Ministry of Agriculture and Environmental Protection
Directorate for Water Management
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FLOODS EMERGENCY AND RECOVERY PROJECT (FERP)

ENVIRONMENTAL MANAGEMENT PLAN (EMP)

for

Construction of flood protection system for Donji Ljubes settlement: Including reconstruction of the left bank embankment (16,7 km) of the river Juzna Morava with left bank protection (1,1 km)

DRAFT DOCUMENT 01
B E L G R A D E, April 2015

Table of contents:

ANNEXES:

Annex 1: Relevant National Legislation as of January 2015

Annex 2: Final Environmental Approval

Annex 3: Report on Public Disclosure and Public Consultation

Abbreviations

EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESMF	Environmental Management Framework Document
ESSS	Environmental and Social Safeguard Specialist
FERP	Floods Emergency Recovery Project
IFI	International Financing Institutions
MAEP	Ministry of Agriculture and Environmental Protection
OP	Operational Policy
PIU	Project Implementation Unit
PSC	Project Supervision Consultant
PWMC	Public Water Management Company
SSIP	Site Specific Implementation Plan
WB	The World Bank Group
WMP	Waste Management Plan

INTRODUCTION

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

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

1. FLOODS EMERGENCY RECOVERY PROJECT - DESCRIPTION

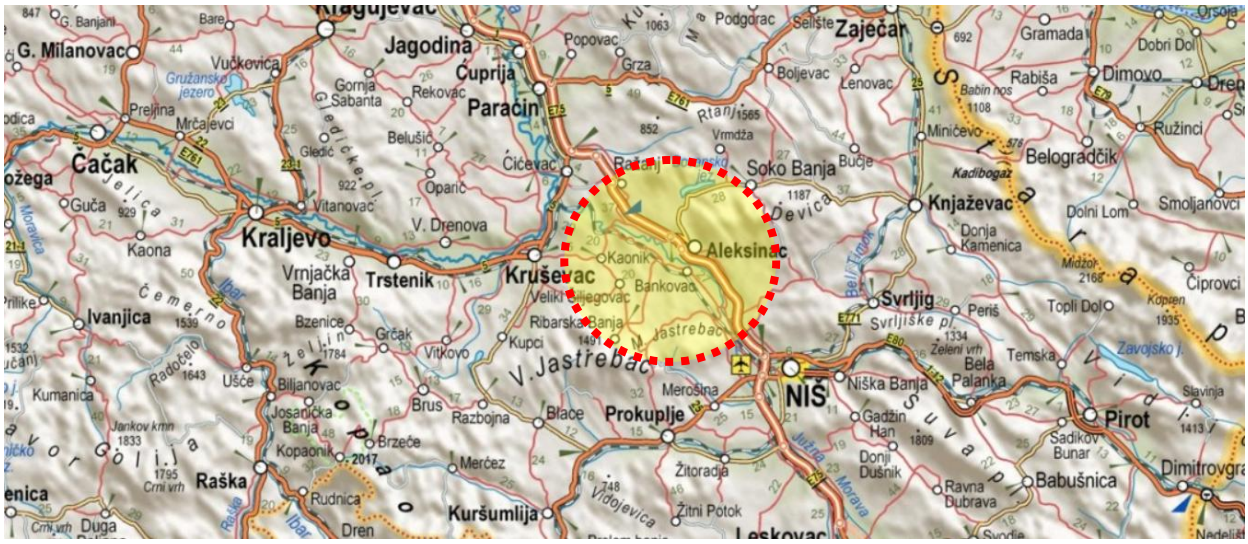
1.1. Background

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

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

1.2. Donji Ljubes Project Description

Flood Protection of Aleksinac area includes construction of flood protective system in Donji Ljubes area, starting from Vitkovac village and ending on Trnjane Village. Embankment construction works in total length of 16,7km are subject of this sub-project.



Picture 1: Project location, Aleksinac, Donji Ljubes region, River Juzna Morava

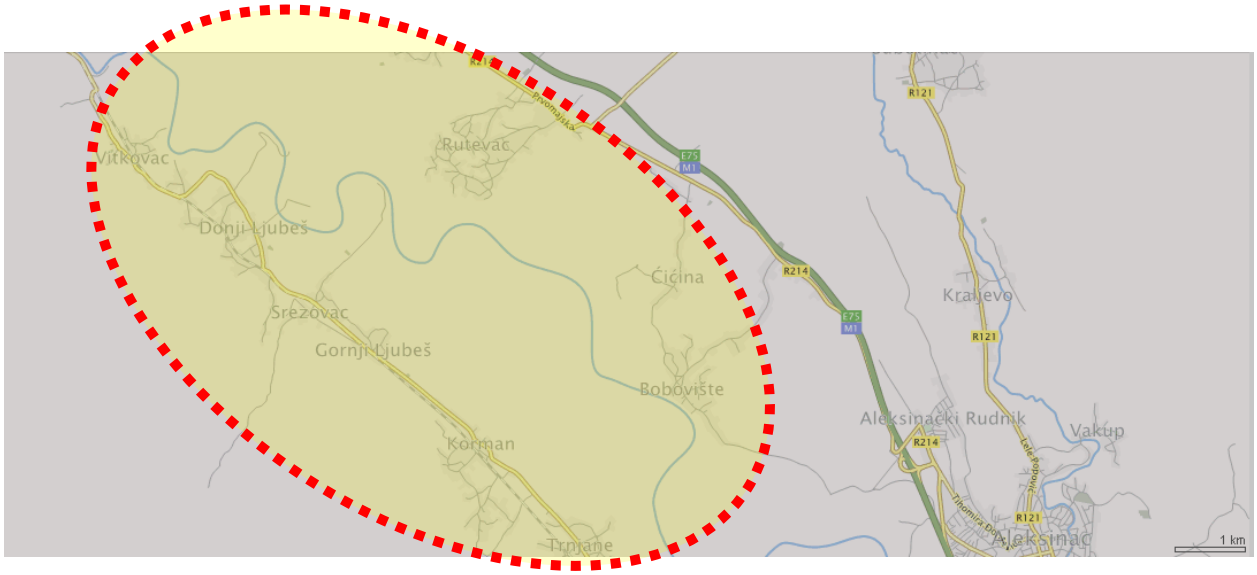
Construction of flood protection system for Donji Ljubes settlement includes reconstruction of the left bank embankment of the river Juzna Morava in total length of 16,7 km between Vitkovac and Trnjane settlements. Consisting part of the Project is also additional 1,1 km of left bank protection.

