

For purposes of obtaining the building permit issued by the municipality of Ruma (no. 351-1750/2017 dated 31.07.2017. Annex 3) title and property issues have been addressed. IN respect to three parcels (2227, 4386 and 4387) and they were and remain in state property – Municipality of Ruma, whereas concerning parcel no. 3617/2 a leasing agreement has been concluded with the owner, Jovan Savic.



Picture 17. Location of affected parcels along the subject section

Also, in accordance with Construction permit, cadastral parcel nr. 2002 was not recognised as relevant for subject works. However, social screening for this project has been separately performed by project social safeguard specialist and social impacts of the project, land acquisition issues and other relevant information will be presented within the separate report.The initial screening identified a fully documented and stand-alone ARAP will be prepared, consulted on and publicly disclosed by June 2018..

LIST OF PARCELS AND OWNERS

Ruma municipality
Cadastral municipality Hrtkovci

Parcels on the embankment

Parcel No.	No. of immovable	Parcel area			Owner	Type of property	Adress/Location	Comments (exclusive ownership,share, compensation)
		(ha)	(ar)	(m^2)				
2227	194		20	28	Ruma municipality	State property	Village	
3617/2	759		97	64	Savic Veljko, Savic Jovan	Private property	Sestar	PWMC " Vode Vojvodine" has a loan agreement
4386	194		63	58	Ruma municipality	State property	Sestar	
4387	194		9	0	Ruma municipality	State property	Sestar	
4507/1	63	59	81	50	PWMC "Vode Vojvodine"	State property	Road	
4507/2	63	2	93	13	PWMC "Vode Vojvodine"	State property	Krcevine	
4508	63	125	55	92	PWMC "Vode Vojvodine"	State property	Sava River	

For passage of mechanization and material transport, the existing road network will be used.

Works that are the subject of this EMP document shall be executed on the land that is either(i) state owned or (ii) privately owned - subject to land acquisition and compensation prior to commencement of civil works. The Project has minor impacts to land acquisition and will not result in resettlement or economic displacement. The ARAP for this Sub-Project shall be in place by June 2018, subject to approval by the World Bank.

2. LEGAL AND INSTITUTIONAL FRAMEWORK

2.1. Relevant Institutions

The Ministry of Agriculture, Forestry and Water Management (MAFWM) and the Ministry of Environmental Protection (MEP) are the key relevant institutions for environmental management for FERP related projects.

The other aspects of environmental management related to FERP projects are dealt with several other institutions, among which are the Institute for Nature Protection of Serbia and the Institute for Protection of Cultural Monuments of the Republic of Serbia, and the Public Water Management Companies (PWMC) “Srbija Vode”, “Beograd Vode” and “Vode Vojvodine”.

2.2. EIA procedure in the Republic of Serbia

In the juridical system of the Republic of Serbia, the Environmental Impact Assessment procedure is regulated by the Law on Environmental Impact Assessment, which is completely in line with European EIA Directive (85/337/EEC, 97/11/EC, 2003/35/EC and COM 2009/378). According to that Law, preparation of the Environmental Impact Assessment is not required for the flood protection rehabilitation projects unless their alignments are placed within or in the vicinity of the nature or culture protected areas. In such cases the Project Proponent is obliged to submit so-called “Request for Decision about Need for Environmental Impact Assessment” (RDNEIA) to the Ministry of Environmental Protection (MEP). Depending on the Ministry’s assessment of significance of potential environmental impacts of the project, it is decided if there is a need (or not) to apply partial or full EIA procedure for the relevant sub-project.

Request for opinion regarding necessity of EIA procedure for each sub-project which is found to be adjacent or within the nature/cultural protected area will be submitted to the Department of Environmental Impact Assessment within the Relevant Institution.

2.3. Relevant Government Policies, Acts, Rules, Strategies and Guidelines

Environmental protection in Republic of Serbia is regulated by several national and municipal laws and by-laws. The environmental legislation in force in Serbia is summarized in Annex 1.

The main legal documents are:

- The Constitution of Serbia ("Official Gazette of RS" No. 98/06).
- The National Strategy for Sustainable Development ("Official Gazette of RS" No. 72/09, 81/09)
- Law on Environmental Protection ("Official Gazette of RS" No. 135/04, 36/09, 72/09, 43/11, 14/16)
- Law on Environmental Impact Assessment ("Official Gazette of RS" No. 135/04)
- The Law on Waste Management ("Official Gazette of RS" No. 36/09, 88/10, 14/16)
- The Law on Water ("Official Gazette of RS" No. 30/10, 93/12, 101/16)
- The Law on Occupational Safety and Health ("Official Gazette of RS" No. 101/05, 91/15)
- Law on Planning and Construction ("Official Gazette of RS" No. 72/09, 81/09, 64/10, 24/11, 121/12, 42/13, 50/13, 98/13, 132/14, 145/14)
- Law on Nature Protection, ("Official Gazette of RS" No. 36/09, 88/10, 91/10, 14/16)
- Agricultural Land Law, ("Official Gazette of RS" No. 62/06, 41/09, 112/15)

Regulations established on the basis of the Law on EIA include the following:

- Decree on establishing the List of Projects for which the Impact Assessment is mandatory and the List of projects for which the EIA can be requested ("Official Gazette of RS" No. 114/08)
- Rulebook on the contents of requests for the necessity of Impact Assessment and on the contents of requests for specification of scope and contents of the EIA Study ("Official Gazette of RS" No. 69/05)

2.4. Applicable Safeguards

Safeguard Policies triggered by the Hrtkovci Project:

Safeguard Policies Triggered by the Project	Yes	No
Environmental Assessment OP/BP 4.01	**X**	
Natural Habitats OP/BP 4.04		**X**
Forests OP/BP 4.36		**X**
Pest Management OP 4.09		**X**
Physical Cultural Resources OP/BP 4.11	**X**	
Indigenous Peoples OP/BP 4.10		**X**
Involuntary Resettlement OP/BP 4.12		**X**
Safety of Dams OP/BP 4.37		**X**
Projects on International Waterways OP/BP 7.50	**X**	
Projects in Disputed Areas OP/BP 7.60		**X**

3. POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

Since the existing infrastructure, facilities and equipment will be rehabilitated, reconstructed, repaired and replaced during the realisation of the project, impacts on environment will be a consequence of human presence and construction machines, and the nature of construction works at a location, which are limited to the location of works or its surrounding vicinity.

The construction and reconstruction of flood protection structures would not pose significant risks to the environment. In addition, the project aim is only to improve the efficiency of flood control systems. As a consequence, the range of impacts is limited (impacts directly related to the rehabilitation activities) and their magnitude remains small (localized impacts and no significant effect on future operation). Considering the nature of the proposed project, it is anticipated that adverse environmental impacts can be expected in the construction phase mainly. The aspect of health and safety at work is also taken into consideration. It is to be noted that parts of the construction work are taking place in an urban environment, however in all parts in an environment already strongly influenced by human activities. Broadly, the impacts in the construction phase can be of the following types:

- **Soil and Water Pollution**: during construction activities, when using machinery, there is a possibility of soil contamination due to accidental spills of oils and fuel from construction machinery. In the area of construction works, construction waste is generated which, if not properly disposed of, may result in adverse impacts. The construction works carried out inside the river bed results in a temporary increase of turbidity of the watercourse.
- **Flora and fauna**: construction works in the river bed along with the temporary increase of turbidity in the watercourse threaten freshwater habitats. Impacts on other habitats are not expected.

- **Disposal of excavated materials and construction wastes**. Demolition debris and excessive soil are usually generated during the rehabilitation works on drainage and flood control systems;
- **Degradation of landscapes and soil erosion**. The impacts on vegetative cover will be short-term, localized, and totally associated with rehabilitation works;
- **Impacts from temporary access roads and work areas**. Establishment of temporary dirt roads to access work areas and temporary disposal sites for excavated materials can enhance soil erosion, and degrade the landscape;
- **Noise and vibration disturbances** during construction and temporary air pollution (dust) related to the transportation of construction materials and truck traffic. These impacts will occur during the construction and rehabilitation works, but will be only short-term. Effects include dust from construction activities, noise during trench excavation, possible effect of vibration caused by operation of heavy machinery, increased traffic in some sections of roads, etc.;
- **Safety hazards from construction activities**. No major hazards are expected the construction of the proposed project elements, as long as proper construction practices and safety procedures are applied;
- **Impacts on historic-cultural and archaeological monuments**. There is a probability of discovering archaeological or historic-cultural artefacts during project implementation, considering that rehabilitation works are to be executed in a registered area of archaeological localities Gomolava and Gomolava-Necropolis. Inside the project area previous protective archaeological excavations have been completed and there have been significant archaeological finds in the area.

3.1. Potential environmental impacts of Hrtkovci Project

In general, all negative impacts in the phase of construction are temporary and can be mitigated by applying good construction practices.
Significant negative impacts on natural environment in the operational phase are not expected. On the contrary, impacts in the operational phase are considered to be highly

positive, as project aims at prevention of risks for environment, humans and civil infrastructure.

Construction of flood protection structures is based on the river bank regulation; it is about preventing the flooding of relatively small areas of urban zones, and at relatively shallow depths. T he downstream impact on other users is negligible.
Project impacts by phases are shown in following table:

Phase	Type of impact
Construction phase	Soil compaction and erosion Dust emission Noise Soil and water pollution Impact on aquatic ecosystem Degradation of riparian vegetation caused by construction work Risk to people and/or animals of unfenced and unlabelled construction site Health and safety risk for workers on the construction site due to the potential land sliding
Operational phase	Low impact on natural environment on the project location Positive impact in terms of prevention of risks for environment, humans and property
Degree of negative impact	Minimum if mitigation measures are applied

3.2. Other positive impacts of FERP Project

The repair of flood-damaged infrastructure and facilities will bring economic, social, health and ecological benefits, to population and local community in this area. Experiences of similar projects show that the project will have many positive effects on society through the creation of conditions for population's standard growth in almost all segments (education, health protection, additional employment).

