



Republic of Serbia
Ministry of Agriculture, Forestry
and Water Management
Nemanjina 22-26, 11000 Belgrade

SAVA AND DRINA RIVER CORRIDORS INTEGRATED DEVELOPMENT PROGRAM (SDIP)

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

for

Embankment stabilization of left Sava River dyke in
Popova Bara, Serbia

rkm 151+300 to rkm 153+060, $L = 1.760$ km



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Abbreviations

DWM	Directorate for Water Management
EHS	Environmental, Health and Safety
EIA	Environmental Impact Assessment
ESMP	Environmental and Social Management Plan
ESMF	Environmental and Social Management Framework Document
ESS	Environmental and Social Standards
ESSS	Environmental and Social Safeguard Specialist
SDIP	Sava and Drina River Corridors Integrated Development Program
GEMM	General Environmental Mitigation Measures
IFC	International Financial Corporation
MAFWM	Ministry of Agriculture, Forestry and Water Management
MCTI	Ministry of Construction, Transport and Infrastructure
MEP	Ministry of Environmental Protection
INP	Institute for Nature Protection
IPCM	Institute for Protection of Cultural Monuments
ISRBC	International Sava River Basin Commission
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
RoS	Republic of Serbia
SSIP	Site Specific Implementation Plan
WB	The World Bank Group

INTRODUCTION

A pivotal feature of the Western Balkans region is the Sava River Basin, one of Europe's largest transboundary basins. It covers over one third of the Western Balkans in area and population and connects five of the eight Western Balkan countries (Slovenia, Croatia, BiH, Serbia, and Montenegro). The Drina is the Sava's largest tributary, draining over 20,000 km² of mountainous area. The economy and jobs in the region depend heavily on these shared water resources, to transport goods, generate energy, grow food and fibers, sustain biodiversity, as well as provide for leisure and eco-tourism activities.

This document presents the Environmental and Social Management Plan (ESMP), which has been prepared to ensure that the proposed Sava and Drina River Corridors Integrated Development Program (SDIP) is implemented in accordance with the World Bank Environmental and Social Standards (ESS) and local legislation related to environmental protection and social safeguarding. The main purpose of this ESMP 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 ESMP also shows the responsibilities of different parties involved in the project implementation. Although the SDIP project has been classified as High risk according to the World Bank ESF, the proposed sub-project is classified as Substantial as the type of works envisaged by the technical documentation require extensive excavation, large quantities of material, dredging and require acquisition of private land although no physical displacement. However, mitigation measures, both environmental and social adequately respond to the identified impacts, leaving residual impacts at an almost negligible scale.

1. SAVA AND DRINA RIVER CORRIDORS INTEGRATED DEVELOPMENT PROGRAM - DESCRIPTION

1.1. Background

The Sava and Drina have a proclivity for both dry spells and devastating floods—most recently occurring in 2010 and 2014. The 2014 Sava flood—the largest flood in a century—caused 79 casualties and a damage of €1.5 billion in Serbia (4.7% of GDP), €2.0 billion in Bosnia and Herzegovina (15% of GDP) and €300 million in Croatia (0.5% of GDP). In 2010 the Drina was flooded extensively—partly due to spilling hydropower reservoirs—and saw its highest levels in 100 years. Flash floods destroyed houses, bridges and sections of roads, while rising water levels resulted in flooding of both urban and rural areas.

The Sava Drina River Corridors Integrated Development Project (Phase 1 of the Program) main focus is to improve flood protection, and transboundary water resources management in selected catchment areas of the Sava and Drina river corridors, with the higher level objective being to enhance regional economic integration and growth through improved flood protection, waterway navigability and freight transport connectivity, and transboundary water management along the Sava and Drina Corridor.

This project will implement sub-projects with high implementation readiness and relevance to the program objectives, with detail designs and tender documents likely ready by Effectiveness in Montenegro, BiH (Brcko District), and Serbia, while simultaneously preparing subprojects that will be implemented during the second phase of the Regional Program. The project consists of three components as described below:

- Component 1: Integrated Development of the Sava River Corridor
- Component 2: Sustainable Management of Environmental Assets in Drina Corridor
- Component 3: Enabling regional economic integration, institutional strengthening and program management

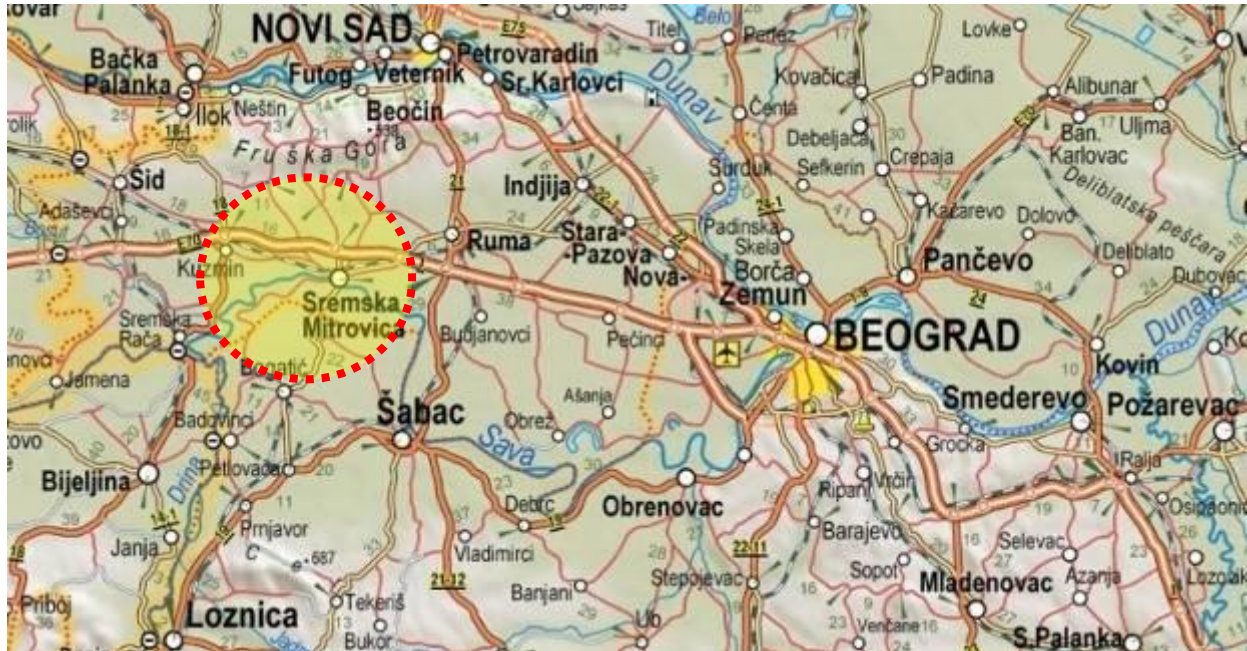
1.2. Martinci Project Description

Embankment stabilization Project in Martinci area includes stabilization of the left bank of Sava River within the Popova Bara stretch, near the village of Martinci, Sremska Mitrovica municipality, in total length of 1.760 km, starting from rkm 151+300 to the ending chainage of rkm 153+060.

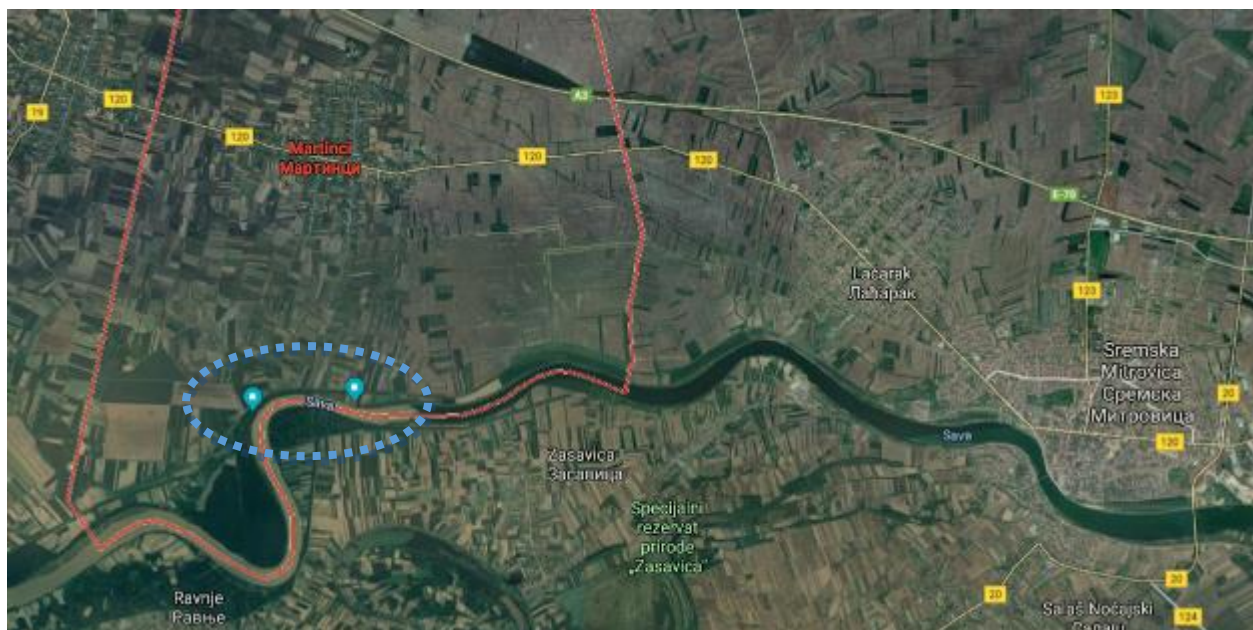
Martinci is a village located in Sremska Mitrovica municipality, inside Srem County in the Republic of Serbia. It is located 14 km west from the city of Sremska Mitrovica. According to the 2011 census Martinci have a population of 3070. The urbanised section of the village is located approximately 2.5 km north from 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 Martinci village