On this section, Juzna Morava is in its lower reaches, which are characterized by distinct meandering and often flooding the surrounding terrain, which causes great damage to agricultural production.

Regulation works in this area have not been implemented on a large scale, except three small, most vulnerable places.

On order to protect the village Vitkovac, the left bank of River Juzna Morava is stabilized by using rip-rap methodology (rock fill works).

In order to protect the area on the right bank of the Juzna Morava, a flood protection embankment was built to prevent spills of high water. The consequence was a reduction of flood plan area of South Morava river valley in relation to the earlier situation when large water flooded the entire valley, while in the present circumstances they are directed to the left bank flow.



Picture 2: Flooding area of Juzna Morava, section Vitkovac - Trnjane

To protect the area on the left bank of the Juzna Morava, a linear flood defence system is designed to prevent spills of high water. The system is designed in the form of left-coast embankment, from Vitkovac village to Trnjane village, Aleksinac municipality.

In order to ensure the material reserves for the construction of the embankment, a boring along the projected route was made. Clay material that satisfies the geotechnical conditions were found near Vitkovac cemetery and a well borrow pit is also found near Adrovac village.

1.2.1. Route description

The route of the left-coast embankment starts from the km. 30 to km. 46, respecting chainages of unregulated river bed, stretching through areas of following villages. Vitkovac, Korman, Gornji Ljubeš, Srezovac, Donji Ljubeš and Vitkovac.

The embankment consists of three sections:

- Section I, km 0 + 000 to km 2 + 888.88: section from the Gypsy stream in the village Vitkovac to Simin stream, with a total length of 2888.88 km, including the restrictor embankment along the Gypsy stream, which is extending to the railway embankment
- Section II, km 2 + 888.88 to km 11 + 589.69: section from Simin stream to Kormanska river
- Section III, km 11 + 589.69 to km 15 + 595.96: From Kormanska river to a high pitch in the zone of Trnjane village (former high coast of Juzna Morava)

<u>Section I, km 0 + 000 to km 2 + 888.88</u>

The route of the first section of the embankment begins at the embankment of the Belgrade - Skopje railway, crossing over the Gypsy creek. The first 550m of the route stretches along the existing right-coast embankment of Gypsy stream. The remaining portion extending along the current flow of the Juzna Morava river and is connected to the left-coast embankment of Simin stream.

Distance from the embankment axis to the left bank of the Juzna Morava is variable and is approximately 20m to 150m.

On the stretch of Vitkovac village, embankment is maximally close to the left bank of the river (20-35m), because it was required to be less arable land taken by flood plan.

Simin stream is regulated from railway line to flows into the Juzna Morava River. This regulation is performed by building embankments along the river, on which the projected left-coast embankment of Juzna Morava River is joined.

Section II, km 2+888,88 do km 11+589,69:

This section begins from right-coast embankment of the Simin stream and stretches along the left bank of the Juzna Morava river at a distance of 20 to 30m, up to the km 3 + 800th

In the sub-section from km 3 + 800 to km 4 + 450, average distance of the embankment from the left bank of the Juzna Morava river is 100m, because on this section regulation works are performed, so the route should follow the current river bed. In addition, the route position on this stretch was influenced by reasons related to the disordered position of the left bank of the flow, ensuring of borrow-pits and extending the Juzna Morava river valley.

From km 4 + 450 to km 5 + 600 embankment crosses the abandoned bed of the Juzna Morava river.

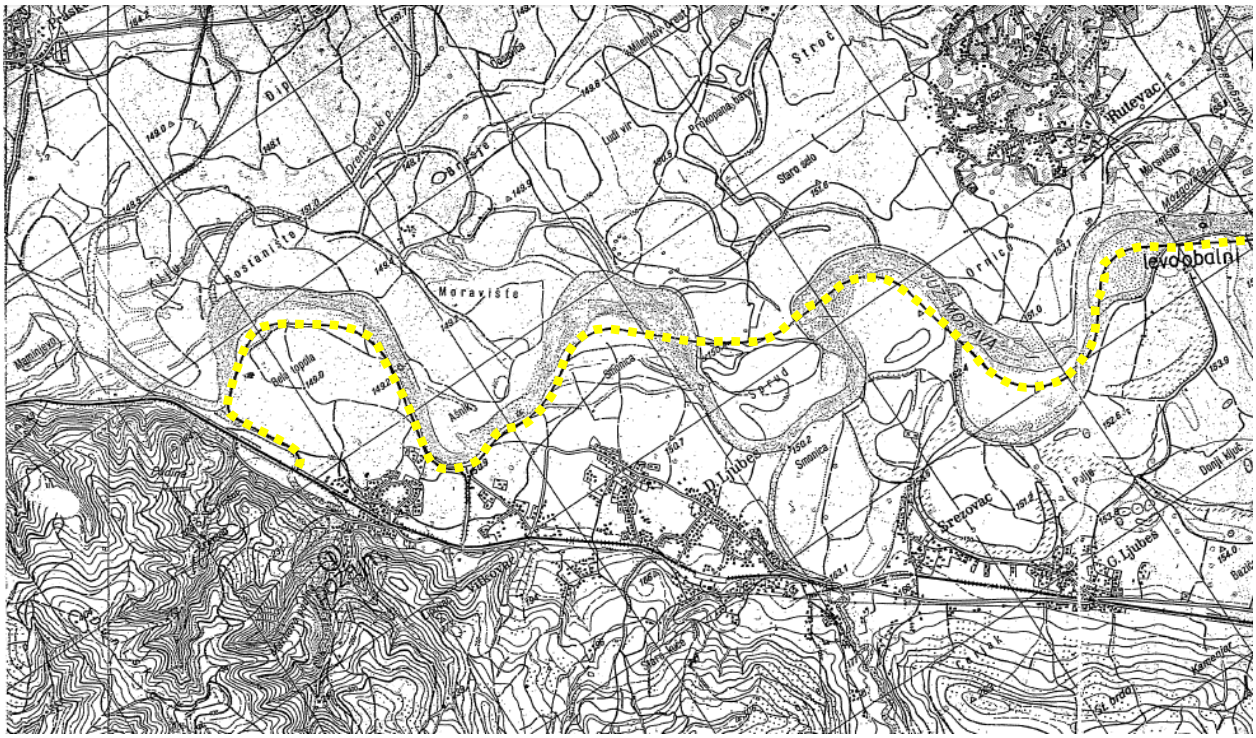
From km 5 + 600 to km 300 + 6 embankment follows the current river bed, which should remain in the same place once the regulation works are finished.