If some of the unemployed are employed or if employment has impact on unemployment, the project creates social benefits due to decreased social support or aid to the unemployed. That is the case in the flood emergency response project.

3.3. Potential negative Impacts and recommended Mitigation Measures

Summary of key impacts during construction phase and recommended mitigation measures are described in following table:

impact	Signifi-cance	comment
impacts on land use/ settlements,	low	There will be no land acquisition as defined by WB OP 4.01 during the project implementation. In case of any land acquisition – RFP document is prepared for this Project
ground and surface water,	low	Due to low amount of drainage water that can be potentially drained into any river the consequential impact is expected to be minimal to negligible. Also, improper disposal of excavated materials and construction wastes could adversely impact ground and

impact	Signifi-cance	comment
		surface water
air quality,	low	Temporary impact. Local air quality may experience some moderate and temporary deterioration due to dust from transportation of construction materials and truck traffic and elevated levels of nitrogen oxide (NOx) and sulphur oxide (SOx) from construction equipment exhausts. Impact can be mitigated by following GEMM procedures
flora and fauna (protected areas and species),	low	Minimal loss or damage of vegetation and loss and damage or disruption to fauna can occur during works. Impacts can be offset or mitigated by following GEMM procedures. There will be no negative impacts on protected areas due to nature of works.
noise and vibration,	low	Only limited temporary impact during the rehabilitation phase. Mitigation measures in form of noise deflecting shields will be placed where the work-scheduling activities cannot have desired effect. Impact can be mitigated by following GEMM procedures.
soil quality,	low	Soil contamination can occur from: drainage of dredged materials, spillage of hazardous and toxic chemicals. Impact can be mitigated by following GEMM procedures
Loss of top soil	low/ negligible	• Loss of top soil due to temporary access roads and work areas, Landscape degradation
waste,	low	Health hazards and environmental impacts can happen due to improper waste management practices. Impact can be mitigated by following GEMM procedures
cultural and religious issues,	medium/ moderate	Regular rehabilitation activities could, if not properly managed, cause disturbance to the cultural and religious sites. Impact can be avoided by implementing EMP related measures.
cumulative impacts etc.	medium/ moderate	Temporary, rehabilitation works may cause a slight increase of noise levels and air pollutants concentrations during the works only
Staff safety	low	Construction workers may be affected adversely due to hazardous working environments where high noise, dust, unsafe movement of machinery etc. may be present.

Possible adverse effects as a consequence of temporary construction activities shall, among other things, consist of: damages to access roads, noise, waste and dust; gaseous emissions; potential soil and water contamination; short-term disruptions to surrounding ecosystems; and momentary disruptions to neighboring settlements through various project and operational activities. Of activities not present directly at the construction site, the following stand out: quarry and borrow pit operations which if not managed properly, may lead to temporary adverse impacts. Contractor's camp site may be a potential source of temporary adverse impacts.

3.4. Potential water / wetland contamination

During rehabilitation of the left river bank of the Sava River in the area near Hrtkovci settlement, there is a possibility of water contamination, as a consequence of water effluent from the construction site, spillage of fuels and oils from construction mechanization and uncontrolled flow of sanitary waters from the Construction site and the Contractor's camp.

Considering possible pollutions after works completion, they are limited to accidents only. In which case as defined by the Ministry of Interior and the Law on Water, procedures for incidental situations will be applied.

Spillage of fuels and oils may, in most cases, occur inside the Contractor's camp and on manipulative surfaces where equipment and construction mechanization is maintained and cleaned. Effluent dirty water should be treated in separators of adequate size before being discharged towards the recipient.

If any spillage occurs inside the project area, the Contractor is obligated to mitigate the problem by applying absorbing materials, such as absorbing carpets / linens, or sand, as well as remove the layer of contaminated soil and move it to an approved location, in accordance with the Law.

4. MITIGATION MEASURES AND ENVIRONMENTAL MONITORING ACTIVITIES

For each FERP sub-project ESSS is obliged to produce a site-specific EMP document. EMP is an Action Plan that indicates which of the Environmental Assessment report recommendations and alternatives will actually be adopted and implemented. EMP could be produced as a part of Detailed Design or as a free-standing document. It will ensure incorporation of the relevant environmental factors into the overall project design and will identify linkages to other safeguard policies relating to the project.

4.1. Mitigation Measures

4.1.1. General

This section details out the potential environmental impacts of the FERP sub-projects.

4.1.2. Environmental Impacts and Respective Mitigation Measures

Protection of cultural heritage

Impact – Earthworks and accompanying activities may cause adverse impacts, in terms of potential damages to cultural properties, which may be found in soil layers along the section subject to works.

Mitigation measures – In accordance with conditions and consents obtained from the IPCM (Annex 2) for the sake of protecting the archaeological site „Gomolava“ and locality „Gomolava – Necropolis“ following protection measures have been given:

- The Investor is obligated to secure previous protective archaeological excavations along the course of the embankment which encompasses the total length of the archaeological site „Gomolava“ and locality „Gomolava – Necropolis“ inside the cadastral municipality Hrtkovci. (In accordance with the abovementioned condition previous protective excavations have been completed in 2017. Based on the communication with IPCM Sremska Mitrovica, additional protective excavations, from rkm 120+707 to rkm 120+827, will be implemented parallel with the execution of works.)
- The Investor is obligated to complete all preparatory works regarding clearing out the terrain, before performing archaeological excavations;
- Contractor responsible for the execution of archaeological excavations shall execute them according to the plan and program fabricated by IPCM Sremska Mitrovica in collaboration with the National Institute for Protection of Cultural Monuments – Beograd, in an area totalling 1.985m2;

- If immovable objects requiring special conservatorial and research procedures are discovered during protective archaeological excavations, Contractor of archaeological excavations is obligated to notify the Investor by fabricating a special report, in order to allow for timely completion of unforeseen works by annexing the original contract;
- The Investor is obligated to provide archaeological supervision during earthworks execution and embankment construction, on all other sections not encompassed by protective archaeological excavations;
- If archaeological sites or artefacts are found during the execution of construction and other works, the Contractor is to immediately and without delay, cease the works and inform IPCM in Sremska Mitrovica, as well as take necessary measures as to not destroy or damage the site and preserve it the same way as it was found.
- The Investor is obligated to provide funding for monitoring, research, protection and storing of discovered remains, according to the program and BoQ for archaeological research;
- The Investor is obligated to report earthworks execution in a timely manner and deliver the work plan for earthworks execution;
- The Investor is obligated to notify IPCM Sremska Mitrovica on any/all modifications to the embankment course;
- All additional works regarding reconnaissance, archaeological supervision and protective archaeological excavations shall be regulated through a special Contract with the Investor;
- The Investor is obligated to provide funding for storing, publishing and presenting goods which will be discovered, archaeologically excavated and researched, documented and conserved for the sake of permanent scientific and professional presentation of cultural heritage encompassed in an investment project;

Potential air pollution - Dust

Impact - Possible sources of air pollution will be dust due to maintenance activities, machinery movement and other sources. Rehabilitation works involve breaking up, digging, crushing, transporting, and disposal of small quantities of dry materials. Locally, the air quality may experience some moderate and temporary deterioration due to dust from construction traffic and elevated levels of nitrogen oxide (NOx) and sulphur oxide (SOx) from construction equipment exhausts. The dust may settle on vegetation, crops, structures and buildings.

Mitigation Measures - Spraying of water is the main way of controlling dust. Water is, in any case, required to be added to fill material during the rehabilitation works.

Potential water contamination

Impact - Water contamination may occur during the execution of the project from site run off, spills from the equipment maintenance areas and sanitary wastewater effluent from the work camps. As for the potential pollution during operation, these are mostly limited to accidents. In such a case, procedures for action in incidental situations, as defined by the Ministry of Interior and in the Water Law, will apply.

Mitigation Measures - Fuel and lubricant spills can occur at the Contractor's work camp while maintaining and washing equipment and work vehicles. During the normal operations, these areas should be equipped with the adequately sized, gravity oil separator. Should spills occur, to mitigate the problem the Contractor should use absorbing materials, such as absorbent mats/fabrics, or sand and scrape off the contaminated soils and dispose them in approved facility, in accordance with the Water Law.

Potential contamination of soils due to pesticide usage and improper waste disposal

Impact - Potential contamination of soils due to increased use of pesticides during implementation of Farm Incentives Program (FERP – Component 2).

Mitigation Measures - Integrated Pest Management Approach (IPM) is mandatory during project execution. Ensuring of appropriate selection and safe use of pesticides when they are

needed by project demands related to safeguard OP 4.09 - Pest Management. Avoiding of use of pesticides that fall in WHO classes IA, IB or II.

Impact - Potential contamination of soils and watercourses as a result of improper disposal of liquid and solid wastes from rehabilitation activities.

Mitigation Measures - The mitigation measure to avoid contamination of soils and watercourses is to ensure that waste materials are properly disposed to the suitable locations. Partly, inert waste materials can be used as filling material.

Contractor should produce a Waste Management Plan for the Project. Mitigation measures should, among other requirement, contain contractor obligations to:

- Locate the garbage pit/waste disposal site min 500 m away from the residential area so that people are not disturbed with the odour likely to be produced from anaerobic decomposition of wastes at the waste disposal places. Encompass the waste disposal place by fencing and tree plantation to prevent children to enter the area. All solid waste will be collected and removed from the work camps and disposed in approval waste disposal sites.
- In case oil and grease are trapped for reuse in a minimum 60cm thick lined pit, care shall be taken to ensure that the pit should be located at the lowest end of the site and away from the residential areas.
- In case of filling of low-lying areas with wastes, it needs to be ensured that the level matches with the surrounding areas. In this case care should be taken that these low lying areas are not used for rainwater storage

Equipment maintenance and fuelling

Impact - equipment maintenance and fuelling may cause contamination of soils and watercourses, including groundwater, if handling of lubricants, fuels and solvents is improper or careless.