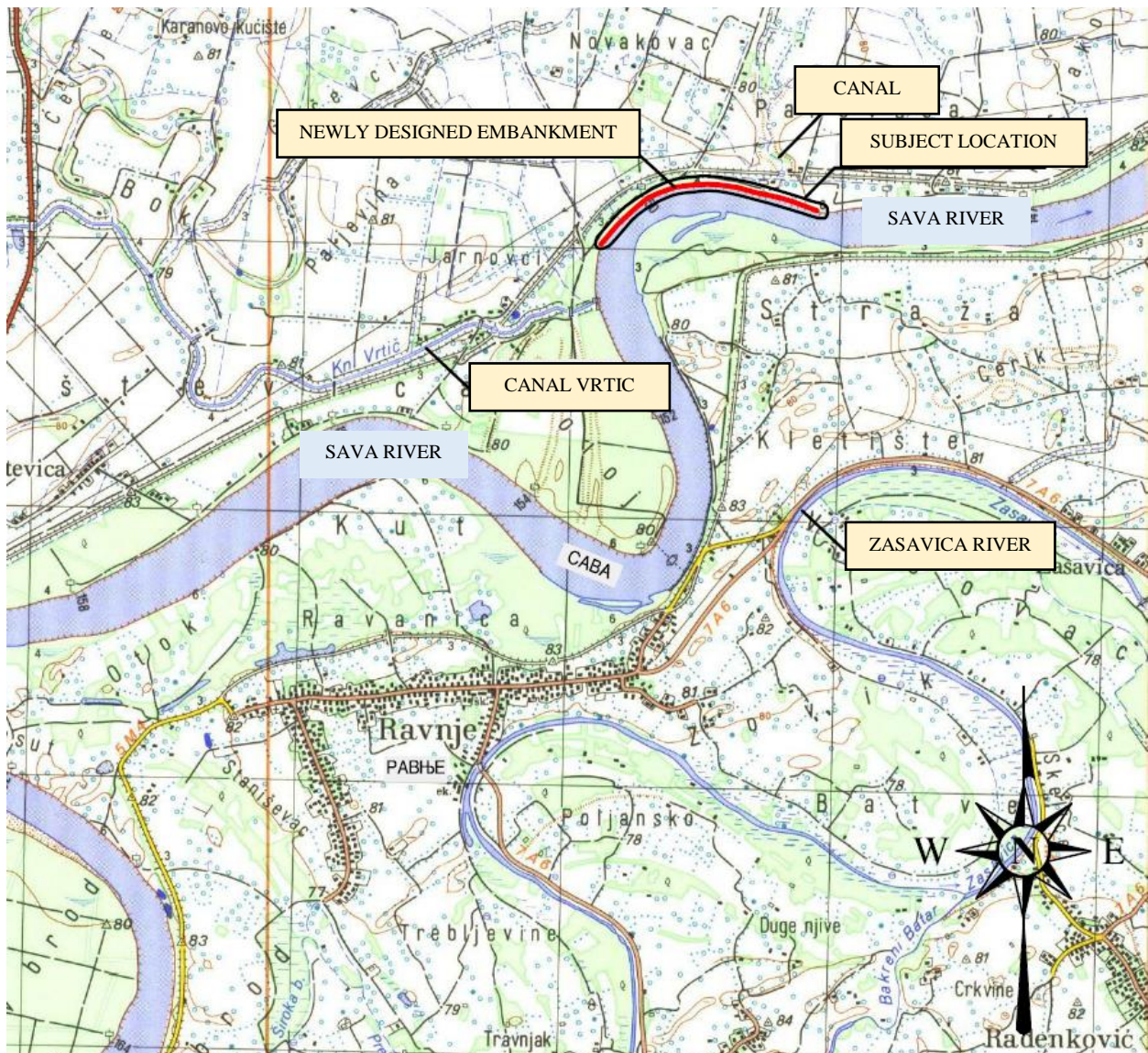
The project defines technical solutions and scope of works on river bank rehabilitation in the Popova Bara stretch, with the goal of stopping further erosion of the left river bank resulting from the meandering river flow through the region and poor river bank resilience, rehabilitating existing damages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



Picture 1: Project location, Martinci region, Sava River



Picture 2. Project zone in respect to Martinci village and the city of Sremska Mitrovica



Picture 3. Project micro location, Martinci

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.

1.3. Baseline conditions assessed during route survey

The project section is 1760 m long, has a poor soil composition and is exposed to a constant influence of the Sava River. Along the entire project section, from rkm 151+300 to rkm 153+060, there is an earth embankment with access ramps into the unprotected zone, at chainages rkm 151+510 and rkm 152+340. The left bank of the Sava River near Martinci is located in concave curve with a narrowed riverbed. Above mentioned properties cause continuous destruction of the river bank and movement of the left riverside towards the Martinci village, existing embankment and neighboring farmlands. The erosion process influences the river bank and the riverbed. Destruction of the left river bank has caused the Sava River to move closer to the residential houses and/or weekend cottages. At the beginning of the section the river bank along the section is nearly vertical or with steep slopes, while nearing the end of the section the river bank has a smoother slope. Approximately 50 to 100 m, away from the left river bank is an earth embankment, functioning as the main flood protection tool in the project area. 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. (Picture 3)



Picture 4. Beginning of the project section

Due to erosion, the left bank of Sava River is destroyed and the riverbed had moved towards the existing embankment, near agricultural lands and the village Martinci. At the beginning of the project section, from rkm 151+500 to rkm 151+700, there are approximately 11 residential houses and/or weekend cottages, with the nearest one being cca. 3 m away from the eroded river bank. (Picture 4)

Characteristics of the surrounding land are typical for plains. 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.



Picture 5. Residential houses and most significant damages to the river bank along the project section



Picture 6. End of the project section

In Martinci, 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, and possible compromising of the existing earth embankment.

Embankment stabilization works on project section, starting from rkm 151+300 to rkm 153+060, in total length of 1760 m, their environmental and social impacts, mitigation measures and monitoring activities are subject of this Environmental and Social Management Plan (ESMP). A total of 28 parcels will be affected by the project works, eight of them are and will remain state property, and 20 of them are in private property. The Land required for development of the Project will be acquired and compensation as per the entitlement matrix for eligible affected persons paid as a condition precedent to commencement of works.

1.3.1. Air and Water Quality

According to the chemical analysis of the Sava River, performed by the Public Health Administration of Sremska Mitrovica, downstream from the project zone the water quality is of the II category.

Sampling and analysis of physicochemical and microbiological parameters of the Sava River meets the requirements of the Regulation on limit values of pollutants in surface waters¹. The River may generally be used for swimming and recreation, water sports, fishing or with usual water treatment methods even as drinking water.

City of Sremska Mitrovica is included in the National Network of Automatic Stations for Air Quality Monitoring. Although the air quality measuring station is located within the urbanised section of the city, approximately 20 km away from the project zone, the results indicate that the annual air quality corresponds to category I.

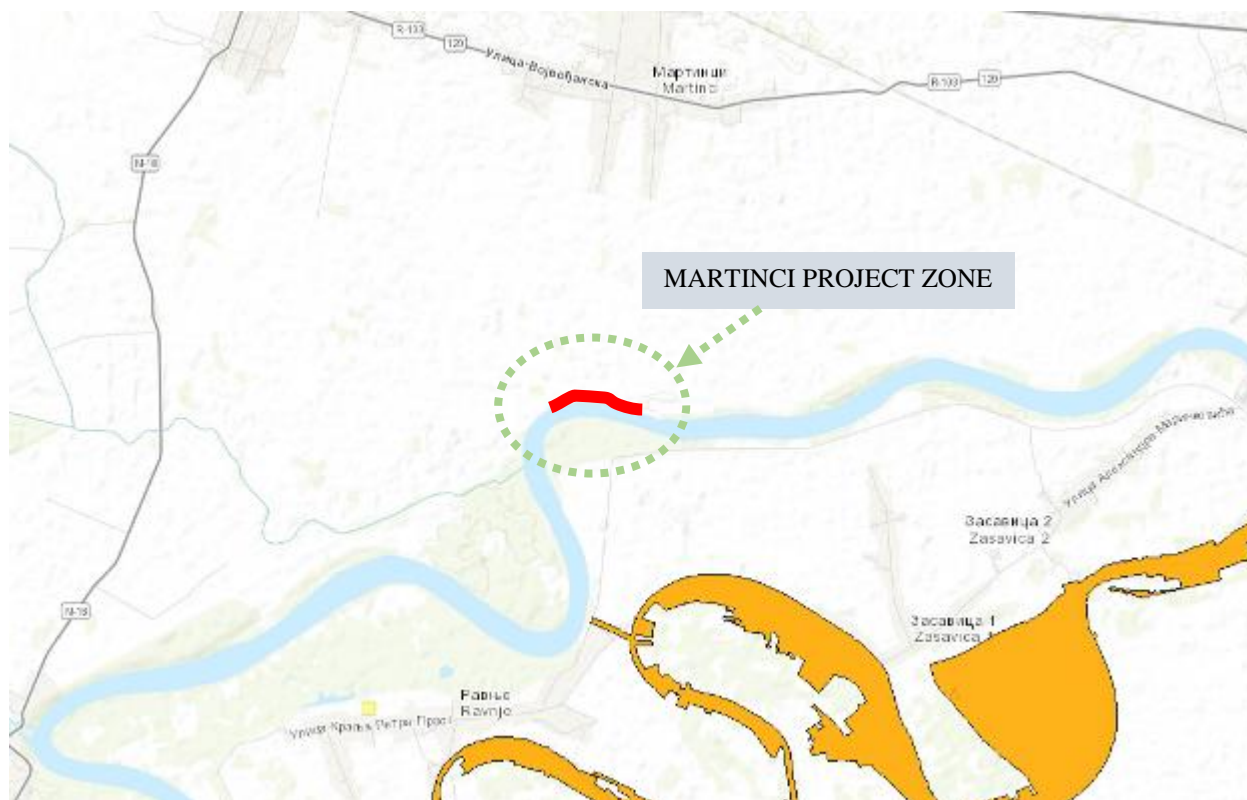
1.3.2. Population

Martinci village is one of the largest villages within the Sremska Mitrovica municipality. It is built on the verge of an alluvial terrace, 2.5 km north from the Sava River and 14 km west from the city of Sremska Mitrovica. According to the 2011 Census Martinci has a population of 3070, with agriculture being the primary industry.