On the section from km 6 + 300 to km 7 + 700 embankment is approaching the left bank of the Juzna Morava River to a distance of 50m, while crossing the former bed of the Juzna Morava River.

From 7 + 700 to km 8+500 embankment is approaching conceptual route of regulated river bed, with 100m distance from the current river coast. On this part of the embankment passes over the sleeve of Juzna Morava River, which is currently working only during the occurrence of medium water.

On the section from km 8 + 500 to future flows of Kormanska river at km 11 + 589.69 embankment extends along the current river bed of the Juzna Morava River.

Kormanska river is not regulated throughout its entire course, which is the reason for the frequent flooding of the Juzna Morava valley on this section.



Proposed flood protection structure – earth embankment is marked with a yellow line

Section III, km 11+589,69 do km 15+595,96:

From the Kormanska River inlet at km 11 + 589.69 to km 13 + 000,00 designed left-coast embankment extends along the present coast of Juzna Morava river at a distance of 150-200m.

Within the remaining part from km 13 + 000 to km 15 + 595.96 (embankment involvement in a high pitch) embankment extends along the left bank of the present Juzna Morava river at a distance of 60m, which allows forming of the borrow pits.

1.2.2. Hydraulic design and dimensions of the flood protection structure

In order to determine the basic elements of the flood protection structure (embankment on the left bank of the Juzna Morava river in the area between the villages Vitkovac and Trnjane, Aleksinac municipality) an extensive hydraulic calculations are done and comprises the following:

- Analysis of the input data
- Hydraulic calculation of the water table level
- Dimensioning of the embankment

As the representative for the given section "Mojsinje" and "Aleksinac" gauging stations were selected, with a large water discharges of Q1 = 2518 m3 and Q2 = 2400 m3 / s.

Designed flood protection structure (embankment) is L=15594.97 m long, with average height of h = 2.71m, with slope gradients of 1: 2 and crown width b = 3.00m.

1.2.3. Geotechnical conditions

The project envisages that the embankment material should be taken from the borrow pits in its immediate vicinity.

On the basis of field investigations and laboratory tests, it was found that investigated terrain consists of alluvial sediments represented by the following members:

- Silty-clayey sand
- medium grain sand
- gravel

It is found that underground water exists too, which forms its free level in the gravel layer. The level of groundwater is at a depth of 0,90-2,90m from ground level and follows the water level of the Juzna Morava river bed.

Due to the impossibility of forming of borrow areas within the stretch km 0+000 to km 2+888.88, embankment will be constructed by using materials from borrow pits near the village Vitkovac.

Reconstruction of the embankment on Simin stream will be made by material from the same borrows areas.

At the section from the km 2+888,88 to km 3+800, embankment will be constructed by using a clay from the same borrow pit.

From km 3 + 800 to km 8+300 embankment will be constructed with material from the borrow pit near the village Vitkovac.

From km 8 + 300 to km 15 + 595.97 embankment will be constructed by using materials from borrow pit area at Adrovac village.

2. LEGAL AND INSTITUTIONAL FRAMEWORK

2.1. Relevant Institutions

The Ministry of Agriculture and Environmental Protection (MAEP), is the key relevant institution for environmental management for FERP related projects.

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

Directorate of Agrarian Payments (DAP) implements the Farm Incentives Program. Farmers applying for the program have to be registered in the Farm Registry to be eligible for support.

2.2. EIA procedure in the Republic of Serbia

In the juridical system of the Republic of Serbia, the Environmental Impact Assessment procedure is regulated by the Law on Environmental Impact Assessment, which is completely in line with European EIA Directive (85/337/EEC, 97/11/EC, 2003/35/EC and COM 2009/378). According to that Law, preparation of the Environmental Impact Assessment is not required for the flood protection rehabilitation projects unless their alignments are placed within or in the vicinity of the nature or culture protected areas. In such cases the Project Proponent is obliged to submit so-called “Request for Decision about Need for Environmental Impact Assessment” (RDNEIA) to the MAEP. 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 DoEIA.