Mitigation Measures - To avoid damage to natural environment there is a need to ensure proper handling of lubricants, fuels and solvents while maintaining the equipment.

Occupational Health and Safety

Impacts - Construction workers may be affected adversely due to hazardous working environments where high noise, dust, unsafe movement of machinery etc. may be present.

Mitigation Measures - The Contractor shall instruct his workers in health and safety matters, and require from the workers to use the provided personal safety equipment. Contractor has to ensure that all operators of heavy or dangerous machinery are properly trained/certified, and also insured. He will have to provide first aid facilities, rapid availability of trained paramedical personnel, and emergency transport to nearest hospital with accident and emergency facilities.

Noise

Impact - Noise caused by the rehabilitation works will have only a temporary impact. Although temporary and mostly moderate, noise impacts in the vicinity of residential areas may cause negative health impact, if not mitigated.

Mitigation Measures - In sensitive areas (schools, nature parks, hospitals) special care regarding noise emission will be taken by the Contractor, strictly respecting the EMP requirements. In case of noise disturbance with noise emissions which are above permitted level, temporary noise barriers should be considered as appropriate mitigation measure. Awareness building and administrative measures should be taken to ensure proper maintenance of vehicles. In case of exceeded noise limits for sensitive areas the Contractor should erect temporary shields to prevent a free noise spreading to the sensitive receptors.

Based on the preliminary assessment, key mitigation measures recommended under this Environmental Management Plan (EMP) are listed as follows:

- Identify and locate on project plans any sensitive natural resources in the project area including but not limited to patches of natural habitat, bird colonies, and wetlands, unique plant communities etc. (consult with local nature protection authorities).
- Identify local access routes through and around cultivated land and pasture.
- Minimize requirements for temporary or permanent alteration of lands outside the embankment right of way.
- Dredging for embankment materials should occur only within marked navigation channels to minimize destruction of fish habitat.
- Provide for zones of preliminary accumulation of wastes that will cause no damage to the vegetation cover and other components of the environment.
- Transport and disposal of construction concrete rubbles, debris and spoils in approved paths and landfills/disposal sites.
- Delineate access roads/ work areas carefully and prevent their expansion.
- Rehabilitate access roads and work areas after work completion (scratch soil with special engine, put fertile topsoil in place, etc.).
- Use closed/covered trucks for transportation of construction materials.
- Clean the surrounding area from dust by water sprinkling, removal of excess materials and cleaning of sites upon completion of activities.
- Restoration to quasi-original conditions of landscape after completion of construction and rehabilitation works.
- Arrange necessary preservation measures (establish protection zones, by-pass these areas during transportation and other).
- Cease the works as soon as historical and cultural monuments are encountered during earthworks and provide relevant information to the State Agency for Historical and Cultural Monuments Protection.
- Conduct mid-term and end-of-project inspections to the sites during construction and rehabilitation works.

Prior to initiating works, the Contractors will be required to prepare and submit for approval Site-Specific Implementation Plans (SSIP) consisting of:

- Waste and wastewater management plan
- Oil and fuel storage management plan
- In-river works management plan
- Camp management plan
- Re-foresting plan
- Emergency response plan

The following table present Mitigation Plan for FERP Sub-project Hrtkovci and it is intended as a checklist to ensure that relevant mitigation measures are implemented at appropriate project stages.

4.2. Mitigation Plan for FERP Sub-Project Hrtkovci

Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
PRE-CONSTRUCTION	**EIA Procedure and Bid documents preparation**			
	Impact of works on protected cultural heritage site „Gomolava“, from rkm 120+707 to rkm 120+827	During works execution provide protective archaeological excavations along the locality, In accordance with conditions issued by the competent Institute for Protection of Cultural Monuments	Investor PWMC „Vode Vojvodine“	
	Bid documents prepared with access to or use of the this EMP in a translated version	No bid documents will be prepared without incorporated a (Serbian) copy of the mitigation and monitoring plan EMP, which shall be included in the safeguard clauses of the Technical Specifications in the contracts and commitment to comply with Lender Requirements	Investor PWMC “Vode Vojvodine”	
CONSTRUCTION	**Material supply**			
	Sand and gravel borrow pit. disturbance of Sava River bed, water quality, ecosystem disturbance	use existing borrow pits or buy material at licensed separations; requirement for official approval or valid operating license	Sand and gravel Contractor or Separation	to be specified in bid documents -Conditions for selection of subcontractors for material supply
CONSTRUCTION	**Material transport**			
	dust, fumes	All trucks are to be covered	Truck operator	a)-d) to be specified in bid documents-Technical Specifications for realization of works
	Stone, Dust	wet or cover truck load	Truck operator	
	Sand and gravel, Dust	wet or cover truck load	Truck operator	

Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
CONSTRUCTION	**Construction site**			
	Potential damage of cultural property during the earth works	*If archaeological sites or artefacts are found during the execution of construction and other works, the Contractor is to immediately and without delay, cease the works and inform IPCM Sremska Mitrovica, as well as take necessary measures as to not destroy or damage the site and preserve it the same way as it was found.*	Construction Contractor	Archaeological Supervision will be established on this project in order to prevent damage to cultural properties
	Potential water and soil pollution from improper material storage, management and usage	organize and cover material storage areas; isolate concrete, works from watercourse by using sealed formwork or covers; isolate wash down areas of concrete trucks and other equipment from watercourse by selecting areas for washing that are not free draining directly into watercourse	Construction Contractor	
	Water and soil pollution from improper disposal of waste materials	dispose waste material at location protected from washing out, should be marked in the site plan; if not on site, then at authorized landfill / depot	Construction Contractor	
	Water and soil pollution from improper disposal of waste materials	Storage of wastes according to international best practice (IFC EHS General Guideline). Apply additional measures for storage of hazardous wastes (such as use of secondary containment, access restriction, provision of PPE etc.) as necessary to prevent harm to construction staff, environment and public. Use and labelling of designated waste collection containers and storage areas for different kinds of wastes.	Construction Contractor	
	Potential contamination of soil and water from improper maintenance and fuelling of equipment	apply best engineering practice in safe storage and handling of lubricants, fuel and solvents by secured storage; ensure proper loading of fuel and maintenance of equipment; collect all waste and dispose to permitted waste recovery facility	Construction Contractor	

Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
	Water and soil pollution from improper disposal of waste materials	Transport of waste in marked vehicles designed to the type of waste to minimise the risk of release of materials (hazardous and non-hazardous materials) and windblown debris. Training of drivers in handling and disposal of their cargo and the documentation of the transport describing the nature of the waste and its degree of hazard.	Construction Contractor	
	Possibility of encountering an archaeological site	if an archaeological site is encountered, Contractor will immediately suspend the Works and inform IPCM	Construction Contractor (Periodical IPCM monitoring)	
	Workers safety	provide workers with safety instructions and protective equipment; safe organization of bypassing traffic	Construction Contractor	
	Community safety	regulate traffic and pedestrian circulation in instances of increased risk; put up signs visualizing construction site boundaries;	Construction Contractor	
MAINTENANCE	**Construction site**			
	Obligation of publishing the results of archaeological excavations	It is necessary to provide funding for storing, publishing and presenting for goods which will be discovered, archaeologically excavated and researched, documented and conserved for the sake of permanent scientific and professional presentation encompassed in an investment project	Investor PWMC “Vode Vojvodine”	
	Possible air, water and soil pollution / dust, vehicle exhaust, fuel and lubricants spills	apply best engineering practice in safe storage and handling of lubricants, fuel and solvents by secured storage; ensure proper loading of fuel and maintenance of equipment; collect all waste and dispose in line with the Law on waste management (“Official Gazette of RS” No. 36/09, 88/10, 14/16); Organize and cover material storage areas; selecting areas for washing that are not free draining directly or indirectly into watercourse (Sava River); dispose waste material at location protected from washing	Maintenance Contractor	

Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
		out		
Planning/ Designing	Assure compliance with relevant construction field legislation	Acquire construction permit Provide Water management guidelines if subprojects are executed near surface watercourses.	Project applicant	
Planning/ Designing	Potential damages to the existing infrastructure and facilities, especially underground installations (water supply and sewerage pipeline etc.) which cause obstacles in the provision of services to consumers.	Precisely situate the position of infrastructural facilities and underground installations at the location of works in cooperation with relevant institutions at all levels of authority.	Project applicant in cooperation with designers and representatives of relevant institutions of local authority.	
Planning/ Designing	Increased possibility of employment and gaining income in the local community.	Prioritise qualified local population in employment.	Contractor	Problems should be regulated through tender documentation.
Rehabilitation/ Reconstruction! Repair	Supply of material	Use the existing quarries and concrete bases for the supply of material. Use licenced suppliers for other materials	Contractor	Borrow pits from which materials and concrete base are supplied must have valid environmental permits.
Rehabilitation/ Reconstruction/ Repair	Transport of material.	Using trucks with awning and special vehicles depending on the type of material.	Contractor	When transporting material, drivers must observe speed limitations
Rehabilitation/ Reconstruction/ Repair	Violation of vegetation cover	Replant or re-seed vegetation. Apply measures of good construction practice	Contractor	Problems should be regulated through the Works execution contract.

Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
Rehabilitation/ Reconstruction/ Repair	Emissions of dust from the landfill of earth material. due to vehicles' movement on macadam roads and construction works execution.	Compact deposited earth material. Sprinkle dust sources with water in order to reduce impacts on the surrounding population and vegetation. Control the speed of vehicles in order to reduce dust rising. Prepare and implement a Plan for construction site organisation that includes good construction practices.	Contractor	Problems should be regulated through the Works execution contract.
Rehabilitation/ Reconstruction/ Repair	Emission of gases and particles from vehicles, mechanisation and generators.	Regular equipment maintenance. The contractor is obliged to submit evidence of vehicle roadworthiness in line with the regulations on hazardous gases emission. Prepare and implement the Construction Site Organisation Plan that incorporates good construction practice measures.	Contractor	Problems should be regulated through the Works execution contract.
Rehabilitation/ Reconstruction/ Repair	Noise in the operation of heavy mechanisation and generators.	Observe law-defined working hours at the construction site. Make the generator casings sound proof if they are located near residential units. Ensure mufflers for heavy machinery. Prepare and implement the Construction Site Organisation Plan that incorporates good construction practice measures.	Contractor	Problems should be regulated through the Works execution contract.
Rehabilitation/ Reconstruction/ Repair	Increased water turbidity as a consequence of the works.	Construction works should be executed in a way that surfaces and natural contents outside the project are not damaged and that works are performed so that watercourses are not unnecessarily made tumid and watercourses discontinued. Works should be executed in dry weather. Prepare and implement a Construction Site Organisation	Contractor	Contractor
Rehabilitation/ Reconstruction/ Repair	Soil groundwater and surface water pollution. with oils and lubricants due to equipment poor maintenance and repairs and refuelling at the Construction site.	Avoid servicing and refuelling at the site. Use protective foils during possible vehicle refuelling and maintenance at the construction site. Provide absorbing material in case of fuel spills. Used oiled materials and agents should be managed in l line with the Waste management report. Procedure for actions in case of incidental oil and lubrication spills.	Contractor	Problems should be regulated through the Works execution contract.

Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
		Prepare and implement the Construction Site Organisation Plan that incorporates good construction practice measures. Measures from water management documents and measures from the Waste management report.		
Rehabilitation/ Reconstruction/ Repair	Water and soil pollution due to inadequate disposal of communal, inert and hazardous waste.	Typical containers for solid Communal waste are placed at the construction site locations; Acceptance of collected Communal waste and its disposal by authorised institutions; Hazardous waste fractions (used waste oils, oiled packaging. bitumen agents waste, waste transformer oils, waste asbestos-cement pipes etc.) are separately collected into typical containers or metal barrels; they are to be consigned to entities authorised for hazardous waste management; Re-usage and recycle of waste whenever possible. It is prohibited to incinerate waste in the open and at the location. Actions in line with the waste management report.	Contractor	Problems should be regulated through the Works execution contract.
Rehabilitation/ Reconstruction/ Repair	Reconstruction et damaged brides	Avoid driving on the Sava river banks; Ensure streambed and bank in the zone of bridges, upstream and downstream from bridges, as to ensure their protection from erosion processes.	Contractor	Problems should be regulated through the Works execution contract.
Rehabilitation/ Reconstruction/ Repair	Reduced passability through the area where the works are executed.	Plan the relocation of equipment at times when daily traffic is not jammed; Provide alternative passage for pedestrians and vehicles in cooperation with local authorities or provide a safe passage through the construction site; Avoid roads through inhabited areas especially near schools and hospitals; Prepare and implement the Construction Site Organisation Plan that incorporates good construction practice measures.	Contractor	Problems should be regulated through the Works execution contract.
Rehabilitation/ Reconstruction/	Potential pollution of soil and water due to the	Installation of ecological toilettes for workers	Contractor	Problems should be regulated through the

Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
Repair	discharge of waste sanitary waters from the construction site			Works execution contract.
Rehabilitation/ Reconstruction/ Repair	Population at increased risks of traffic accidents and construction works to population.	Assure adequate warning signs, lighting, protective fencing etc. Observe traffic rules. Clean construction waste form the construction site both in the construction phase and after works completion, when closing the construction site. Assure medical supplies and aid through institutional and administrative arrangements with municipal hospitals at the construction site. Implement the Construction Site Organisation Plan.	Contractor	Problems should be regulated through the Works execution contract.
Rehabilitation/ Reconstruction/ Repair	Risk of injuries at work.	Demand from all workers to abide by the Protection at work measures; Provide protective equipment; Install warning signs at the construction site; Prepare and implement the Construction Site Organisation Plan and Protection at work measures plan.	Contractor	Problems should be regulated through the Works execution contract.
Rehabilitation/ Reconstruction/ Repair	Construction material leftovers after the closure of temporary construction sites	All shivers and material that remain after the closure of temporary construction sites are to be removed from the location and reused/recycled where possible. All remains are to be disposed of in a manner that will not be harmful to environment; this is to be done by companies that have permits to perform such works	Contractor	Problems should be regulated through the Works execution contract.

Summary of Potential Environmental Impacts and Mitigation Measures

POTENTIAL ENVIRONMENTAL IMPACTS	STAGE / MECHANISM		DURATION	SUGGESTED MITIGATION MEASURE		RESPONSIBILITY	TIMING	
HYDROLOGY & HYDROGEOLOGY Changes to surface and ground water quantity and quality	Construction Activities		Construction Period	No mitigation measures required.		Not applicable.	-	
	Operation and Maintenance		Lifespan of embankment	No mitigation measures required.		Not applicable.	-	
SOILS Erosion or compaction of soils	Construction Activities		Construction Period	• Salvage of topsoil and sod for reclamation following completion of the works.		Contractor & Local Water Authority	During and at completion of construction. Periodic monitoring until reclamation criteria achieved.	
	Operation and Maintenance		Lifespan of embankment	No mitigation measures required.		Local Water Authority	-	
AQUATIC RESOURCES Disturbance of wetlands or fish habitat	Construction Activities		Construction Period	• Follow approved dredging practices. • Minimize disturbance to riparian wetlands.		(Ministry or Directorate responsible for fish management) Institute for Nature Conservation (in protected areas)	During dredging.	
	Operation and Maintenance		Lifespan of embankment	No mitigation measures required.		Not applicable.	-	
VEGETATION Disturbance to vegetation communities, tree removal	Construction Activities		Construction Period	• Locate borrow pits and sand drainage areas to minimize new areas of disturbance. • Utilize existing disturbed areas whenever possible.		Tendering agency/ local water authority	Detailed design (tender specification).	

POTENTIAL ENVIRONMENTAL IMPACTS	STAGE / MECHANISM	DURATION	SUGGESTED MITIGATION MEASURE	RESPONSIBILITY	TIMING
	Operation and Maintenance	Lifespan of embankment	No mitigation measure required.	Not applicable.	-
WILDLIFE Disturbance and dislocation from habitat	Construction Activities	Construction Period	• Schedule construction to minimize disturbance to nesting birds.	Tendering agency.	Detailed design (tender specification)
	Operation and Maintenance	Lifespan of embankment	No mitigation measures required.	Not applicable.	-
POLLUTION Fuel spills or improper waste disposal	Construction Activities	Construction Period	• Equipment free from leaks and in good operating condition. • Refuel at least 15 m away from surface water. • Prompt clean-up of fuel spills. • Solid and human waste management plan for the construction site.	Tendering agency/ local water authority/ contractor	Construction start-up and construction period. (condition of tender)
	Operation and Maintenance	Lifespan of embankment	No mitigation measures required.	Not applicable.	-

5. MONITORING ACTIVITIES

DWM/PIU and PSC will monitor overall environmental performance during project implementation. Each FERP sub-project will have a site specific EMP document in which a monitoring plan(s) and check-lists are presented.

For each of the environmental components, the monitoring plan specifies the parameters to be monitored; location of the monitoring sites and duration of monitoring. The monitoring plan also specifies the applicable standards, implementation and supervising responsibilities.

In addition to the critical locations selected during design stage, the environmental monitoring will also be done at the construction camp site and any other plant site as determined relevant during rehabilitation works stage.

World Bank guidance on the environmental aspects of project monitoring, including its health and socio-economic aspects, is provided in Environmental Assessment Sourcebook Update 14 Environmental Performance Monitoring and Supervision (June 1996).

The project's monitoring program included surface and groundwater quality impacts, disturbance to important ecological habitats including riverside ecosystems, unscheduled environmental compliance inspections during construction, final inspection upon completion to ensure site condition is satisfactory, and assessment of sites prior to and after construction to ensure no loss of natural values.

Elements of an environmental performance-monitoring program:

Objectives

Indicators linked to project impacts and mitigation measures

Measured parameters

Institutional responsibilities, timing

Reporting arrangements

Cost and financing provisions

The following table presents the monitoring activities and responsibilities over the implementation of proposed mitigation measures, during execution of FERP sub-project Hrtkovci.