1.3.3. Zone of works and its location in respect to natural and cultural 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 Regulation on ecological networks (Official Gazette of the Republic of Serbia 102/2010)

According to the map of natural and cultural protected sites, there are no natural nor cultural protected areas within the project zone. Approximately 2.5 km south of the project zone there is a natural protected area “Zasavica”, established in 2017. Zasavica bog is known in the region for their successful reintroduction of the European beaver, a specie which have gone extinct in the region due to human activities. (Picture 6)



Picture 7. Location of the project zone in respect to the natural protected area “Zasavica” (orange)

Upon analysing publicly available database of immovable cultural heritage sites, two immovable cultural goods were identified, “barn in Zasavica” and “barn in Martinci” with both of them dating from the beginning of the 20th century, located 6 and 7 km away from the project zone, respectively. (Picture 7)

¹ Decree on limit values of pollutants in surface water and groundwater and sediment and deadlines for their attainment (Government of the RoS, nr. 110-3320/2012-1 dated 10 May 2012)



Picture 8. Project zone in respect to immovable cultural goods

No preconditions from the Institute for Nature Conservation of Serbia nor Institute for Protection of Cultural Monuments were obtained, since the works proposed for the Martinci Sub-Project, according to relevant national legislation, do not require any specific environmental treatment in terms of approvals and/or licences, likewise there aren't any registered cultural goods within the project zone.

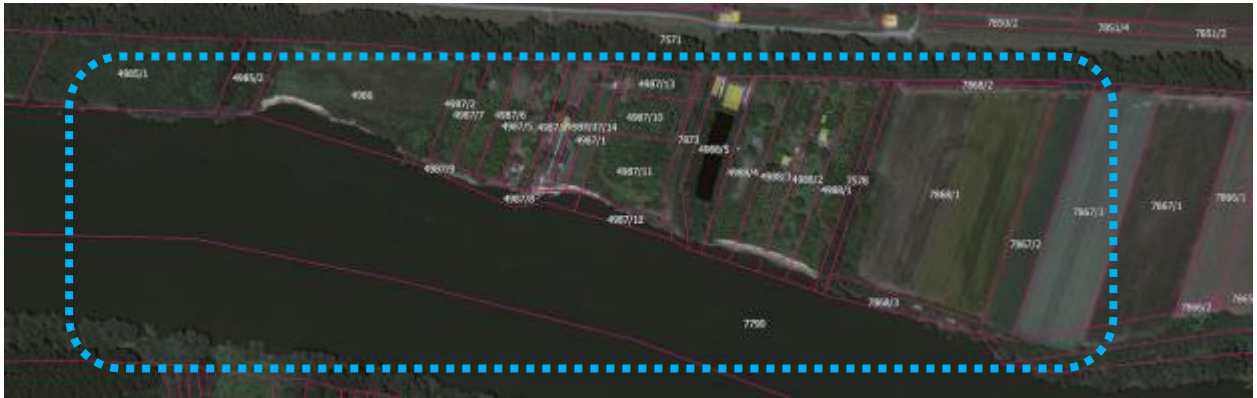
1.3.4. Land acquisition and Property – Legal affairs

For this Sub-Project a site specific Resettlement Plan was prepared in line with ESS5 the SDIP RPF, in respect of national laws and regulations of Republic of Serbia. In general, the RP aims to assess the impacts, describe compensation and other resettlement assistance measures, if possible set out actions on how to avoid and mitigate negative impacts due to loss of private land or assets, provide prompt and effective compensation for residual impacts to affected people, if any and include provisions for adapting resettlement implementation in response to unanticipated changes in project conditions, or unanticipated obstacles to achieving satisfactory resettlement outcomes.

An alternative route for the Sub-project could not have been explored and the impact area itself could not have been avoided due to the nature of the Sub-project, since the alignment is set as it follows the position and the eroded and exposed coast of the river. It has been determined that Sub-project design induces minimum negative impact to PAPs and the community, as planned works will evoke only cases of partial plot and minor land acquisition, benefiting the whole community of Martinci, but foremost the impacted owners closest to the river and most susceptible to flooding risks.

The land to be acquired for the Sub-project will be compensated at replacement cost, as per Entitlement matrix presented in the RPF prepared by the Project and the Sub-Project Specific Resettlement Plan. In most cases, small portions of individual land will be acquired and compensation will have to be cash based, in accordance with the national legislation and the ESS5. However, if in some cases larger plots are being acquired (only cases of eroded land plots as shown above and PAPs livelihood is land based, the owners will be presented with a choice between in-kind or cash compensation, in accordance with ESS5.

The proposed project affects a total of 28 parcels, with 20 of them owned by 22 private (co)owners, while 8 are owned by the State and are not used by the local community. Picture 9 depicts the project location and affected parcels.



Picture 9. Project location and affected parcels

Two structures may possibly be affected by construction works and/or by land acquisition. They are located close to the present coastline; both were constructed by the owners of the land without building permit and not legalized and one of them is not entered in the Cadaster and real-estate public records. At this moment, it is not possible to say if and at what extent these structures will be affected as the Elaborate of expropriation, as stated, is not prepared yet, but some measure of impact to these structures is considered to be very likely. These are the two structures:

1. Structure located on parcel number 4987/4 - this is a wooden construction auxiliary structure used as a "summer house" for recreation and storage purposes.
2. Main structure on parcel 4987/5 - small wooden weekend house, used for occasional visits and rest.

No physical displacement is required as neither of the PAPs or their families are living in these structures.

No community infrastructure will be affected and the adaptive design management procedures are assuring that the drainage channel adjacent to the flood protection works.



Picture 10. Drainage channel to which impact has been avoided

The PIU will disclose sub-project information to allow the affected community and other stakeholders to understand the risks and impacts of the Sub-project, and potential opportunities. The Borrower will provide the community and hold meaningful consultation with access to the following information:

- The purpose, nature and scale of the project; (done on October 16, 2019)
- The duration of proposed project activities;
- Potential risks and impacts of the Sub-project on local community;
- The proposed stakeholder engagement process highlighting the ways in which stakeholders can participate;
- The time and venue of any proposed public consultation meetings, and the process by which meetings will be notified, summarized, and reported; and
- The process and means by which grievances can be raised and will be addressed.

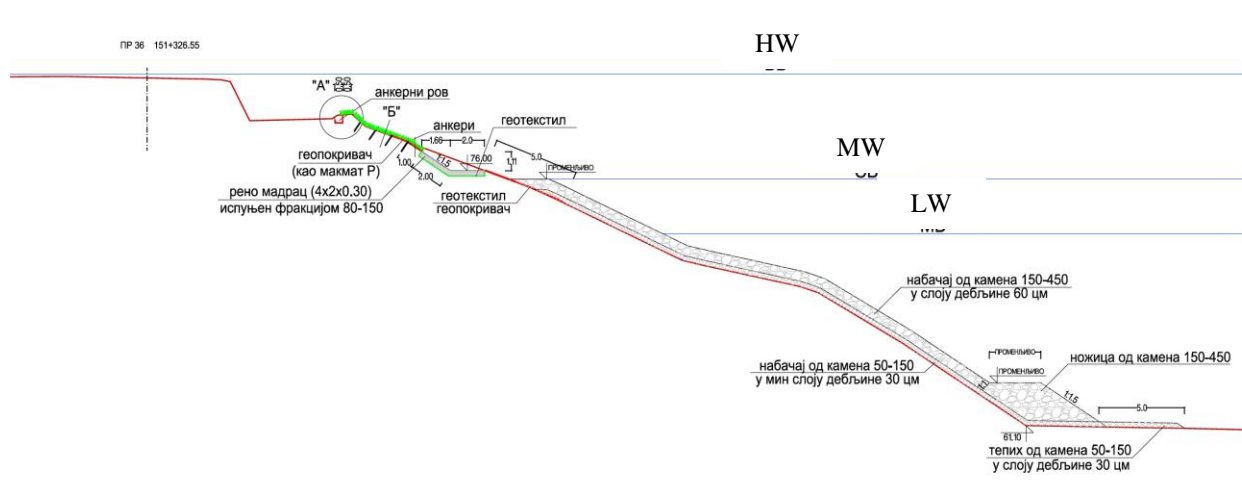
An official and formal LGD and CFD will be established as a forum for grievances and comments in relation to expropriation, temporary impact to any kind of property, damages in relation to execution of the works. The information about the GM will be publicly disclosed and available on the notice board in LM of Sremska Mitrovica and local office in Martinci.

The LGD in case of this Sub-project shall be a body of three members. This is deemed to be sufficient capacity to deal with grievances. One of the members is a representative of PAPs one a local official from the Local Community Centre in Martinci not directly involved in the process of expropriation to ensure full impartiality and the third member is a representative of the PIU. The LGD will meet as necessary, depending on the range and nature of grievances.