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)
- Law on Environmental Impact Assessment (“Official Gazette of RS” No. 135/04)
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- The Law on Waste Management (“Official Gazette of RS” No. 36/09)
- The Law on Water (“Official Gazette of RS” No. 30/10, 93/12)
- The Law on Occupational Safety and Health (“Official Gazette of RS” No. 101/05)
- Law on Planning and Construction (“Official Gazette of RS” No. 72/09, 81/09)
- Law on Nature Protection, (“Official Gazette of RS” No. 36/09)
- Agricultural Land Law, (“Official Gazette of RS” No. 62/06, 41/09)

<u>Regulations established on the basis of the Law on EIA include the following:</u>

- Decree on establishing the List of Projects for which the Impact Assessment is mandatory and the List of projects for which the EIA can be requested (“Official Gazette of RS” No. 114/08)

- Rulebook on the contents of requests for the necessity of Impact Assessment and on the contents of requests for specification of scope and contents of the EIA Study ("Official Gazette of RS" No. 69/05)

2.4. Applicable Safeguards

Safeguard Policies triggered by the Donji Ljubes Project:

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

3. POTENTIAL ENVIRONMENTAL IMPACTS

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

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

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

- **Disposal of excavated materials and construction wastes**. Demolition debris and excessive soil are usually generated during the rehabilitation works on drainage and flood control systems;
- **Degradation of landscapes and soil erosion**. The impacts on vegetative cover will be short-term, localized, and totally associated with rehabilitation works;
- **Impacts from temporary access roads and work areas**. Establishment of temporary dirt roads to access work areas and temporary dumping sites for excavated materials can enhance soil erosion, and degrade the landscape;
- **Noise and vibration disturbances** during construction and temporary air pollution (dust) related to the transportation of construction materials and truck traffic. These impacts will occur during the construction and rehabilitation works, but will be only short-term. Effects include dust from construction activities, noise during trench excavation, possible effect of vibration caused by operation of heavy machinery, increased traffic in some sections of roads, etc.;
- **Safety hazards from construction activities**. No major hazards are expected the construction of the proposed project elements, as long as proper construction practices and safety procedures are applied;
- **Impacts on historic-cultural and archaeological monuments**. No archaeological or cultural resources are expected to be encountered during project implementation since major works consist in rehabilitation of existing systems where excavations have been conducted before and no findings have been reported.

3.1. Potential impacts of Donji Ljubes 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 property.

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. Thus, the volume of the retained water that could possibly influence the natural wave retardation in the river is negligible, compared to the volume of water wave, therefore 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 FERP Project

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

In case of unemployment and poverty in the project area, manpower resources will not be reduced. If some of the unemployed are employed or if employment has impact on unemployment, the project creates social benefits due to decreased social support or aid to the unemployed. That is the case in the flood emergency response project.

3.3. Potential negative Impacts and recommended Mitigation Measures

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

impact	Signifi-cance	comment
impacts on land use/ settlements,	low	There will be no land acquisition as defined by WB OP 4.01 during the project implementation. In case of any land acquisition – RFP document is prepared for this Project
ground and surface water,	low	Due to low amount of drainage water that can be potentially drained into any river the consequential impact is expected to be minimal to negligible
air quality,	low	Temporary impact. Local 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. Impact can be mitigated by following GEMM procedures
flora and fauna (protected areas and species),	low	Minimal loss or damage of vegetation and loss and damage or disruption to fauna can occur during works. Impacts can be offset or mitigated by following GEMM procedures. There will be no negative impacts on protected areas due to nature of works.
noise and vibration,	low	Only limited temporary impact during the rehabilitation phase. Mitigation measures in form of noise deflecting shields will be placed where the work-scheduling activities cannot have desired effect. Impact can be mitigated by following GEMM procedures.
soil quality,	low	Soil contamination can occur from: drainage of dredged materials, spillage of hazardous and toxic chemicals. Impact can be mitigated by following GEMM procedures
waste,	low	Health hazards and environmental impacts can happen due to improper waste management practices. Impact can be mitigated by following GEMM procedures

impact	Signifi-cance	comment
cultural and religious issues,	low	Regular rehabilitation activities could, if not properly managed, cause disturbance to the cultural and religious sites. Impact can be avoided by implementing EMP related measures.
cumulative impacts etc.	Medium/ moderate	Temporary, rehabilitation works may cause a slight increase of noise levels and air pollutants concentrations during the works only

- Pollution of water and soil because of improper disposal of excavated materials and construction wastes
- Loss of top soil due to temporary access roads and work areas, Landscape degradation
- Temporary air pollution (dust) related to the transportation of construction materials and truck traffic.
- Noise and vibration disturbances
- Staff safety

4. MITIGATION MEASURES AND ENVIRONMENTAL MONITORING ACTIVITIES

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

4.1. Mitigation Measures

4.1.1. General

The environmental impacts identified at this stage are preliminary in nature and will need to be further elaborated specifically (subproject wise) and potential for occurrence has to be ascertained during further stages of subproject design and implementation.

This section details out the potential environmental impacts of the sub-projects funded by WB under FERP.

4.1.2. Environmental Impacts and adequate 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 and will not disrupt drainage problems. 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 rehabilitation

activities with vegetation or with the appropriate surface treatments as soon as practicable following completion of activities.

Potential air pollution - Dust

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

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

Potential water contamination

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

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

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

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

Mitigation Measures - Integrated Pest Management Approach (IPM) is mandatory during project execution. Ensuring of appropriate selection and safe use of pesticides when they are needed by project demands related to safeguard OP 4.09 - Pest Management. Avoiding of use of pesticides that fall in WHO classes IA, IB or II.

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

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

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

- locate the garbage pit/waste disposal site min 500 m away from the residence so that peoples are not disturbed with the odour likely to be produced from anaerobic decomposition of wastes at the waste dumping places. Encompass the waste dumping place by fencing and tree plantation to prevent children to enter and play with. All solid waste will be collected and removed from the work camps and disposed in approval waste disposal sites.
- In case oil and grease are trapped for reuse in a minimum 60cm thick lined pit, care shall be taken to ensure that the pit should be located at the lowest end of the site and away from the residential areas.

- In case of filling of low-lying areas with wastes, it needs to be ensured that the level matches with the surrounding areas. In this case care should be taken that these low lying areas are not used for rainwater storage

Equipment maintenance and fuelling

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

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

Occupational Health and Safety

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

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

Noise

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

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

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

- Identify and locate on project plans any sensitive natural resources in the project area including but not limited to patches of natural habitat, bird colonies, and wetlands, unique plant communities etc. (consult with local nature protection authorities).
- Identify local access routes through and around cultivated land and pasture.
- Minimize requirements for temporary or permanent alteration of lands outside the embankment right of way.
- Dredging for embankment materials should occur only within marked navigation channels to minimize destruction of fish habitat.
- Provide for zones of preliminary accumulation of wastes that will cause no damage to the vegetation cover and other components of the environment.
- Transport and disposal of construction concrete rubbles, debris and spoils in approved paths and landfills/dump sites.
- Delineate access roads/ work areas carefully and prevent their expansion.
- Rehabilitate access roads and work areas after work completion (scratch soil with special engine, put fertile topsoil in place, etc.).