5.1. Monitoring Plan for FERP Sub-Projects Hrtkovci

Phase	What is the *parameter to be monitored?*	Where *the parameter should be monitored?*	How *the parameter should be monitored?/ type of monitoring equipment*	When *the parameter should be monitored? (frequency of measurement or continuous)*	*Why the parameter should be monitored? (optional)*	Institutional responsibility Operate
CONSTRUCTION			**Material transport**			
Stone	truck load covered or wetted	job site	supervision	unannounced inspections during work, at least once per week	and safety requirements and enable as	Supervision Contractor
Sand and gravel	truck load covered or wetted	job site	supervision	unannounced inspections during work, at least once per week	little disruption to traffic as it is possible	Supervision Contractor
Traffic management	hours and routes selected	job site	supervision	unannounced inspections during work, at least once per week		Supervision Contractor
CONSTRUCTION			**Construction Site**			
Cultural goods and archaeological findings	Presence of archaeological findings in the soil	at and near the Construction site	Continuous supervision of earthworks	Archaeological Supervision by the competent IPCM is required during earthworks on all sections not encompassed in the protective archaeological excavation plan and program	For the sake of preservation of cultural heritage	Contractor Supervision (Monitoring) Engaged archaeological Supervision
Dust	air pollution (solid particles)	at and near job site	inspection and visual observation	unannounced inspections during material delivery and construction	health and safety requirements and enable as little disruption to traffic as it is possible	Supervision Contractor

Phase	What is the *parameter to be monitored?*	Where *the parameter should be monitored?*	How *the parameter should be monitored?/ type of monitoring equipment*	When *the parameter should be monitored? (frequency of measurement or continuous)*	*Why the parameter should be monitored? (optional)*	Institutional responsibility
						Operate
Workers safety	protective equipment; organization of bypassing traffic	job site	inspection	Unannounced inspections during work. It is recommended to use EBRD template for this purpose (next table)		Supervision Contractor
OPERATION			**Safety during flow regulation works**			
Increased vehicle speed	condition of traffic signs; vehicle speed	Approach roads to the construction site	visual observation; speed detectors	unannounced	enable safe traffic flow	Traffic Police
Erosion, rockfall, hazardous conditions	section included in project	condition of hazard signs	visual observation	during maintenance activities		Contractor

Phase	Monitoring parameter	Location	How / equipment	When / frequency	Responsibility
Supply of material	Possession of environmental permits for plants of quarries and concrete bases from which material is supplied	Legal entities that own the plants	Insight into the documentation	During material supply	Supervision body
Transport of material	If trucks are covered during powdered material transport	At the construction site and transport roads	Visual supervision	During material transport	Supervision body

Phase	Monitoring parameter	Location	How / equipment	When / frequency	Responsibility
Rehabilitation/ Reconstruction/ Repair	Degradation and soil pollution	At the construction site and directly around the construction site	Visual supervision	Weekly	Supervision body
Rehabilitation/ Reconstruction/ Repair	Does the construction site meet the criteria from the guidelines for good construction practice	At the construction site	Visual supervision. Insight into the documentation.	During the works execution	Supervision body
Rehabilitation/ Reconstruction/ Repair	Occurrence of noise and air pollution	AI the works execution location	Standard air quality and noise level measurement equipment.	Upon received citizens' complaints	Contractor - Company that has licence to perform environment monitoring works
Rehabilitation/ Reconstruction/ Repair	Destruction of crops, woods, meadows etc.	At the works execution location and in the vicinity	Visually	Upon received citizens' complaints	Supervision body
Rehabilitation/ Reconstruction/ Repair	Working hours control.	At the works execution location	Visually and comparison with the construction site organisation plan.	Upon received citizens' complaints	Supervision body
Rehabilitation/ Reconstruction/ Repair	Waste management during the works execution	At the cons1ruction site	Visually and by comparison with the waste management report.	Permanently	Supervision body
Rehabilitation/ Reconstruction/ Repair	Number of registered accidents Existence of hygienic Conditions for workers, Protective equipment application	At the construction site	Visually and insight into the register	Permanently during the works execution	Contractor Supervision body
Rehabilitation/ Reconstruction/ Repair	Impact on population due to the limitation of business activity and right to use land	Local community	Insight into the register	Upon received citizens' complaints	Project applicant

Phase	Monitoring parameter	Location	How / equipment	When / frequency	Responsibility
Rehabilitation/ Reconstruction/ Repair	Quality of executed works Quality of material that is installed	At the construction site	Visual monitoring and through register	Permanently during the works execution and construction site removal	Supervision body
Construction site closure	Waste remnants and soil degradation	At the project location	Visually	After the works completion	Contractor Supervision body
Pollution of water and soil because of improper disposal of excavated materials and construction wastes	Existence of zones/sites for preliminary accumulation of wastes	At and near work site	Inspection	During construction works	Contractor, Supervisor Engineer
Loss of top soil due to temporary access roads and work areas, Landscape degradation	Clear delineation of access roads and work sites to prevent their expansion	At access roads and work sites	Inspection, Observation	During construction works	Contractor, Supervisor Engineer
	Cleaning of access roads and work sites after construction works completion	At access roads and work sites	Inspection, Observation	After construction works	Contractor, Supervisor Engineer
	Restoration of landscape to quasi-original condition after completion of works and after use of quarries	At work site and quarries	Unannounced Inspection	After works completion.	PIT Environmental Specialist
Temporary air pollution (dust) related to the transportation of construction materials and truck traffic	Sprinkling of water to suppress the dust	At access roads and work sites	Inspection, Observation	During construction works	Contractor, Supervisor Engineer
Noise and vibration disturbances	Termination of construction works at the established time (e.g. work on daylight hours)	At access roads and work sites	Inspection, Observation	During construction works	Contractor, Supervisor Engineer

Phase	Monitoring parameter	Location	How / equipment	When / frequency	Responsibility
	Measure noise levels (Db)	At and near the work site	Inspection	During construction works	Contractor, Supervisor Engineer
Staff safety	Use of protective equipment, organization of by-passing traffic	At work site	Inspection	During construction works	Contractor, Supervisor Engineer
Degradation of the canal	O & M	At work site	Regular supervision inspection	During canal operation	PWMCs:"Srbijavode", "Vode Vojvodine", "Beogradvode"

6. ENVIRONMENTAL MANAGEMENT RESPONSIBILITIES

For each potential impact the EMP identifies:

- the proposed mitigation measure(s); and
- the parties or agencies charged with implementing those measures, separated into:

- Executing agencies responsible for executing the measure. For this specific assignment the executing agencies (e.g. contracted design institutes) shall ensure that all necessary agreements and permits (e.g. EIA conclusion, permits for water use and discharge and for the disposal of excavated materials, wastes, and demolition debris) are obtained from relevant state and local authorities before the construction works are tendered out. Construction contractors shall take the responsibility for physical implementation of mitigation measures provided under the EMP during the construction phases according to the Bank's policies and Serbia environmental legislation.
- Supervising agencies responsible for supervising the executing agencies to ensure that they execute the mitigation measures as planned. The Directorate of Water and Serbia Floods Emergency Recovery Project Implementation Team (PIT) will be responsible for supervising the timely, proper and reliable implementation of works and measures in the consequence provided by the EMP. PIT will also ensure that all necessary agreements and permits are obtained by appropriate contractors from relevant state and local authorities before the construction works are tendered out. The World Bank during supervision missions may request randomly to check if such permits are issued and are valid (e.g., not expired) as well as if the EMP mitigation and monitoring aspects are implemented on the ground during the construction phases according to the Bank's policies and Serbia environmental legislation.
- Various Ministries give different permits. Ministry of Finance together with Ministry of Construction, Traffic and Infrastructure and Ministry of Environmental Protection control License process for works. MAFWM with Directorate of Water, The Public Water Resources Management Companies Srbijavode, Beogradvode and Vode Vojvodine providing preparation of water resources management technical documentation, different kind of license requested for works and supervise construction, organization and implementation of water pollution protection measures. Hydro meteorological Institute takes water samples and monitors the quality of water.

6.1. Environmentally sound clauses for civil works contracts

Most construction phase impacts will be possible to mitigate by including appropriate clauses into the civil works contracts. Revisions of clauses should cover, but not limited to, the following issues:

- Compliance with general national environmental guidelines;
- Compliance with relevant World Bank Operational Policies;
- Protection of Historic-cultural monuments;
- Adequate disposal of construction and excavation wastes;
- Proper location of construction camps;
- Restoration of the quasi-original conditions of landscape in construction sites after works completion;
- Occupational safety and health (Consultants and contractors working on the program will be required to adhere to all applicable laws and regulations controlling workplace health and safety), etc.

Construction works contracts should include this EMP with its Environmental Mitigation Plan and Environmental Monitoring Plan presented within the chapter 4 and chapter 5 of this EMP document.

7. IMPLEMENTATION ARRANGEMENTS

The Office for Reconstruction will be responsible for overseeing the overall project implementation. Project management functions and day to day operations will be the responsibility of the Directorate for Agrarian Payments (DAP) (with the support of Treasury), and the Project Implementation Unit (PIU) established under DWM.

8. MONITORING AND REPORTING ARRANGEMENTS

8.1. FERP Project Monitoring

The FERP project will be monitored by PIU under the DWM. Information and data collected at each of the implementation agencies will be fed into overall monitoring and evaluation (M&E). The Office for Reconstruction will oversee M&E activities regularly through the project reports, evaluate the results achieved and guide the implementing agencies on corrective management actions.
The Construction contractor is obliged to perform all monitoring activities (sampling, measurement, etc.) prescribed within the Monitoring Plan of EMP document produced for project on which the Contractor is engaged.

Supervision Consultant is responsible to monitor all construction activities, including environmental protection during project rehabilitation. PSC will be authorized to perform additional sampling in case he finds this needed.

8.2. Environmental Monitoring Plans

Monitoring plan for FERP projects should be in respect of the bidding documents. The main components of the monitoring plans include:

- Environmental issue to be monitored and the means of verification
- Specific areas, locations and parameters to be monitored;
- Applicable standards and criteria;
- Monitoring of the procurement of materials (checks that valid permits are in place)
- Duration
- Institutional responsibilities for monitoring and supervision

8.3. Reporting Arrangements

8.3.1. Contractor to PIU

The Contractor will prepare his compliance reports in respect to EMP and his SSIP as a Quarterly Progress Reports and submit them to PIU, in both Serbian and English language, in hard copy and electronic versions.

Construction Contractor will provide quarterly reports to PIU which document the environmental mitigation and protection measures, together with prescribed monitoring activities carried out during that quarter’s reporting period. Construction Contractor will take care of the environment quality according to the mitigation and monitoring plan which are part of EMP.

The same applies to the Environmental Monitoring and Supervision Contractors for their part of mitigation and environmental monitoring activities.
If any kind of accident or endangerment of environment happens, reporting will be immediate. PIU and the Contractor have joint responsibility for reporting and investigating incidents. The Contractor is obliged to inform the project manager and local authorities about accident immediately after it happened.