1.4. Description of the adopted technical solutions

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

Slope steepness of 1:1.5 has been determined in the hydraulic calculation with two layers of stone lining. On the lower layer of the slope, works are to be done with stone fractions from 50 to 150 mm and a thickness of 30 cm, larger fractions are used to mitigate the stone lining being carried away by the river current. On the upper layer of the slope, stone fraction from 150 to 450 mm is used and a thickness of 60 cm. Conceptual Design Solution is given below in respect to the level of high waters (HW), medium waters (MW) and low waters (LW). (Picture 10)



Picture 11. Conceptual Design Solution

2. LEGAL AND INSTITUTIONAL FRAMEWORK

2.1. Relevant Institutions

In the Republic of Serbia SDIP will be implemented through two PIU's which are formed in the Ministry of Agriculture, Forestry and Water Management (MAFWM) and the Ministry of Transport, Construction and Infrastructure (MCTI).

The MAFWM and the Ministry of Environmental Protection (MEP) are the key relevant institutions for environmental management for SDIP related projects.

The other aspects of environmental management related to SDIP 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) "Srbijavode", "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 embankment stabilization 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:

- Regulation 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)

Regulation on Labour, Working Conditions and Gender equality

- Labor Law ("Official Gazette of RS" No. 24/2005, 61/2005, 54/2009, 32/2013, 75/2014, 13/2017 , 113/2017 and 95/2018)
- Law on Civil Servants ("Official Gazette of RS" No. 79/2005, 81/2005, 83/2005, 64/2007, 67/2007, 116/2008, 104/2009, 99/2014, 94/2017 and 95/2018)
- The Law on Peaceful Settlement of Labor Disputes ("Official Gazette of RS" No. 125/2004, 104/2009 and 50/2018)
- Law on Employment and Unemployment Insurance ("Official Gazette of RS" No. 36/2009, 88/2010, 38/2015, 113/2017 and 113/2017)
- Law on Employment of Foreign Citizens ("Official Gazette of RS" No. 128/2014, 113/2017, 50/2018 and 31/2019)
- Law on Retirement and Disability Insurance ("Official Gazette of RS" No. 34/2003, 64/2004, 84/2004, 85/2005, 101/2005, 63/2006, 5/2009, 107/2009, 101/2010, 93/2012, 62/2013, 108/2013, 75/2014, 142/2014, 73/2018 and 46/2019)
- Law on Health Insurance ("Official Gazette of RS" No. 25/2019)
- Law on the Prohibition of Discrimination ("Official Gazette of RS" No. 22/2009)
- Law on the Prevention of Harassment at the Workplace ("Official Gazette of RS" No. 36/2010)
- Rulebook on Conduct of Employers and Employees in Relation to Prevention and Protection from Harassment at Work ("Official Gazette of RS" No. 62/2010)
- Law on Protection of Whistle Blowers ("Official Gazette of RS" No. 128/2014)
- Law on Gender Equality ("Official Gazette of RS" No. 104/2009)

2.4. Applicable Environmental and Social Standards

Environmental and Social Standards relevant for the Martinci Project are:

	E & S Standards	Relevance
ESS1	Assessment and Management of Environmental and Social Risks and Impacts	Relevant
ESS2	Labor and Working Conditions	Relevant
ESS3	Resource Efficiency and Pollution Prevention and Management	Relevant
ESS4	Community Health and Safety	Relevant
ESS5	Land Acquisition, Restrictions on Land Use and Involuntary Resettlement	Relevant
ESS6	Biodiversity Conservation and Sustainable Management of Living Natural Resources	Relevant
ESS7	Indigenous Peoples/Sub-Saharan African Historically Underserved Traditional Local Communities	Not Relevant
ESS8	Cultural Heritage	Relevant
ESS9	Financial Intermediaries	Not Relevant
ESS10	Stakeholder Engagement and Information Disclosure	Relevant
OP 7.50	Projects on International Waterways	Relevant

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.

Embankment stabilization works would not pose significant risks to the environment. In addition, the project aim is to decrease embankment erosion and deviation of the riverbed, and as such will have a localized impact on the flow of the river. Proposed works can be divided into surface and riverbed works. Riverbed works are expected from June to November, coinciding with low water levels, and should not last as long as surface works, which will start first. 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 can pose a threat to freshwater habitats, while noise originating from construction machinery may temporarily impact surrounding surface habitats including the natural protected area "Zasavica" located south of the site. Impacts on other habitats are not expected.
- **Sourcing of materials.** As typical for construction works the project will increase consumption of energy and raw materials, waste generation and emission of pollutants. Impact will be mitigated through utilising material plants possessing valid environmental permits.
- **Disposal of excavated materials and construction wastes.** Demolition debris and excessive soil are usually generated during the repair / reconstruction works on drainage and river embankment systems;
- **Degradation of landscapes and soil erosion.** The impacts on vegetative cover will be short-term, localized, and totally associated with repair / reconstruction 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 repair / reconstruction 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.** No archaeological or cultural resources are expected to be encountered during project implementation since major works consist in upgrading / reconstruction of existing systems where in case of any findings the Contractor shall cease with works momentarily and notify the IPCM.
- **Key Labor Risks.** Project workers (external consultants and employees of service providers) are anticipated to be office staff with most of their work done indoors. Contractor's employees will encounter difficult working conditions regarding the river bank works, any OHS impacts will be mitigated by applying the procedures put forth in this ESMP document and relevant national legislation. All Employers of direct or contracted workers, in the project must ensure safety and health at work and strict adherence to the legal provisions in respect to worker's rights.

3.1. Potential environmental impacts of Martinci 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. The 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 SDIP 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, transport).

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 Sava and Drina River Corridors Integrated Development Program.

3.2.1. Capacity Strengthening and Training

Through SDIP project implementation relevant national agencies will familiarize themselves with WB Environmental and Social Standards through consultations and public presentations, as well as with good practices in their purposeful implementation.

Engaged Contractors will be obliged to familiarize their workers and staff engaged on Sub-Projects implementation with the Environmental and Social Standards, increasing awareness and knowledge.

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	Significance	Comment
impacts on land use/ settlements,	moderate	The Sub-Project will require land acquisition of private land, but will not require physical displacement. The Impacts are

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Impact	Significance	Comment
		mitigated by implementation of measures provided in the Sub-Project Resettlement plan prepared in line with ESS5
ground and surface water,	low	Due to low amount of drainage water that can be potentially drained from the Contractor's site and during works execution into the river the consequential impact is expected to be minimal to negligible. Adequate project supervision will be established and no long term water disturbance or similar activities will be allowed. Considering the methodology of works on embankment regulation, localized impacts to the river flow (increased turbidity) are expected. Haltening of the erosion of the riverbank will result in increased river flow in operational phase. Also, improper disposal of excavated materials and construction wastes could adversely impact ground and surface water. A properly organised waste disposal is mandatory requirement for the Project.
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. The project works will lead to increased consumption of energy and raw materials, waste generation and emission of pollutants. Impacts can be offset or mitigated by following GEMM procedures and possession of valid environmental permits by the material suppliers. 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,	low/negligible	Regular repair / reconstruction activities could, if not properly managed, cause disturbance to the cultural and religious sites. Impact can be avoided by implementing ESMP related measures.
cumulative impacts etc.	moderate	Temporary, repair / reconstruction works may cause a slight increase of noise levels and air pollutants concentrations during the works only
Community Health and Safety	moderate	Risk to community health and safety (ESS4). The major risks tied to Community health and Safety relate to potential traffic

Impact	Significance	Comment
		and road safety risks to workers, affected communities and road users throughout the project life. These risks mainly stem from increased traffic on haulage routes from and to potential borrow and deposit areas to be used by the Contractors during construction works. Increased risk from hazardous materials including UXOs, mines and mine-exploding devices might be found which shall adequately be addressed through development of "Unexploded ordnance and mines chance finds procedure. Health and safety risks posed by the influx of workers or people providing support services into an area are almost considered negligent, while Gender-Based Violence (GBV) or Sexual Exploitation and Abuse (SEA) of children, or communicable diseases are not anticipated in relation to the project.
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.
General population	low	Works surrounding the inhabited areas mostly consist of upgrading of the existing embankment; zone of works is mostly uninhabited and used for agriculture. Minor impacts on general agricultural activities around the project area are expected.

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. Contractor's camp site may be a potential source of temporary adverse impacts.

A Grievance Mechanism will be implemented to ensure that all complaints from local communities are dealt with appropriately, with corrective actions being implemented, and the complainant being informed of the outcome. It will be applied to all complaints from affected parties. A grievance form is attached in Annex 3 and hard copies will be made available at community centers.

A specific Grievance Mechanisms for employee's complaints will be established and should address workplace concerns specifying procedures as to whom a project worker should lodge the grievance, the time frame for receiving a response or feedback and steps to refer to a more senior level, while allowing for transparency, confidentiality and non-retribution practices.

The mechanism should foresee the procedure that at least:

- Specifies to whom the employee should lodge the grievance;
- Refers to the time frame allowed for the grievance to be dealt with;
- Allows the employee to refer to a more senior level within the organization if the grievance is not resolved at the lower level;
- Includes right to representation;
- Guarantees non-retribution practice;
- Does not impede access to other judicial or administrative remedies that might be available under the law or through existing arbitration/dispute resolution procedures, if the grievance is not resolved within the organization;
- Provides for anonymous complaints to be raised and addressed.

3.4. Potential water / wetland impacts

While implementing the works localized impacts are expected, resulting from increased turbidity and disturbed river flow. Disturbance to the river flow is expected upon works completion, whereas the

protected embankment no longer deviates resulting in increased water flow, emphasized during high water season. Low water levels on the project section are observed from June to November, while high water levels are observed from March to June.

During reconstruction/construction of embankment protection system at Sava River in the area near Martinci, 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. ENVIRONMENTAL MITIGATION MEASURES

This document presents a site-specific ESMP, prepared by the ESSS and is required for each SDIP sub-project. A site-specific ESMP is an action plan detailing which of the Environmental Assessment report recommendations and alternatives are adopted and implemented. It can be produced as part of Detailed Design, or like the subject ESMP, as a free-standing document. It ensures incorporation of the relevant environmental factors into the overall project design and links the project to other relevant Environmental and Social Standards.