- Use closed/covered trucks for transportation of construction materials.
- Clean the surrounding area from dust by water sprinkling, removal of excess materials and cleaning of sites upon completion of activities.
- Restoration to quasi-original conditions of landscape after completion of construction and rehabilitation works.
- Arrange necessary preservation measures (establish protection zones, by-pass these areas during transportation and other).
- Cease the works as soon as historical and cultural monuments are encountered during earthworks and provide relevant information to the State Agency for Historical and Cultural Monuments Protection.
- Conduct mid-term and end-of-project inspections to the sites during construction and rehabilitation works.

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

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

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

4.2. Mitigation Plan for FERP Sub-Project Donji Ljubes

Phase	Problem/activity impact	Mitigation measures	Costs		Institutional responsibility		Comment
			Planning	implementation	Planning	implementation	
Planning/ Designing	Assure compliance with relevant construction field legislation	Acquire construction permit Provide Water management guidelines if subprojects are executed near surface watercourses,	n/a	n/a	Project applicant	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.	n/a	n/a	Designer	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.	n/a	n/a	Project applicant	Contractor	Problems should be regulated through tender documentation.
Rehabilitation/ Reconstruction/ Repair	Supply of material	Use the existing quarries, asphalt and concrete bases for the supply of material Use licenced suppliers for other materials	n/a	n/a	Contractor	Contractor	Borrow pits from which materials of asphalt 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.	n/a	n/a	Contractor	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	n/a	n/a	Contractor	Contractor	Problems should be regulated through the Works execution contract.

Phase	Problem/activity impact	Mitigation measures	Costs		Institutional responsibility		Comment
			Planning	implementation	Planning	implementation	
Rehabilitation/ Reconstruction/ Repair	Emissions of dust from the landfill of earth material, due to vehicles' movement on macadam roads and construction works execution.	Compact deposited earth material. Sprinkle dust sources with water in order to reduce impacts on the surrounding population and vegetation. Control the speed of vehicles in order to reduce dust rising. Prepare and implement a Plan for construction site organisation that includes good construction practices.	n/a	n/a	Contractor	Contractor	Problems should be regulated through the Works execution contract.
Rehabilitation/ Reconstruction/ Repair	Emission of gases and particles from vehicles, mechanisation and generators.	Regular equipment maintenance. The contractor is obliged to submit evidence of vehicle roadworthiness in line with the regulations on hazardous gases emission. Prepare and implement the Construction Site Organisation Plan that incorporates good construction practice measures.	n/a	n/a	Contractor	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.	n/a	n/a	Contractor	Contractor	Problems should be regulated through the Works execution contract.

Phase	Problem/activity impact	Mitigation measures	Costs		Institutional responsibility		Comment
			Planning	implementation	Planning	implementation	
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 turbid and watercourses discontinued. Works should be executed in dry weather. Prepare and implement a Construction Site Organisation	n/a	n/a	Contractor	Contractor	Problems should be regulated through the Works execution contract.
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.	n/a	n/a	Contractor	Contractor	Problems should be regulated through the Works execution contract.

Phase	Problem/activity impact	Mitigation measures	Costs		Institutional responsibility		Comment
			Planning	implementation	Planning	implementation	
Rehabilitation/ Reconstruction/ Repair	Water and soil pollution due to inadequate disposal of communal, inert and hazardous waste.	Typical containers for solid communal waste are placed at the construction site locations; Acceptance of collected communal waste and its disposal by authorised institutions; Hazardous waste fractions (used waste oils, oiled packaging, bitumen agents waste, waste transformer oils, waste asbestos-cement pipes etc.) are separately collected into typical containers or metal barrels; they are to be consigned to entities authorised for hazardous waste management; Re-usage and recycle of waste whenever possible. It is prohibited to incinerate waste in the open and at the location. Actions in line with the waste management report.	n/a	n/a	Contractor	Contractor	Problems should be regulated through the Works execution contract.
Rehabilitation/ Reconstruction/ Repair	Reconstruction of damaged brides	Avoid driving on the riverbank or river; Ensure riverbed and bank in the zone of bridges, upstream and downstream from bridges, as to ensure their protection from erosion processes.	n/a	n/a	Contractor	Contractor	Problems should be regulated through the Works execution contract.

Phase	Problem/activity impact	Mitigation measures	Costs		Institutional responsibility		Comment
			Planning	implementation	Planning	implementation	
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.	n/a	n/a	Contractor	Contractor	Problems should be regulated through the Works execution contract.
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	n/a	n/a	Contractor	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 form the construction site both in the construction phase and after works completion, when closing the construction site. Assure medical supplies and aid through institutional and administrative arrangements with municipal hospitals at the construction site Implement the Construction Site Organisation Plan.	n/a	n/a	Contractor	Contractor	Problems should be regulated through the Works execution contract.

Phase	Problem/activity impact	Mitigation measures	Costs		Institutional responsibility		Comment
			Planning	implementation	Planning	implementation	
Rehabilitation/ Reconstruction/ Repair	Risk of injuries at work.	Demand from all workers to abide by the Protection at work measures; Provide protective equipment; Install warning signs at the construction site; Prepare and implement the Construction Site Organisation Plan and Protection at work measures plan.	n/a	n/a	Contractor	Contractor	Problems should be regulated through the Works execution contract.
Construction site closure	Construction material leftovers of 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 re-used/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.	n/a	n/a	Contractor	Contractor	Problems should be regulated through the Works execution contract.