8.3.2. Project Supervision Consultant to PIU

The findings of the regular monitoring activities, including activities specified in the Generic Monitoring Plan, carried by the Contractor will be included in the quarterly PSC progress reports.

8.3.3. PIU to MAFWM, WB, Semi-Annual Environmental & Social Report

Each Contractor is obliged to produce and deliver to PIU an Semi-Annual Environmental and Social Report covering all project activities during 6 month period PIU shall provide Semi-Annual reports to MAFWM and WB regarding the status of implementation of mitigation measures by the Contractors, additional mitigation measures that may need to be implemented, incidents of non-compliance with applicable environmental permits, complaints received from local residents, NGOs, etc. and how these were addressed. In case of fatalities or major incidents on site the PIU will immediately report to WB.
Monitoring and compliance in accordance with ESMF and site specific EMPs, including monitoring of implementation of site-specific measures on each sub-project/section during project implementation will be undertaken by PIU and its implementation unit, and reported in writing to the Bank on semi-annual basis. An environmental specialist will be appointed to the Project by PIU to ensure quality in the implementation of EMPs.

9. PUBLIC CONSULTATIONS AND PUBLIC DISCLOSURE OF THE EMP

In accordance with WB OP4.01 a draft version of EMP will be publicly disclosed in the Ministry of Agriculture and Environmental Protection, the Directorate of Water building and in the Ruma municipality during Jun 2015, on period of two weeks. The public consultation meeting will be held in the Municipality of Ruma / Hrtkovci.

10. REFERENCES

1. "Studija i idejno rešenje regulacije reke Save od km 50 do km 207", Institut za vodoprivredu "Jaroslav Černi", 1985. godina
2. "Idejno rešenje zaštite ruševne leve obale reke Save u zoni Hrtkovaca", VP " Regulacije" Sremska Mitrovica, 2004 . godina
3 "Elaborat snimanja reke Save od rkm 120+447 do rkm 123+350", VP " Regulacije", Sremska Mitrovica , 2014 . godine
4. Plan detaljne regulacije priobalnog područja leve obale reke Save od rkm 120+ 360 K. O. Hrtkovci, Opština Ruma do rkm 123+300 K. O. Jarak, Grad Sremska Mitrovica, 2016. god.
5. Glavna sveska, AD "Hidrozavod DTD", Novi Sad, jun 2016. godine
6. Idejni projekat (sveska 1/1) br. E-98/15, AD "Hidrozavod DTD", Novi Sad, 2016. godina
7. Idejni projekat (sveska 1/2) br. E-98/15, AD "Hidrozavod DTD", Novi sad, 2016. godina
8. Glavni projekat sanacije leve obale reke Save kod Hrtkovaca od rkm 120+347 do rkm 121+277 (lokalitet Gomolava) , "Hidrozavod" Novi Sad, 2012 godina
9 Environmental Assessment Sourcebook No 25, Environmental Management Plans, The World Bank Environment Department, January 1999
10 Project Appraisal Document, PAD1129, Serbia - Floods Emergency Recovery Project, September 2014
11 Integrated Safeguards Data Sheet, ISDSA1019, Integrated Safeguards Data Sheet (Appraisal Stage) - Floods Emergency Recovery Project - P152018, September 2014
12 Project Information Document, PIDA12087, Project Information Document (Appraisal Stage) - Floods Emergency Recovery Project - P152018, September 2014
13 Environmental and Social Management Framework, ESMF, Floods Emergency Recovery Project - P152018, February 2015
14 Resettlement Policy Framework, RPF, Floods Emergency Recovery Project - P152018, February 2015

Annex 1

LEGISLATION

MAIN SERBIAN LEGISLATION:

ANNEX 1: RELEVANT NATIONAL LEGISLATION AS OF MARCH 2018

The main laws and regulations currently in force in Republic of Serbia which are relevant to the environmental protection during planning, design, construction and operating of this Project are listed below:

1. Law on planning and construction ("Official Gazette of RS" No. 72/2009, 81/2009, 64/2010, 24/2011, 121/2012, 42/2013, 50/2013, 98/2013, 132/2014, 145/2014)
2. Law on nature protection ("Official Gazette of RS", 36/09, 88/10, 91/10, 14/16)
3. Law on environmental protection ("Official Gazette of RS" No. 135/04, 36/09, 72/09, 43/11, 14/16)
4. Law on EIA ("Official Gazette of RS" No. 135/2004, 36/09)
5. Law on Strategic EIA ("Official Gazette of RS" No. 135/04, 88/10)
6. Law on waste management ("Official Gazette of RS", 36/09, 88/10, 14/16)
7. Law on noise protection ("Official Gazette of RS", 36/09, 88/10)
8. Law on water ("Official Gazette of RS", 30/10, 93/12, 101/16)
9. Law on forest ("Official Gazette of RS", 30/10, 93/12, 89/15)
10. Law on air protection ("Official Gazette of RS", 36/09, 10/13)
11. Law on Safety and Health at Work ("Official Gazette of RS", 101/05, 91/15, 113/17)
12. Agricultural Land Law, ("Official Gazette of RS" No. 62/06, 65/08, 41/09, 112/2015, 80/2017)

Regulations established on the basis of the Law on EIA include the following:

12. Decree on establishing the List of Projects for which the Impact Assessment is mandatory and the List of projects for which the EIA can be requested ("Official Gazette of RS" No. 114/08)
13. Rulebook on the contents of requests for the necessity of Impact Assessment and on the contents of requests for specification of scope and contents of the EIA Study ("Official Gazette of RS" No. 69/05)
14. Rulebook on the contents of the EIA Study ("Official Gazette of RS" No. 69/05)
15. Rulebook on the procedure of public inspection, presentation and public consultation about the EIA Study ("Official Gazette of RS" No. 69/05)
16. Rulebook on the work of the Technical Committee for the EIA Study ("Official Gazette of RS" No. 69/05)
17. Regulations on permitted noise level in the environment ("Official Gazette of RS" No. 72/10)
18. Decree on establishing class of water bodies ("Official Gazette of SRS" No. 5/68)
19. Regulations on dangers pollutants in waters ("Official Gazette of SRS" No. 31/82)

Other relevant Serbian legislation

20. Law on confirmation of convention on information disclosure, public involvement in process of decision making and legal protection in the environmental area (“Official Gazette of RS”, 38/09)

22. European Environment and Health Committee. Serbia. Copenhagen, WHO Regional Office for Europe, 2006 (http://www.euro.who.int/eehc/implementation/20061010_9 accessed 29 December 2009).

24. National Assembly. Law on Protection against Environmental Noise. Official Gazette of the Republic of Serbia, No. 36/09, 88/10.

25. National Assembly. Law on Waste Management. Official Gazette of the Republic of Serbia, 2009, No. 36/09.

26. National Assembly. Constitution of the Republic of Serbia. Official Gazette of the Republic of Serbia, 2006, No. 98/06.

27. National Assembly. Law on Environmental Protection. Official Gazette of the Republic of Serbia, 2004, No. 135/04.

28. National Assembly. Law on Air Protection. Official Gazette of the Republic of Serbia, 2009, No. 36/09.

29. National Assembly. Law on Management of Chemicals. Official Gazette of the Republic of Serbia, 2009, No. 36/09.

30. National Assembly. Law on Biocidal Products. Official Gazette of the Republic of Serbia, 2009, No. 36/09.

31. National Assembly. The Law on Environmental Protection. Official Gazette of the Republic of Serbia, 2009, No. 36/09.

32. National Assembly. Law on Occupational Safety and Health. Official Gazette of the Republic of Serbia, 2005, No. 101/05

33. National Assembly. Law on Environmental Impact Assessment. Official Gazette of the Republic of Serbia, 2004, No. 135/04 (http://www.basel.int/legalmatters/natleg/serbia-02e.pdf, accessed 11 January 2010).

39. Federal Assembly. Regulation on permitted level of noise in the environment. Official Gazette of the Republic of Serbia, 2010, No. 72/10.

40. National Assembly. Law on Integrated Pollution Prevention and Control. Official Gazette of the Republic of Serbia, No. 135/04 (http://www.basel.int/legalmatters/natleg/serbia-04e.pdf, accessed 11 January 2010).

Annex 2

PRECONDITIONS OBTAINED FROM RELEVANT INSTITUTIONS

ANNEX 2: PRECONDITIONS OBTAINED FROM RELEVANT INSTITUTIONS

A) Water Directorate

Република Србија
Министарство грађевинарства,
саобраћаја и инфраструктуре
Дирекција за водне путеве
Београд, Француска 9

Број: 11/24-1
Датум: 11 MAR 2016

Јавно водопривредно предузеће
»ВОДЕ ВОЈВОДИНЕ«
НОВИ САД
Примљено: 22 MAR 2016
Орг. јед. | Број 1 6/69 | Прилог | Вредност

ЈВП „ВОДЕ ВОЈВОДИНЕ“

Масарикова 17
21000 Нови Сад

Веза: Захтев бр. I-6/13 од 19.02.2016.год., заведен под бројем 11/24 дана 23.02.2016.год.

Предмет: Захтев за издавање података о пловном путу и евиденционим профилима на реци Сави у зони деонице од ркм 120+347 до ркм 121+277

Поштовани,

Поводом вашег дописа, број I-6/13 од 19.02.2016. године, достављамо вам релевантне податке са којима располаже Дирекција за водне путеве, које можете користити искључиво за потребе израде Идејног решења обалоутврде на левој обали реке Саве, у зони Гомолаве (од ~ km 121+300 до ~ km 120+350).