4.1. Cost Estimates

Scope of prescribed mitigation measures for the subject project works is such that it correlates with good environmental practises during construction and their implementation will have a negligible impact on the total cost of the works.

It is the Contractor's obligation to cost implementation of environmental mitigation measures in his overall cost. The Contractor will be required to provide a short statement that confirms that:

- the ESMP conditions have been costed into the bid price,
- the Contractor has a qualified and experienced person on the Contractor's team who will be responsible for the environmental compliance requirements of the ESMP
- the Contractor and its sub-contractors will comply with Republic of Serbia national laws and Lender requirements.

4.2. Mitigation Measures

4.2.1. General

This section details out the potential environmental and social impacts of the SDIP sub-projects.

4.2.2. Environmental and Social Impacts and Respective Mitigation Measures

Erosion of embankment slopes

Impact - The earthworks for the sub-project activities might cause negative impacts in form of erosion on embankment slopes, dust, noise and vibration to disturb the local people.

Mitigation Measures - Excavation and/or filling will be done in such a way that the slope of the embankment should be within right of way. The Contractor should use erosion control measures such as re-vegetation of disturbed areas and placing of tarps. The Contractor shall stabilize the cleared areas not used for repair / reconstruction activities with vegetation or with the appropriate surface treatments as soon as practicable following completion of activities.

Increased generation of pollution – Supply of material

Impact - The project works will lead to increased consumption of energy and raw materials, waste generation and emission of pollutants.

Mitigation Measures – During material supply ensure that material plants engaged by the Contractor possess valid environmental permits and conformance with the requirements of environment protection, health protection and human safety.

Potential air pollution - Dust

Impact - Possible sources of air pollution will be dust due to maintenance activities, machinery movement and other sources. Repair / reconstruction 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 repair / reconstruction works.

Potential water impacts

Impact - While implementing the works localized impacts are expected, resulting from increased turbidity and disturbed river flow, accidental water impacts 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 - The site will establish appropriate erosion and sediment control measures (e.g. hay bales and / or silt fences) to prevent sediment from moving off site and causing excessive turbidity in nearby streams and rivers. 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.

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 repair / reconstruction 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 ESMP 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 and Social Management Plan (ESMP) 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 repair / reconstruction 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 repair / reconstruction works.

Labor risk

Impacts - Workers may be affected adversely due to labor dissatisfaction, perceived maltreatment and third party employing

Mitigation Measures – Establishment of a worker specific grievance mechanism for project workers. The project worker is entitled to give suggestions, remarks and information regarding health and safety at work. He/She may refuse to work if his/her life or safety is endangered or if appropriate measures for provision of health and safety at work are not in place. The project workers should be informed on available grievance mechanisms upon their employment or engagement. Contracted parties should demonstrate their willingness to implement these mechanisms, even if such requirement is not prescribed by any law of the domicile country.

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

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- Oil and fuel storage management plan
- In-river works management plan
- Camp management plan
- Re-forestation plan
- Emergency response plan

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

Contractors are obligated to familiarize their workers with the Environmental and Social protection measures put forth within the subject ESMP document.

4.3. Mitigation Plan for SDIP Sub-Project MARTINCI

Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
PRE-CONSTRUCTION	EIA Procedure and Tender documents preparation			
	Tender documents prepared with access to or use of the this ESMP in a translated version	No Tender documents will be prepared without incorporated a (Serbian) copy of the mitigation and monitoring plan ESMP, which shall be included in the safeguard clauses of the Technical Specifications in the contracts and commitment to comply with Lender Requirements	PIU Employer PWMC "Vode Vojvodine"	
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.
	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"	

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Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
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. After exploitation ensure borrow pits are remediated.	Sand and gravel Contractor or Separation	to be specified in Tender 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 Tender 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	
CONSTRUCTION	Construction site			
	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	Storage of wastes according to international best practice (IFC EHS General Guideline). Apply additional measures	Construction Contractor	

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Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
	waste materials	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.		
	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	
	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	
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 line with the Waste management report. Procedure for actions in case of incidental oil and lubrication spills. 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.	Contractor	Problems should be regulated through the Works execution contract.
Rehabilitation/ Reconstruction/ Repair	Water and soil pollution due to inadequate disposal of communal, inert and hazardous	Typical containers for solid Communal waste are placed at the construction site locations; Acceptance of collected Communal waste and its disposal by authorised institutions;	Contractor	Problems should be regulated through the Works execution contract.

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Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
	waste.	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.		
Rehabilitation/ Reconstruction/ Repair	Potential pollution of soil and water due to the discharge of waste sanitary waters from the construction site	Installation of ecological toilettes for workers	Contractor	Problems should be regulated through the 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 from 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.
	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);	Maintenance Contractor	

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Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
		dispose waste material at location protected from washing out		
	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 if applicable)	
	Workers safety	provide workers with safety instructions and protective equipment; safe organization of bypassing traffic	Construction Contractor	
	Community health and safety	<p>preparation of all pertaining parts of Construction H&S Management Plan (OHS, community safety plan, traffic management plan, hazardous materials safety plan, training programme, emergency preparedness and response etc.)</p> <ul style="list-style-type: none"> - Traffic Management Plan <p>Following emergency preparedness and response plans will be prepared, as a minimum:</p> <ul style="list-style-type: none"> - Spill Response Plan, - Fire Response Plan (fire and explosion hazards, identify evacuation routes; - Traffic Accident Response Plan - Structure Collapse Preparedness and Response Plans - Flooding preparedness and response plan - Unexploded ordnance preparedness and Response Plan (which will include Unexploded Ordnance Chance Finds Procedure; <p>Minimum content of plans - Organisational structure, Responsibilities, Communication, Procedures, Training, Resources.</p> <p>When required by the National Legislation, Contractor is obliged to consult relevant Institutions/Ministries and obtain approval for these plans.</p> <ul style="list-style-type: none"> - Security personnel Code of Conduct and awareness 	Construction Contractor	

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Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
		<p>training</p> <ul style="list-style-type: none"> - Avoid night time construction when noise is loudest. Avoid night-time construction using heavy machinery, from 22:00 to 6:00 near residential areas. - No discretionary use of noisy machinery within 50m of residential areas and near institutions, manual labor can be used at this point. - Good maintenance and proper operation of construction machinery to minimize noise generation. - Where possible, ensure non-mechanized construction to reduce the use of machinery - Undertake regular maintenance of generator 		
	Labor risks	Workers may raise their concerns (safety, discontent, maltreatment or else) through the Grievance Mechanism.	Construction Contractor	
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.
Rehabilitation/ Reconstruction/ Repair	Emissions of dust from the landfill of earth material. due to vehicles' movement on macadam roads and construction works	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.	Contractor	Problems should be regulated through the Works execution contract.

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Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
	execution.	Prepare and implement a Plan for construction site organisation that includes good construction practices.		
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	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/	Risk of injuries at work.	Demand from all workers to abide by the Protection at	Contractor	Problems should be

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Environmental and Social Management Plan - ESMP

Phase	Problem/activity impact	Mitigating measure	Institutional responsibility	Comment
Reconstruction/ Repair		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.		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.

5. ENVIRONMENTAL AND SOCIAL MONITORING ACTIVITIES

DWM/PIU and PSC will monitor overall environmental performance during project implementation. Each SDIP sub-project will have a site specific ESMP 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 repair / reconstruction 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 SDIP sub-project Martinci.

5.1. Monitoring Plan for SDIP Sub-Projects MARTINCI

Phase	What is the <i>parameter to be monitored?</i>	Where <i>the parameter should be monitored?</i>	How <i>the parameter should be monitored?/ type of monitoring equipment</i>	When <i>the parameter should be monitored? (frequency of measurement or continuous)</i>	Why <i>the parameter should be monitored? (optional)</i>	Institutional responsibility
						Operate
CONSTRUCTION			Material supply			
Quarry	Possession of an official approval or valid (operating) license	quarry	insight into the documentation	prior to the commencement of works	ensure compliance of the plant with environmental and social protection and health and safety at work	Quarry manager / Supervision
Sand and gravel borrow pit	Possession of an official approval or valid (operating) license	sand and gravel borrow pit	insight into the documentation	prior to the commencement of works	ensure compliance of the plant with environmental and social protection and health and safety at work	Borrow pit or separation facility manager / Supervision
CONSTRUCTION			Material transport			
Stone	truck load or covered 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 or covered 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			

SAVA AND DRINA RIVER CORRIDORS INTEGRATED DEVELOPMENT PROGRAM - SDIP
Environmental and Social Management Plan - ESMP

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
<i>Cultural goods and archaeological findings</i>	presence of archaeological findings in the soil	at and near the Construction site	supervision of earthworks	Archaeological Supervision by the competent IPCM if required by the preconditions	for the sake of preservation of cultural heritage	Contractor Supervision (Monitoring), if engaged, archaeological Supervision
Rehabilitation/ Reconstruction/ Repair	degradation and soil pollution	at the construction site and directly around the construction site	visual supervision	weekly	for prevention of soil degradation and pollution	Supervision
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	for the purpose of establishing a safe working environment	Supervision
Rehabilitation/ Reconstruction/ Repair	occurrence of noise and air pollution	at the works execution location	standard air quality and noise level measurement equipment.	upon received citizens' complaints	for minimizing noise and air pollution	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	for prevention of destruction of crops, woods, meadows etc.	Supervision
Rehabilitation/ Reconstruction/ Repair	working hours control.	at the works execution location	visually and comparison with the construction site organisation plan.	upon received citizens' complaints	for respecting workers working hours and mitigating social and environmental impacts	Supervision

SAVA AND DRINA RIVER CORRIDORS INTEGRATED DEVELOPMENT PROGRAM - SDIP
Environmental and Social Management Plan - ESMP