Summary of Potential Environmental Impacts and Mitigation Measures

POTENTIAL IMPACTS	STAGE / MECHANISM	MAGNITUDE	DURATION	SUGGESTED MITIGATION MEASURE	RESIDUAL EFFECT	RESPONSIBILITY	TIMING	COSTS
HYDROLOGY & HYDROGEOLOGY Changes to surface and ground water quantity and quality	Construction Activities	Negligible	Construction Period	No mitigation measures required.	None	Not applicable.	-	-
	Operation and Maintenance	Negligible	Lifespan of embankment	No mitigation measures required.	None	Not applicable.	-	-
SOILS Erosion or compaction of soils	Construction Activities	Minor	Construction Period	• Salvage of topsoil and sod for reclamation following completion of the works.	None	Contractor & Local Water Authority	During and at completion of construction. Periodic monitoring until reclamation criteria achieved.	Included in the bill of quantity
	Operation and Maintenance	Negligible	Lifespan of embankment	No mitigation measures required.	None	Local Water Authority	-	-
AQUATIC RESOURCES Disturbance of wetlands or fish habitat	Construction Activities	Minor	Construction Period	• Follow approved dredging practices. • Minimize disturbance to riparian wetlands.	None	(Ministry or Directorate responsible for fish management) Institute for Nature Conservation (in protected areas)	During dredging.	-
	Operation and Maintenance	Negligible	Lifespan of embankment	No mitigation measures required.	None	Not applicable.	-	-

POTENTIAL IMPACTS	STAGE / MECHANISM	MAGNITUDE	DURATION	SUGGESTED MITIGATION MEASURE	RESIDUAL EFFECT	RESPONSIBILITY	TIMING	COSTS
VEGETATION Disturbance to vegetation communities, tree removal	Construction Activities	Minor	Construction Period	• Locate borrow pits and sand drainage areas to minimize new areas of disturbance. • Utilize existing disturbed areas whenever possible.	Removal of some trees and vegetation	Tendering agency/ local water authority	Detailed design (tender specification).	Included in the bill of quantity
	Operation and Maintenance	Negligible	Lifespan of embankment	No mitigation measure required.	None	Not applicable.	-	-
WILDLIFE Disturbance and dislocation from habitat	Construction Activities	Minor	Construction Period	• Schedule construction to minimize disturbance to nesting birds.	None	Tendering agency.	Detailed design (tender specification)	
	Operation and Maintenance	Negligible	Lifespan of embankment	No mitigation measures required.	None	Not applicable.	-	-
POLLUTION Fuel spills or improper waste disposal	Construction Activities	Minor	Construction Period	• Equipment free from leaks and in good operating condition. • Refuel at least 15 m away from surface water. • Prompt clean-up of fuel spills. • Solid and human waste management plan for the construction site.	None	Tendering agency/ local water authority/ contractor	Construction start-up and construction period. (condition of tender)	Normal construction cost(Included in the bill of quantity)
	Operation and Maintenance	Negligible	Lifespan of embankment	No mitigation measures required.	None	Not applicable.	-	-

5. MONITORING ACTIVITIES

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

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

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

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

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

Elements of an environmental performance-monitoring program:

Objectives

Indicators linked to project impacts and mitigation measures

Measured parameters

Institutional responsibilities, timing

Reporting arrangements

Cost and financing provisions

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

5.1. Monitoring Plan for FERP Sub-Projects Donji Ljubes

Phases	Monitoring parameter	Monitoring location	Monitoring manner / monitoring equipment	Monitoring time – measurement frequency or permanently	Why is monitoring necessary	Costs		Responsibility	
						Planning	Implement.	Planning	Implement.
Supply of material	Possession of environmental permits for plants of quarries, asphalt and concrete bases from which material is supplied	Legal entities that own the plants	Insight into the documentation	During material supply	Assure that the plant conforms to the requirements of environment protection, health protection and human safety		Incorporated into the supervision implementation costs	Supervising body	Supervising body
Transport of material	If trucks are covered during powdered material transport	At the construction site and transport roads	Visual supervision	During material transport	See that no dust is emitted into the air and material spilled into environment		Incorporated into the supervision implementation costs	Supervising body	Supervising body
Rehabilitation/ Reconstruction/ Repair	Degradation and soil pollution	At the construction site and directly around the construction site	Visual supervision	Weekly	To establish if liquid oil derivatives leaked, soil erosion and landslide occurred due to construction works		Incorporated into the supervision implementation costs	Supervising body	Supervising body
Rehabilitation/ Reconstruction/ Repair	Does the construction site meet the criteria from the guidelines for good construction practice	At the construction site	Visual supervision, insight into the documentation.	During the works execution	To assure environment protection and prevent the occurrence of incident situations at the construction site.		Incorporated into the supervision implementation costs	Supervising body	Supervising body

Phases	Monitoring parameter	Monitoring location	Monitoring manner / monitoring equipment	Monitoring time – measurement frequency or permanently	Why is monitoring necessary	Costs		Responsibility	
						Planning	Implement.	Planning	Implement.
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	In order to establish the level of air pollution and noise and make comparison with legal limit values. In case of aberration additional mitigation measures.		1100 KM/ per measurement spot	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	In order to establish that works are only executed at project-envisaged locations		Incorporated into the supervision implementation costs	Supervising body	Supervising body
Rehabilitation/ Reconstruction/ Repair	Working hours control.	At the works execution location	Visually and comparison with the construction site organisation plan.	Upon received citizens' complaints	In order to establish that working hours and noise emission limitations are observed during daily working hours.			Supervising body	Supervising body
Rehabilitation/ Reconstruction/ Repair	Waste management during the works execution	At the construction site	Visually and by comparison with the waste management report.	Permanently	Are containers/bins for communal waste installed, is hazardous waste treated in adequate manners, in order to prevent uncontrolled waste disposal		Incorporated into the supervision implementation costs	Contractor	Supervising body