Пловни пут на разматраној деоници реке Саве има статус међународног пловног пута (класа IV), који је дефинисан прописаним габаритима. Захтеване вредности параметара габарита пловног пута за предметну деоницу реке Саве су:

- Дубина пловног пута у односу на ниски пловидбени ниво (ЕН), при редукованом газу (94% трајање) 2,3m
- Дубина пловног пута у односу на ниски пловидбени ниво (ЕН), за пловидбу са пуним газом (60% трајање) - са брзинским утонућем и тримом + апсолутна резерва 3,3m
- Ширина пловног пута при ЕН, у правцу 55m
- Ширина пловног пута при ЕН, у кривини 75m
- Минимални радијус кривине пловног пута 360m

Ниски пловидбени ниво (ЕН) у предметној зони, на km 121+000, износи 72,25 mnm.

Тел: 011 3029 801
Факс: 011 3029 808

www.plovput.gov.rs
office@plovput.gov.rs

Положај пловног пута у предметној зони реке Саве, као и правци расположивих контролних и евиденционих профила су достављени пројектанту у електронској форми (DWG формат), дана 8. марта 2016. год., на адресу: zoran.gregorovic@hidrozavoddtd.rs

Обавештавамо вас да, уколико желите да вам се доставе хидрографски снимци на евиденционим профилима којима располаже Дирекција за водне путеве, потребно је да нам се обратите новим захтевом где ћете прецизирати за које тачно профиле желите да вам се подаци доставе, за који временски период и у ком облику.

Напомињемо, према важећем Правилнику о одређивању висина такси за пружање стручних услуга из надлежности Дирекције за водне путеве („Службени гласник РС", бр. 141/2014), за издавање раније снимљених попречних профила из базе Дирекције наплаћује се такса, и то:

- за издавање једног попречног профила из текуће године - 3.680,00 динара;
- за издавање једног профила из претходне године - 2.990,00 динара;
- за издавање једног профила из године пре претходне године - 2.300,00 динара;
- за издавање једног профила из свих осталих година - 1.520,00 динара;

За сва додатна питања, везано за издавање попречних профила, можете се обратити Срђану Ђаловићу, тел:011/3029-880, e-mail: sdjalovic@plovput.rs

С поштовањем,

В.Д. ДИРЕКТОР
Љубиша Михајловић

Доставити:
- Именованом
- Архиви
- Групи 2/2

B) Preconditions obtained from IPCM

ЗАВОД ЗА ЗАШТИТУ
СПОМЕНИКА КУЛТУРЕ
СРЕМСКА МИТРОВИЦА
Број: 19-07/15-6
Датум: 25.06.2016. године

Завод за заштиту споменика културе Сремска Митровица, на основу чл. 99. став 2. тачка 1., 27., 100. став 1. (3.), 104., 109 и 110. Закона о културним добрима ("Службени гласник РС" бр. 71/94, 52/2011 и 99/2011) и члана 131. Закона о општем управном поступку, на захтев Јавног водопривредног предузећа "Воде Војводине Нови Сад" из Новог Сада, Булевар Михајла Пупина број 25, доноси

Р Е Ш Е Њ Е

I Мере техничке заштите на археолошком налазишту од изузетног значаја Гомолава у Хртковцима и на добрима која уживају претходну заштиту за изградњу обалоутврде у насељеном месту Хртковци, лева обала реке Саве од ркм 120+347 до ркм 121+277, на катастарској парцели број 4507/2 К.О. Хртковци, могу се предузети према следећим условима:

-Инвеститор је обавезан да обезбеди претходно заштитно археолошко ископавање на траси обалоутврде која обухвата целокупну дужину археолошког налазишта Гомолава и локалитета–античка некропола у К.О. Хртковци;

-Инвеститор је обавезан да обави све припремне радове на рашчишћавању терена пре обављања археолошких ископавања;

-Извођачи археолошких ископавања обавиће радове на основу плана и програма који израђује Завод за заштиту споменика културе у Сремској Митровици у сарадњи са Републичким заводом за заштиту споменика културе – Београд на површини од 1.985 m^2;

-У случају да се у току заштитних археолошких ископавања открију непокретности за које је потребан посебан конзерваторски и истраживачки поступак, извођач археолошких истраживања је обавезан да посебним извештајем о томе обавести Инвеститора да би благовремено омогућио обављање непредвиђених послова анексом основног уговора;

-Инвеститор је обавезан да обезбеди археолошки надзор над извођењем земљаних радова приликом изградње обалоутврде на свим осталим деоницама које нису у обухвату заштитних археолошких ископавања;

-Ако се у току извођења земљаних радова на деоницама које нису у обухвату заштитних археолошких ископавања наиђе на археолошка налазишта или археолошке предмете, извођач радова је дужан да прекине радове и да предузме мере да се налаз не оштети и не уништи и да се сачува у месту и положају у којем је откривен;

-Инвеститор је у обавези да обезбеди средства за праћење, истраживање, заштиту и чување пронађених остатака који уживају

претходну заштиту, а према програму и предрачуну за археолошка истраживања;

-Археолошки надзор се уговара независно од археолошких истраживања;

-Инвеститор је дужан да благовремено пријави извођење земљаних радова и достави динамику извођења земљаних радова;

-Инвеститор је дужан да обавести Завод о свим изменама на траси обалоутврде;

-Сви накнадни послови у смислу рекогносцирања, археолошког надзора и заштитних археолошких ископавања регулисаће се посебним уговором са Инвеститором;

-Инвеститор је дужан да обезбеди средства за чување, публиковање и излагање добара која ће бити откривена, археолошки ископана и истражена, документована и конзервирана ради трајне научне и стручне презентације културног наслеђа у оквиру инвестиционог посла.

II Радови морају бити изведени у свему у складу са издатим условима из тачке I овог решења.

III Ово решење не ослобађа подносиоца захтева обавезе прибављања и других услова, сагласности и дозвола предвиђених прописима о изградњи објеката и планирању и уређењу простора и насеља.

IV Ово решење важи две године од дана издавања.

V По изради пројекта и документације у складу са овим условима, подносилац захтева је дужан да на исте прибави сагласност Завода за заштиту споменика културе Сремска Митровица.

VI Жалба не одлаже извршење овог решења.

О б р а з л о ж е њ е

Јавно водопривредно предузеће "Воде Војводине Нови Сад" из Новог Сада, Булевар Михајла Пупина број 25, поднело је захтев овом Заводу за добијање услова на археолошком налазишту од изузетног значаја Гомолава у Хртковцима и на добрима која уживају претходну заштиту за изградњу обалоутврде у насељеном месту Хртковци, лева обала реке Саве од ркм 120+347 до ркм 121+277, на катастарској парцели број 4507/2 К.О. Хртковци.

У току 2013. године Завод за заштиту споменика културе из Сремске Митровице у сарадњи са стручном службом Републичког завода за заштиту споменика културе – Београд утврдио је услове чувања одржавања и коришћења и мере заштите за израду Плана детаље регулације приобалног подручја леве обале реке Саве од км 121+277 К.О. Хртковци Општина Рума до км 123+722 К.О. Јарак Град Сремска Митровица са прегледом археолошких налазишта и локалитета (предмет бр. 285-07/2013 од 10.09.2013. године).

Археолошко налазиште Гомолава Решењем Завода заштиту и научно проучавање споменика културе из Београда бр. 1641 од

30.12.1950. утврђено за археолошко налазиште, а одлуком Владе РС категорисано за археолошко налазиште од изузетног значаја Службени гласник РС бр. 16/90 од 03.12.1990. године) угрожено је сталним променама висине водотока Саве. Изградњом обалоутврде угрожен је део археолошког налазишта.

Археолошки локалитет "Гомолава некропола" налази се североисточно од археолошког налазишта Гомолава. Протеже се од краја улице Вука Караџића уз обалу Саве у дужини од око 300 m. Археолошки локалитет – античка некропола је локалитет под претходном заштитом и угрожен изградњом обалоутврде.

Са изложеног решено је као у диспозитиву.

ПРАВНА ПОУКА: Против овог решења дозвољена је жалба Републичком заводу за заштиту споменика културе Београд у року од 15 дана од дана његовог достављања. Жалба се подноси преко доносиоца овог решења, а на основу члана 16. Закона о културним добрима, ослобођена је плаћања републичке административне таксе.

ДИРЕКТОР

Љубиша Шулаја

Доставити:
подносиоцу;
документацији;
архиви.

C) Consent of IPCM on preliminary design

ЗАВОД ЗА ЗАШТИТУ
СПОМЕНИКА КУЛТУРЕ
Број: 19-07/15-7
Датум: 24.07.2017. године
СРЕМСКА МИТРОВИЦА

Завод за заштиту споменика културе Сремска Митровица, на основу чл. 101. став 1. и 104. Закона о културним добрима ("Службени гласник РС" бр. 71/94, 52/2011 и 99/2011) и члана 104 став 1. тачка 1. Закона о општем управном поступку ("Службени гласник РС" број 18/2016), на захтев Јавног водопривредног предузећа "Воде Војводине Нови Сад" из Новог Сада, Булевар Михајла Пупина број 25, доноси

Р Е Ш Е Њ Е

I ДАЈЕ СЕ сагласност на Идејни пројекат (ИДП) санације обале у зони Гомолаве, лева обала реке Саве од ркм 120+347 до ркм 121+277 који је израдио "ХИДРОЗАВОД ДТД" а.д. из Новог Сада, улица Петра Драпшина број 56, пројекат број Е-98/15 од јуна 2016. године.

II Ово решење не ослобађа подносиоца захтева обавезе прибављања и других услова, сагласности и дозвола предвиђених прописима о изградњи објеката и о планирању и уређењу простора и насеља.

III Ово решење важи две године од дана издавања.

IV Жалба не задржава извршење овог решења.

о б р а з л о ж е њ е

Пројекат и документација које је урадио "ХИДРОЗАВОД ДТД" а.д. из Новог Сада, улица Петра Драпшина број 56, пројекат број Е-98/15 од јуна 2016. године, поднети на сагласност код овог Завода усклађени су са условима дефинисаним Решењем Завода за заштиту споменика културе Сремска Митровица број 19-07/15-6 од 24.06.2016. године.