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
Rehabilitation/ Reconstruction/ Repair	waste management during the works execution	at the construction site	visually and by comparison with the waste management report.	permanently	for ensuring proper waste management	Supervision
Rehabilitation/ Reconstruction/ Repair	existence of zones/sites for preliminary accumulation of wastes	at and near work site	inspection	during construction works	preventing pollution of water and soil because of improper disposal of excavated materials and construction wastes	Contractor, Supervision
Rehabilitation/ Reconstruction/ Repair	waste remnants and soil degradation	at the project location	visually	after the works completion	Ensuring that the site has been returned to quasi-original conditions, upon Construction site closure	Contractor, Supervision
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	ensuring adequate health and safety and working conditions, ensuring works execution in accordance with relevant labor legislation	Contractor, Supervision
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	for the purpose of minimizing social impacts	project applicant

SAVA AND DRINA RIVER CORRIDORS INTEGRATED DEVELOPMENT PROGRAM - SDIP
Environmental and Social Management Plan - ESMP

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
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	ensuring adequate quality of executed works	Supervision
Rehabilitation/ Reconstruction/ Repair	clear delineation of access roads and work sites to prevent their expansion	at access roads and work sites	inspection, observation	during construction works	prevent loss of top soil due to temporary access roads and work areas, Landscape degradation	Contractor, Supervision
	cleaning of access roads and work sites after construction works completion	at access roads and work sites	inspection, Observation	after construction works		Contractor, Supervision
	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.		PIU Environmental Specialist
Rehabilitation/ Reconstruction/ Repair	sprinkling of water to suppress the dust	at access roads and work sites	inspection, observation	during construction works	preventing temporary air pollution (dust) related to the transportation of construction materials and truck traffic	Contractor, Supervision

SAVA AND DRINA RIVER CORRIDORS INTEGRATED DEVELOPMENT PROGRAM - SDIP
Environmental and Social Management Plan - ESMP

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
Rehabilitation/ Reconstruction/ Repair	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	preventing noise and vibration disturbances	Contractor, Supervision
	measure noise levels (Db)	at and near the work site	inspection	during construction works		Contractor, Supervision
Rehabilitation/ Reconstruction/ Repair	use of protective equipment, organization of by-passing traffic	at work site	inspection	during construction works	increasing staff safety	Contractor, 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	Contractor, Supervision
Worker's rights	proof of lawful employment	job site/Contractor's office	inspection	unannounced inspections during works execution	ensure worker's enjoy rights guaranteed by Law	Labor Inspection
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

6. ENVIRONMENTAL AND SOCIAL MANAGEMENT RESPONSIBILITIES

For each potential impact the ESMP 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 ESMP during the construction phases according to the Bank's Environmental and Social Standards 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 Sava and Drina River Corridors Integrated Development Program Project Implementation Unit (PIU) will be responsible for supervising the timely, proper and reliable implementation of works and measures in the consequence provided by the ESMP. PIU 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 ESMP mitigation and monitoring aspects are implemented on the ground during the construction phases according to the Bank's Environmental and Social Standards 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 Environmental and Social Standards;
- 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.

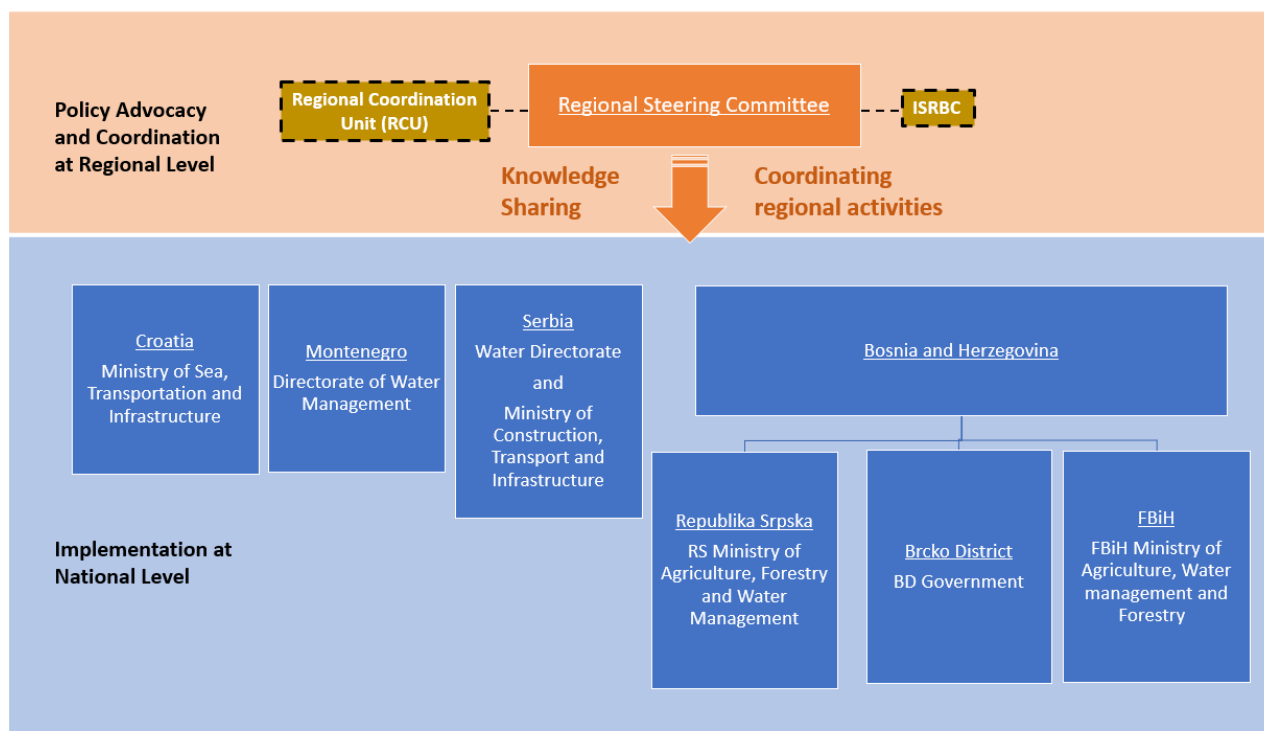
Construction works contracts should include this ESMP with its Environmental and Social Mitigation Plan and Environmental and Social Monitoring Plan presented within the chapter 4 and chapter 5 of this ESMP document. This ESMP document will be a part of the bidding and contractual documents for which the contractor hired will be responsible to implement and to ensure that all works are completely conducted in a manner which will not generate negative impacts to the environment. The works Supervisor will ensure compliance with the ESMP listed measures and provide reports on compliance.

7. IMPLEMENTATION ARRANGEMENTS

The Regional Steering Committee together with the Regional Coordination Unit will be responsible for policy advocacy and coordination at a regional level, while at a national level the two PIUs formed in the Water Directorate and the Ministry of Construction, Transport and Infrastructure will be responsible for project management functions and day to day operations.

While the National PIUs will be primarily responsible for M&E in respective countries, the **International**

Sava River Basin Commission (ISRBC) will be responsible for overall monitoring and evaluation (M&E) implementation and coordination between the riparian countries and will serve as a liaison with the WB at the regional level and PIUs in each of the riparian countries/entities. An integrated Management Information System (MIS) system will be developed and implemented as part of the program to support implementation and reporting.



Picture 12. Institutional and Implementation Arrangements

8. MONITORING AND REPORTING ARRANGEMENTS

8.1. SDIP Project Monitoring

The SDIP project will be monitored by PIUs under the DWM and MCTI. Information and data collected at each of the implementation agencies will be fed into overall M&E. The ISRBC and PIUs will collect and present data and reports for semi-annual reviews by the Regional Committee and respective National institutions responsible for project implementation, in conjunction with Bank missions. The Construction contractor is obliged to perform all monitoring activities (sampling, measurement, etc.) prescribed within the Monitoring Plan of ESMP 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 SDIP projects should be in respect of the bidding documents. The main components of the monitoring plans include:

- Environmental and social issues 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 ESMP 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 ESMP.

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. PIUs to MAFWM, MCTI, 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 ESMPs, 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 ESMPs.

9. PUBLIC CONSULTATIONS AND PUBLIC DISCLOSURE OF THE ESMP

In accordance with WB ESS 10 a draft version of ESMP will be publicly disclosed in the Ministry of Agriculture and Environmental Protection, the Directorate of Water building and in the city of Sremska Mitrovica during October 2019, on period of two weeks. The public consultation meeting will be held in the city of Sremska Mitrovica.

10. REFERENCES

- 01 Conceptual Design, Rehabilitation of the left bank of the Sava River, "Popova Bara" stretch in the zone of the Martinci village, August 2016
- 02 The World Bank Environmental and Social Framework, 2017
- 02 Environmental Assessment Sourcebook No 25, Environmental Management Plans, The World Bank Environment Department, January 1999
- 03 Project Appraisal Document, PAD3402, Sava Drina River Corridors Integrated Development Program, 2019
- 04 Project Information Document, PIDC25739, Project Information Document (Concept Stage) - Sava Drina River Corridors Integrated Development Program – P168862, February 2019
- 05 Environmental and Social Management Framework, ESMF, Sava Drina River Corridors Integrated Development Program – P168862, October 2019
- 06 Resettlement Policy Framework, RPF, Floods Emergency Recovery Project – P168862, October 2019

Annex 1

LEGISLATION

MAIN SERBIAN LEGISLATION:

ANNEX 1: RELEVANT NATIONAL LEGISLATION AS OF APRIL 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:

13. Regulation 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)
14. 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)
15. Rulebook on the contents of the EIA Study ("Official Gazette of RS" No. 69/05)
16. Rulebook on the procedure of public inspection, presentation and public consultation about the EIA Study ("Official Gazette of RS" No. 69/05)
17. Rulebook on the work of the Technical Committee for the EIA Study ("Official Gazette of RS" No. 69/05)
18. Regulations on permitted noise level in the environment ("Official Gazette of RS" No. 72/10)
19. Regulation on establishing class of water bodies ("Official Gazette of SRS" No. 5/68)
20. Regulations on dangers pollutants in waters ("Official Gazette of SRS" No. 31/82)