Phases	Monitoring parameter	Monitoring location	Monitoring manner / monitoring equipment	Monitoring time – measurement frequency or permanently	Why is monitoring necessary	Costs		Responsibility	
						Planning	Implement.	Planning	Implement.
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	In order to establish that protection at work measures are implemented.		Incorporated into the supervision implementation costs	Contractor	Supervising body
Rehabilitation/ Reconstruction/ Repair	Impact on population due to the limitation of business activity and right to use land	Local community	Insight into the register	Upon received citizens' complaints	In order to timely prevent impact		Incorporated into the supervision implementation costs	Project applicant	Project applicant
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	Poor monitoring and works execution quality assessment can cause damages to environment, bad quality structures and usage of poor quality material, can result in damages to structures and expose inhabitants to risks and possible accidents		Incorporated into the supervision implementation costs	Contractor	Supervising body
Construction site closure	Waste remnants and soil degradation	At the project location	Visually	After the works completion	In order to establish whether all waste was removed from the construction site whether field was restored		Incorporated into the supervision implementation costs	Contractor	Supervising body

POTENTIAL NEGATIVE IMPACT	MONITORING PARAMETER	MONITORING SITE	MONITORING TYPE /EQUIPMENT	TIMING	RESPONSIBLE PARTY
Pollution of water and soil because of improper disposal of excavated materials and construction wastes	Existence of zones/sites for preliminary accumulation of wastes	At and near work site	Inspection	During construction works	Contractor, Supervisor Engineer
Loss of top soil due to temporary access roads and work areas, Landscape degradation	Clear delineation of access roads and work sites to prevent their expansion	At access roads and work sites	Inspection, Observation	During construction works	Contractor, Supervisor Engineer
	Cleaning of access roads and work sites after construction works completion	At access roads and work sites	Inspection, Observation	After construction works	Contractor, Supervisor Engineer
	Restoration of landscape to quasi-original condition after completion of works and after use of quarries	At work site and quarries	Unannounced Inspection	After works completion.	PIT Environmental Specialist
Temporary air pollution (dust) related to the transportation of construction materials and truck traffic	Sprinkling of water to suppress the dust	At access roads and work sites	Inspection, Observation	During construction works	Contractor, Supervisor Engineer
Noise and vibration disturbances	Termination of construction works at the established time (e.g. work on daylight hours)	At access roads and work sites	Inspection, Observation	During construction works	Contractor, Supervisor Engineer
	Measure noise levels (Db)	At and near the work site	Inspection	During construction works	Contractor, Supervisor Engineer
Staff safety	Use of protective equipment, organization of by-passing traffic	At work site	Inspection	During construction works	Contractor, Supervisor Engineer
Degradation of the canal	O & M	At work site	Regular supervision inspection	During canal operation	PWMC:”Srbijavode”, “Vode Vojvodine”, “Beogradvode”

6. ENVIRONMENTAL MANAGEMENT RESPONSIBILITIES

For each potential impact the EMP identifies:

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

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

6.1. Environmentally sound clauses for civil works contracts

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

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

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

7. IMPLEMENTATION ARRANGEMENTS

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

8. MONITORING AND REPORTING ARRANGEMENTS

8.1. FERP Project Monitoring

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

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

8.2. Environmental Monitoring Plans

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

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

8.3. Reporting Arrangements

8.3.1. Contractor to PIU

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

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

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

8.3.2. Project Supervision Consultant to PIU

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

8.3.3. PIU to MAEP, WB, Annual Environmental & Social Report

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

9. PUBLIC CONSULTATIONS AND PUBLIC DISCLOSURE OF THE EMP

Draft version of EMP will be publicly disclosed in the Ministry of Agriculture and Environmental Protection the Directorate of Water building during March 2015, on period of two weeks.

10. REFERENCES

1 Detailed design – Left-Coast Protection Embankment on Juzna Morava River, section Vitkovac - Trnjane, DVP “Smederevo”, October 2010

2 Environmental Assessment Sourcebook No 25, Environmental Management Plans, The World Bank Environment Department, January 1999

3 Project Appraisal Document, PAD1129, Serbia - Floods Emergency Recovery Project, September 2014

4 Integrated Safeguards Data Sheet, ISDSA1019, Integrated Safeguards Data Sheet (Appraisal Stage) - Floods Emergency Recovery Project - P152018, September 2014

5 Project Information Document, PIDA12087, Project Information Document (Appraisal Stage) - Floods Emergency Recovery Project - P152018, September 2014

6 Environmental and Social Management Framework, ESMF, Floods Emergency Recovery Project - P152018, February 2015

7 Resettlement Policy Framework, RPF, Floods Emergency Recovery Project - P152018, February 2015

Annex 1

LEGISLATION

MAIN SERBIAN LEGISLATION:

ANNEX 1: RELEVANT NATIONAL LEGISLATION AS OF JANUARY 2015

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)
2. Law on nature protection ("Official Gazette of RS", 36/09)
3. Law on environmental protection ("Official Gazette of RS" No. 135/04, 36/09, 72/09)
4. Law on EIA ("Official Gazette of RS" No. 135/2004, 36/2009)
5. Law on Strategic EIA ("Official Gazette of RS" No. 135/2004)
6. Law on waste management ("Official Gazette of RS", 36/09)
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)
9. Law on forest ("Official Gazette of RS", 46/91, 83/92, 54/93, 60/93, 53/93, 67/93, 48/94, 54/96, 101/05)
10. Law on air protection ("Official Gazette of RS", 36/09)
11. Law on Safety and Health at Work ("Official Gazette of RS", 101/05)

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

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

Other relevant Serbian legislation

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Annex 2

FINAL ENVIRONMENTAL APPROVAL

Annex 2: Final Environmental Approval

Р е п у б л и к а С р б и ј а
ОПШТИНА АЛЕКСИНАЦ
Општинска управа
Одељење за привреду
Одсек за урбанизам, стамбено комуналну делатност и заштиту животне средине
III/07 Број: 5010-6/15
14.03.2015.године
А л е к с и н а ц