Са изложеног решено је као у диспозитиву.

ПРАВНА ПОУКА: Против овог решења дозвољена је жалба Републичком заводу за заштиту споменика културе-Београд у року од 15 дана од дана његовог достављања. Жалба се подноси преко доносиоца овог решења, а на основу члана 16. Закона о културним добрима, ослобођена је плаћања републичке административне таксе.

Доставити:
Подносиоцу;
Документацији;
Архиви.

в. д. Директора
Љубиша Шулаја

Annex 3

CONSTRUCTION PERMIT

Annex 3: Construction Permit

РЕПУБЛИКА СРБИЈА
Аутономна Покрајина Војводина
ОПШТИНА РУМА
ОПШТИНСКА УПРАВА
ОДЕЉЕЊЕ ЗА
УРБАНИЗАМ И ГРАЂЕЊЕ
ОДСЕК ЗА СПРОВОЂЕЊЕ
ОБЈЕДИЊЕНЕ ПРОЦЕДУРЕ
ROP-RUM-21111-ISAWHA-2/2017
VIII Број: 351-1750/2017
Дана 31. 07. 2017. године
22400 Р У М А

На основу члана 134. став 2. и члана 145. Закона о планирању и изградњи ("Сл. Гласник РС", број 72/09, 81/2009 - испр., 64/2010 - одлука УС, 24/11, 121/2012, 42/2013 - одлука УС, 50/2013 - одлука УС, 132/2014 и 145/2014), члана 29. Правилника о поступку спровођења обједињене процедуре електронским путем ("Сл. гласник РС", бр. 113/2015 и 96/2016), члана 136. Закона о општем управном поступку ("Сл. Гласник РС", бр. 18/2016), члана 3. и 15. Одлуке о општинској управи Општине Рума ("Сл. лист општина Срема", бр. 24/15 и 37/16), Одсек за спровођење обједињене процедуре, Одељења за урбанизам и грађење Општинске управе Општине Рума, решавајући по захтеву инвеститора, ЈВП "Воде Војводине" ПИБ: 102094162 из Новог Сада, Булевар Михајла Пупина бр. 25, поднетом преко пуномоћника, Александра Николића из Новог Сада, доноси

Р Е Ш Е Њ Е
О ОДОБРЕЊУ ЗА ИЗВОЂЕЊЕ РАДОВА

ОДОБРАВА СЕ ИНВЕСТИТОРУ, ЈВП "Воде Војводине" ПИБ: 102094162 из Новог Сада, Булевар Михајла Пупина бр. 25, извођење радова на санацији обале у зони Гомолаве - лева обала реке Саве од ркм 120+347 до ркм 121+277 у Хртковцима, на катастарским парцелама број 2227, 3617/2, 4386, 4387, 4507/1, 4507/2 и 4508 све к.о. Хртковци.

Предрачунска вредност радова износи 533.871.288,00 динара.

Саставни део Одобрења за извођење радова:

- Урбанистичко мишљење бр. 314/2017 од 07. 07. 2017. године, издато од ЈУП "План" из Руме.

- Главна свеска од јуна 2016. године, израђена од АД "Хидрозавод ДТД" из Новог Сада, главни пројектант: Зоран В. Грегоровић, дипл. инж. грађ. са лиценцом број 314 G774 08;

- Идејни пројекат (свеска 1/1) бр. Е-98/15, израђен од АД "Хидрозавод ДТД" из Новог Сада, одговорни пројектант: Александар М. Бијелић, дипл. инж. грађ. са лиценцом број 313 J028 10;

- Идејни пројекат (свеска 1/2) бр. Е-98/15, израђен од АД "Хидрозавод ДТД" из Новог Сада, одговорни пројектант: Александар М. Бијелић, дипл. инж. грађ. са лиценцом број 313 J028 10;

Инвеститор је дужан да овом Органу пријави радове најкасније осам дана пре почетка извођења радова.

Пријава садржи датум почетка и рок завршетка грађења, односно извођења радова.

Инвеститор је дужан да трајно чува један оригинални или на прописан начин комплетиран примерак техничке документације на основу које је издата грађевинска дозвола са свим изменама и допунама извршеним у току грађења и свим детаљима за извођење радова.

Током спровођења обједињене процедуре надлежни орган се не упушта у оцену техничке документације. У случају штете настале као последица примене техничке документације, на основу које је издата грађевинска дозвола или решење из члана 145., за коју се накнадно утврди да није у складу са прописима и правилима струке, за штету солидарно одговарају пројектант који је израдио и потписао техничку документацију, вршилац техничке контроле и инвеститор.

ПРАВНОСНАЖНО РЕШЕЊЕ ОСНОВ ЈЕ ЗА УПИС У ОДГОВАРАЈУЋУ ЈАВНУ КЊИГУ О ЕВИДЕНЦИЈИ НЕПОКРЕТНОСТИ И ПРАВИМА НА ЊИМА.

О б р а з л о ж е њ е

Дана 27. 07. 2017. године, инвеститор, ЈВП "Воде Војводине" ПИБ: 102094162 из Новог Сада, Булевар Михајла Пупина бр. 25, обратио се Одељењу преко пуномоћника, Александра Николића из Новог Сада са усаглашеним захтевом за издавање Решења о одобрењу за извођење радова на санацији обале у зони Гомолаве - лева обала реке Саве од ркм 120+347 до ркм 121+277 у Хртковцима, на катастарским парцелама број 2227, 3617/2, 4386, 4387, 4507/1, 4507/2 и 4508 све к.о. Хртковци, као што је описано у диспозитиву овог Решења.

Уз захтев за издавање одобрења за извођење радова инвеститор је поднео следећу документацију:

1. Пројектна документација:

- Главна свеска од јуна 2016. године, израђена од АД "Хидрозавод ДТД" из Новог Сада, главни пројектант: Зоран В. Грегоровић, дипл. инж. грађ. са лиценцом број 314 G774 08;
- Идејни пројекат (свеска 1/1) бр. Е-98/15, израђен од АД "Хидрозавод ДТД" из Новог Сада, одговорни пројектант: Александар М. Бијелић, дипл. инж. грађ. са лиценцом број 313 J028 10;
- Идејни пројекат (свеска 1/2) бр. Е-98/15, израђен од АД "Хидрозавод ДТД" из Новог Сада, одговорни пројектант: Александар М. Бијелић, дипл. инж. грађ. са лиценцом број 313 J028 10;

2. Урбанистичко мишљење бр. 314/2017 од 07. 07. 2017. године, издато од ЈУП "План" из Руме.

3. Решење о сагласности на ИДП бр. 19-07/15-7 од 24. 07. 2016. године, издато од Завода за заштиту споменика културе Сремска Митровица.

4. Уговор о закупу земљишта закључен између инвеститора и Јована Савића из Хртковаца, ов.бр. 3172-2017.

5. Овлашћење којим је инвеститор овластио Александра Николића из Новог Сада за подношење захтева у поступку обједињене процедуре.

Дана, 18. 07. 2017. године, орган је по службеној дужности прибавио од надлежне Службе за катастар непокретности Рума:

- Извод из листа непокретности број: 63 к.о. Хртковци,
- Извод из листа непокретности број: 194 к.о. Хртковци,
- Извод из листа непокретности број: 1509 к.о. Хртковци,
- Извод из листа непокретности број: 282 к.о. Хртковци.

Разматрајући захтев и приложену документацију инвеститора, утврђено је да су испуњени услови прописани чланом 145. Закона о планирању и изградњи ("Сл. Гласник РС", број 72/09, 81/2009 - испр., 64/2010 - одлука УС, 24/11, 121/2012, 42/2013 - одлука УС, 50/2013 - одлука УС, 132/2014 и 145/2014), чланом 28. и 29. Правилника о поступку спровођења обједињене процедуре електронским путем ("Сл. Гласник РС", бр. 113/2015 и 96/2016), те је одлучено као у диспозитиву овог Решења.

Републичка административна такса за решење у износу од 710,00 динара, уплаћена је уплатницом у складу са Законом о републичким административним таксама ("Сл. гласник РС", бр. 54/09, 50/11, 55/12, 93/12, 47/13, 57/14,45/15, 83/15, 112/15, 50/2016, 61/17).

Накнада за регистар ЦЕОП у износу од 2000,00 динара, уплаћена је уплатницом, а у складу са Одлуком о накнадама за послове регистрације и друге послове које пружа агенција за привредне регистре ("Сл. гласник РС", бр. 106/2015).

ПОУКА О ПРАВНОМ СРЕДСТВУ: Против овог Решења се може изјавити жалба Покрајинском секретаријату за енергетику, грађевинарство и саобраћај у Новом Саду у року од 8 дана од дана пријема Решења. Жалба се подноси писмено или усмено на записник путем овог Одељења таксирана са 460,00 динара републичке административне таксе и 50,00 динара општинске административне таксе.

ОБРАЂИВАЧ: дипл. прав. Ива Ракић

ДОСТАВИТИ:

1. **Инвеститору,**
2. **Грађевинској инспекцији,**
3. **А р х и в и**

ШЕФ ОДЕЉЕЊА
дипл. прав. Тања Дробац

ТАЊА ДРОБАЦ 21109668 5022-21109 66885022

Digitally signed by ТАЊА ДРОБАЦ 2110966885022-2110966885022 Date: 2017.07.31 12:01:13 +02'00'

Annex 4

FINAL ENVIRONMENTAL APPROVAL

Annex 4: Final Environmental Approval

Final environmental approval shall be obtained from the competent Institution in the Ruma municipality, before producing the final version of the EMP document.

Annex 5

REPORT ON PUBLIC CONSULTATIONS

ANNEX 5: REPORT ON PUBLIC DISCLOSURE AND PUBLIC CONSULTATION

This section will be incorporated after the completion of public consultations.