Regulation on Labour, Working Conditions and Gender equality

21. Labor Law ("Official Gazette of RS" No. 24/2005, 61/2005, 54/2009, 32/2013, 75/2014, 13/2017, 113/2017 and 95/2018)

22. Law on Civil Servants ("Official Gazette of RS" No. 79/2005, 81/2005, 83/2005, 64/2007, 67/2007, 116/2008, 104/2009, 99/2014, 94/2017 and 95/2018)
23. The Law on Peaceful Settlement of Labor Disputes ("Official Gazette of RS" No. 125/2004, 104/2009 and 50/2018)
24. Law on Employment and Unemployment Insurance ("Official Gazette of RS" No. 36/2009, 88/2010, 38/2015, 113/2017 and 113/2017)
25. Law on Employment of Foreign Citizens ("Official Gazette of RS" No. 128/2014, 113/2017, 50/2018 and 31/2019)
26. Law on Retirement and Disability Insurance ("Official Gazette of RS" No. 34/2003, 64/2004, 84/2004, 85/2005, 101/2005, 63/2006, 5/2009, 107/2009, 101/2010, 93/2012, 62/2013, 108/2013, 75/2014, 142/2014, 73/2018 and 46/2019)
27. Law on Health Insurance ("Official Gazette of RS" No. 25/2019)
28. Law on the Prohibition of Discrimination ("Official Gazette of RS" No. 22/2009)
29. Law on the Prevention of Harassment at the Workplace ("Official Gazette of RS" No. 36/2010)
30. Rulebook on Conduct of Employers and Employees in Relation to Prevention and Protection from Harassment at Work ("Official Gazette of RS" No. 62/2010)
31. Law on Protection of Whistle Blowers ("Official Gazette of RS" No. 128/2014)
32. Law on Gender Equality ("Official Gazette of RS" No. 104/2009)

Other relevant Serbian legislation

33. 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)
34. 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).
35. National Assembly. Law on Protection against Environmental Noise. Official Gazette of the Republic of Serbia, No. 36/09, 88/10.
36. National Assembly. Law on Waste Management. Official Gazette of the Republic of Serbia, 2009, No. 36/09.
37. National Assembly. Constitution of the Republic of Serbia. Official Gazette of the Republic of Serbia, 2006, No. 98/06.
38. National Assembly. Law on Environmental Protection. Official Gazette of the Republic of Serbia, 2004, No. 135/04.
39. National Assembly. Law on Air Protection. Official Gazette of the Republic of Serbia, 2009, No. 36/09.
40. National Assembly. Law on Management of Chemicals. Official Gazette of the Republic of Serbia, 2009, No. 36/09.

41. National Assembly. Law on Biocidal Products. Official Gazette of the Republic of Serbia, 2009, No. 36/09.
42. National Assembly. The Law on Environmental Protection. Official Gazette of the Republic of Serbia, 2009, No. 36/09.
43. National Assembly. Law on Occupational Safety and Health. Official Gazette of the Republic of Serbia, 2005, No. 101/05
44. 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).
45. Federal Assembly. Regulation on permitted level of noise in the environment. Official Gazette of the Republic of Serbia, 2010, No. 72/10.
46. 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: 11/25-1
Датум: 11 MAR 2016

Јавно водопривредно предузеће
»ВОДЕ ВОЈВОДИНЕ«
НОВИ САД

Примљено: 22 MAR 2016			
Орг. јед.	Број	Прилог	Вредност
1	6/70		

ЈВП „ВОДЕ ВОЈВОДИНЕ“

Масарикова 17
21000 Нови Сад

Веза: Захтев бр. I-6/14 од 19.02.2016.год., заведен под бројем 11/25 дана 23.02.2016.год.

Предмет: Захтев за издавање података о пловном путу и евиденционим профилима на реци Сави у зони деонице од ркм 151+300 до ркм 153+060

Поштовани,

Поводом вашег дописа, број I-6/14 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 насеља Мартинци (од km 153+060 до km 151+300).

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 153+000, износи 72,77 mm.

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@hidrozavodddtd.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) Republic Hydrometeorological Service of Serbia



Република Србија
РЕПУБЛИЧКИ ХИДРОМЕТЕОРОЛОШКИ ЗАВОД
Београд, Кнеза Вишеслава 66, поштански фах 37
Тел: 30 50 923, факс: 35 37 847, <http://www.hidmet.gov.rs>



Број 925-2- 30

Датум: 04.04.2016. године

БЕОГРАД

Јавно предузеће за производњу
»ВОДЕ ВОЈВОДИНЕ«
НОВИ САД

Примљено:	08 APR 2016		
Оријед.	Број	Потпис	Вредност
I	6/96		

ЈПВ „ВОДЕ ВОЈВОДИНЕ“
Булевар Михајла Пупина 25
21000 Нови Сад

Предмет: Прорачуни метеоролошких и хидролошких података за две деонице реке Саве

По Вашем захтеву број I- 6/16 и I- 6/15 од 19.02.2016. године, у прилогу вам достављамо метеоролошке и хидролошке податке са метеоролошке станице Сремска Митровица и хидролошких станица Сремска Митровица, Јамена и Шабац за деоницу реке Саве ркм 151+300 до ркм 153+060 и деоницу реке Саве од ркм 120+347 до ркм 123+350.
АП

Прилог:

- Прорачуни метеоролошких и хидролошких података.
- Рачун.

в.д. Помоћник директора
Горан Пејановић, дипл. мет.

СЕКТОР НАЦИОНАЛНОГ ЦЕНТРА ЗА КЛИМАТСКЕ ПРОМЕНЕ
тел: 30 50 852, факс: 25 45 087, e-mail: klima@hidmet.gov.rs

ПРИЛОГ:

- Абсолютне максималне, минималне, средње вредности водостаја за хидролошке станице Јамена, Сремска Митровица и Шабац, апсолутне максималне, минималне, средње вредности протока за хидролошке станице Јамена, Сремска Митровица, проток повратног пероида 100 година и рачунске вредности малих вода карактеристичних вероватноћа појаве за хидролошку станицу Сремска Митровица
- Подаци о измереним средњим и максималним брзинама у профилу хидролошке станице Јамена река Сава на стациоажи од km 204+830 (Табела 1.):

Табела 1.

Опсег водостаја од-до (cm)	Средња брзина од – до (m/s)	Максимална брзина од - до (m/s)	Период обраде (год.)
100 - 200	0.426 – 0.534	0.879 – 1.179	2005-2016.
200 – 300	0.555 – 0.678	1.223 – 1.580	2005-2016.
300 – 400	0.622 – 0.681	0.925 – 2.570	2005-2016.
400 – 500	0.609 – 2.110	1.109 – 2.110	2005-2016.
500 – 600	0.620 – 0.900	1.200 – 2.000	2005-2016.
700 – 800	0.915 – 1.025	2.000 – 2.380	2005-2016.
800 – 900	0.916 – 1.213	1.961 – 2.340	2005-2016.
900 – 1000	1.051 – 1.072	1.136 – 2.382	2005-2016.
1000-1055	1.061 – 1.161	2.171 – 2.364	2005-2016.

- Подаци о измереним средњим и максималним брзинама у профилу хидролошке станице Сремска Митровица река Сава на стациоажи од km 139+240 (Табела 2.):

Табела 2.

Опсег водостаја од-до (cm)	Средња брзина од – до (m/s)	Максимална брзина од - до (m/s)	Период обраде (год.)
0 - 100	0.116 - 0.372	0.125 - 1.630	2005-2016.
100 – 200	0.352 - 0.601	0.381 - 1.820	2005-2016.
200 – 300	0.509 - 0.829	0.646 - 1.980	2005-2016.
300 – 400	0.858 - 1.061	0.948 - 1.920	2005-2016.
400 – 500	0.881 - 1.197	1.080 - 2.990	2005-2016.
500 – 600	1.030 - 1.422	1.400 - 2.810	2005-2016.
600 – 700	1.294 - 1.501	1.550 - 3.257	2005-2016.
700 – 800	1.378 - 1.766	1.870 - 3.281	2005-2016.

Напомена:

На предметној деоници од km 151+300 до km 153+060 Завод није вршио мерења. Уколико сте заинтересовани, Завод може извршити хидрометријска мерења ултразвучним АДЦП мерачем протока на локацији и при водостају који одредите.

Апсолутне максималне, минималне и средње вредности водостаја и протока

Бр	Назив станице	Водоток	Слив	Шифра	Одстојање од ушћа (km)	Кота "О" водомера (mm/lm)	Површина слива (km ²)	Hmin (cm)	Датум појаве	Qmin (m ³ /s)	Датум појаве	Hmax (cm)	Датум појаве	Qmax (m ³ /s)	Датум појаве	Qsr (m ³ /s)	Q 1% (T = 100 год.) (m ³ /s)	Меродавна водостај (cm) за Q 1%
1	Јамена	Сава	Дунава	45084	204.8	72.44	64073	115	30.8.2012	207	30.8.2012	1265	17.5.2014	4610	17.5.2014	1170		
2	Ср Митровица	Сава	Дунава	45090	139.2	72.22	87996	-19	19.8.2003	194	5.10.1946	866	17.5.2014	6600	17/05/2014	1570	6710	858
3	Шабац	Сава	Дунава	45094	106.3	72.61	89490	-116	19.8.2003		19.8.2003	664	17.5.2014					649

*) Из оперативног плана за одбрану од поплава

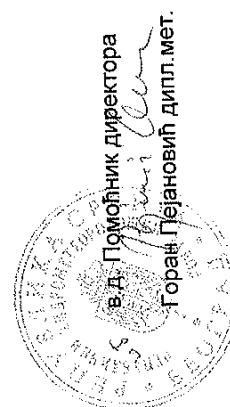
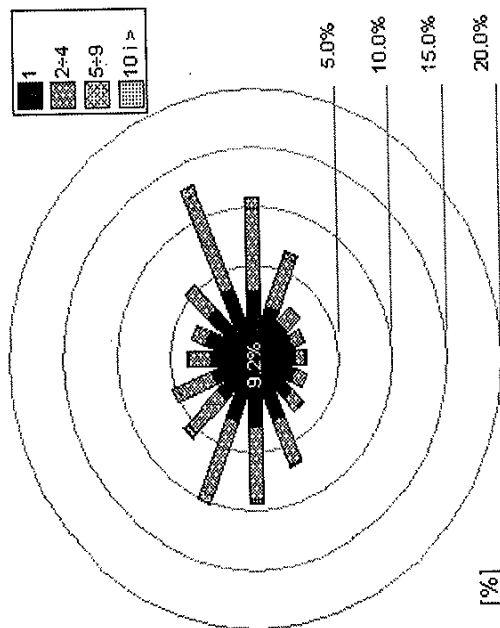
Рачунске вредности малих вода карактеристичних вероватноћа појаве

Бр	Назив станице	Водоток	Слив	Шифра	Одстојање од ушћа (km)	Кота "О" водомера (mm/lm)	Површина слива (km ²)	Qарsmin (m ³ /s) за одговарајуће вероватноће p(%)		
								50	80	99
1	Ср Митровица	Сава	Дунава	45090	139.2	72.22	87996	480	358	218

Метеоролошка станица Сремска Митровица

Ружа ветрова

Интервал брзина у m/s	S	SSE	SI	ISI	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Z	ZSZ	SZ	SSZ	Тишина	Износ
Тишина																					9.2	9.2
1	1.1	1.6	2.6	3.3	2.7	1.6	0.8	0.7	0.9	0.9	1.4	2.5	2.8	2.5	1.4	1.2						27.8
2-4	2	1.4	2.8	8.7	7.1	4.5	1.6	1.1	1	1.2	1.4	4.2	6.2	6.9	4	3.4						57.2
5-9	0.2	0.1	0.1	0.8	0.9	0.5	0.2	0+	0+	0.1	0.1	0.2	0.4	0.7	0.6	0.6						5.5
10 i >	0+	0+	0+	0+	0+	0	0	0	0	0	0+	0+	0+	0+	0+	0+						0.3
Збир	3.4	3.1	5.4	12.8	10.7	6.7	2.6	1.8	1.9	2.1	2.8	6.9	9.4	10.2	5.9	5.2					9.2	X



Страна 3/3

Annex 3

STAKEHOLDER ENGAGEMENT

ANNEX 3 STAKEHOLDER ENGAGEMENT

Identified Stakeholders

Stakeholders can be defined as those people and organisations who may affect, be affected by, or perceive themselves to be affected by, a decision or activity. For the Project, the stakeholders range according to the following main groups:

Potential affected parties:

- Employees of PWMC and Contractors;
- Representatives of companies operating the area immediately adjacent to the Project;
- Residents from settlements within the zone of influence of the Project
- Statutory regulatory authorities, on local or regional level, such as: Local landowners and leaseholders within Project easements; and potentially affected industries/businesses.

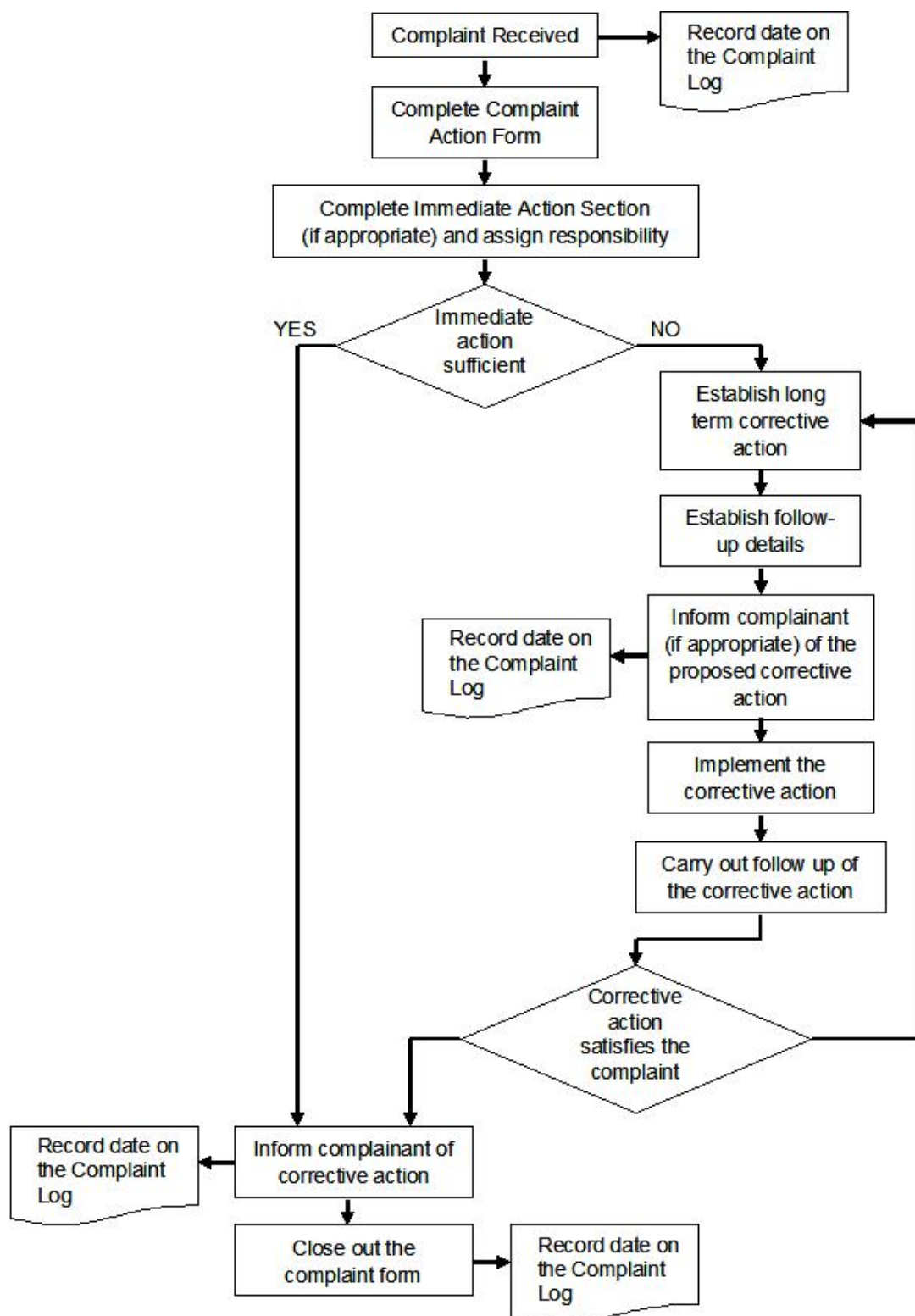
Interested parties:

- General public;
- Other companies operating on the National Grid; and
- Non-Governmental Organisations (NGO).

It is acknowledged that, as the Project develops, more stakeholders may be identified and engaged. In this regard, once identified, each stakeholder will be characterized in terms of their interests, concerns and requirements and will be included within this list.

Grievance mechanism and form

Flowchart of Complaints/Grievance Procedure



Grievances to be resolved within 15 working days.

SAVA AND DRINA RIVER CORRIDORS INTEGRATED DEVELOPMENT PROGRAM - SDIP
Environmental and Social Management Plan - ESMP

Grievance Reference Number (to be filled in by [name]):			
Contact Details	Name:		
	Address:		
	Tel:		
	e-mail:		
How would you prefer to be contacted? Please tick box	By post	By phone	By e-mail
Name and the identification information (from identity card).			
Details of your grievance. Please describe the problems, who it happened to, when, where and how many times, as relevant			
What is your suggested resolution for the grievance?			
How to submit this form to /[name of concessionaire]	By Post to:		
	By hand: please drop this form at		
	By e-mail: Please email your grievance, suggested resolution and preferred contact details to:		
Signature		Date	

Annex 4

REPORT ON PUBLIC CONSULTATIONS

ANNEX 4: REPORT ON PUBLIC DISCLOSURE AND PUBLIC CONSULTATION

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

Annex 5

EXCERPT FROM REGULATION ON ECOLOGICAL NETWORK

ANNEX 5: EXCERPT FOM REGULATION ON ECOLOGICAL NETWORK

REGULATION ON ECOLOGICAL NETWORK

("Official Gazette of RS", No 102/2010)

Annex 3 PROTECTION MEASURES FOR THE ECOLOGICAL NETWORK

- 1) the destruction and violation of habitats as well as the destruction and perturbation of wild species shall be prohibited;
- 2) the modification of area use with regard to natural and semi-natural vegetation (meadows, pastures, etc.)
- 3) the modification of morphological and hydrological features of areas on which the functionality of corridors depends shall be prohibited;
- 4) natural and semi-natural elements of corridors in compliance with landscape and vegetation features of the area shall be conserved and improved by means of planning of area use as well as by active protection measures;
- 5) encourage the traditional methods of use of space contributing to conservation and improvement of biodiversity;
- 6) measures ensuring prevention, i.e. reduction, control and rehabilitation of all forms of pollution shall be undertaken;
- 7) improve ecological corridors within civil engineering areas by setting up the continuity of green areas whereof structure and purpose shall support the functions of corridors;
- 8) technical-technological solutions for smooth movement of species shall be provided with regard to the spots of ecological corridors crossing with elements of infrastructure systems forming the barriers for species migration;
- 9) outside settlement zone the construction of facilities whereof purpose shall not be directly linked to water at the distance shorter than 50m from the coast of stagnant waters, i.e. from the line of intermediate waterflow.