Општинска управа општине Алексинац, Одељење за привреду, Одсек за урбанизам и стамбено комуналну делатност и заштиту животне средине, на основу члана 10. став 4. и став 6. Закона о процени утицаја на животну средину ("Сл. гласник РС", бр. 135/04 и 36/09) и члана 192. став 1. Закона о општем управном поступку ("Службени лист СРЈ" бр. 33/97,31/01 и "Сл. гласник РС" бр. 30/10), решавајући по поднетом захтеву носиоца пројекта Јавног водопривредног предузећа "Србијаводе" Београд, Водопривредни центар "Морава" Ниш, за одлучивање о потреби процене утицаја на животну средину Пројекта "Изградња левообалног насипа на Јужној Морави у дужини од 15,6km, у атару села Витковац, Доњи Љубеш, Срезовац, Горњи Љубеш, Корман и Трњане", на територији општине Алексинац, односно на КП бр. 3823 КО Витковац, КП бр. 5090 КО Доњи Љубеш, КП бр. 534 КО Срезовац, КП бр. 950 КО Горњи Љубеш, КП бр. 6320 КО Корман и КП бр. 9478 КО Трњане, доноси

Р Е Ш Е Њ Е

1. Утврђује се да за Пројекат "Изградња левообалног насипа на Јужној Морави у дужини од 15,6km, у атару села Витковац, Доњи Љубеш, Срезовац, Горњи Љубеш, Корман и Трњане", носиоца пројекта Јавног водопривредног предузећа "Србијаводе" Београд, Водопривредни центар "Морава" Ниш , **није потребна процена утицаја на животну средину.**

2. Утврђују се минимални услови заштите животне средине:

- У фази реализације Пројекта, односно извођења радова на изградњи одбрамбеног насипа у складу са Решењем о издавању водне сагласности које је издало Министарство пољопривреде и заштите животне средине, Републичка дирекција за воде дана 19.03.2015. године под бр. 325-04-00122/2015-07, неопходно је поштовати техничку документацију, важеће прописе, водне услове и нормативе за ову врсту радова, а у смислу заштите животне средине нарочито: Ради праћења стања водних објеката и заштите вода и заштите од штетног дејства вода радове на изградњи изводити тако да се не ремети режим вода у водотоку, односно под сталним надзором ЈВП "Србијаводе" Београд, ВПЦ "Морава" Ниш; За време извођења радова, без обзира на динамику изградње, не реметити нормално функционисање постојећих водних објеката, не наносити штете и оштећења и не нарушавати постојећи водни режим; За време извођења радова не сме се депоновати материјал у корито водотока, а по завршетку радова сав евентуално заостали материјал уклонити ван корита водотока, терен испланирати, а евентуално оштећене објекте довести у првобитно функционално и безбедно стање; Водити рачуна и обезбедити услове да не дође до замућења и погоршања квалитета вода низводно од предвиђених радова и предвидети могућност узорковања воде ради контроле квалитета.
- Поред наведених мера носилац пројекта дужан је да приликом извођења радова обезбеди: Да буду изграђени пројектовани контролисани пропусти којима ће се између осталог омогућити миграторно кретање водених животиња из Јужне Мораве у притоке и остатке старог корита; Да не долази до хаваријског исцуривања горива и мазива из механизације и транспортних средстава као и да приликом евентуалног исцуривања врши прописно уклањање контаминираног слоја земљишта и предавање оператеру са одговарајућом дозволом за управљање овом врстом отпада; Да сав комунални отпад који ће настајати као последица боравка радника током изградње буде организовано уклањан са локације и збринут у договору са локалним комуналним предузећем одлагањем у постојеће контејнере у насељеним местима дуж трасе насипа или прикупљањем у сопственим одговарајућим посудама уз уговарање организованог одвоза на општинску депонију возилима ЈКП-а или сопственим транспортним

1

средствима; Да се са трасе одбрамбеног насипа и материјалног рова који ће бити формиран дуж трасе насипа уклања плодни хумусни слој и исти користити за спољашње уређење насипа, односно затрављивање круне и косина насипа одабраним смешама трава које се бокоре и имају дубок корен, које се уклапају у пејзаж, а које нису инвазивне или алергене врсте; Да по завршетку радова на изградњи уклони све привремене објекте (помоћни радни и санитарни објекти градилишта, за паркирање механизације и складиштење средстава рада и горива) укључујући и привремене путеве који ће бити изграђени у току изградње насипа и земљиште врати у првобитно стање; Да уколико у границама предметног Пројекта наиђе на геолошка или палеонтолошка документа (фосили, минерали, кристали и др.), која би могла представљати заштићену природну вредност, у складу са одредбама Закона о заштити природе, у року од осам дана од проналаска о налазу обавести министарство надлежно за послове заштите животне средине и предузме мере заштите од уништења, оштећивања или крађе до доласка овлашћеног лица.

- У току рада Пројекта носилац пројекта дужан је да се стара о стању уређеног зеленила на траси одбрамбеногх насипа, као и о стању контролисаних пропуста који ће се између осталог омогућавати миграторно кретање водених животиња из Јужне Мораве у притоке и остатке старог корита;

- Носилац пројекта је дужан да одмах, а најкасније у року од 24 часа, обавести органе јединице локалне самоуправе надлежне за послове заштите животне средине о ванредном догађају који може имати значајне последице по животну средину;

О б р а з л о ж е њ е

Носилац пројекта Јавно водопривредно предузеће "Србијаводе" Београд, Водопривредни центар "Морава" Ниш, обратио се дана 02.04.2015. године, овом органу захтевом (зав. под бр. 5010-6/15) за одлучивање о потреби процене утицаја на животну средину Пројекта "Изградња левообалног насипа на Јужној Морави у дужини од 15,6km, у атару села Витковац, Доњи Љубеш, Срезовац, Горњи Љубеш, Корман и Трњане", на територији општине Алексинац

У складу са чл. 10. и чл. 29. Закона о процени утицаја на животну средину ("Сл. гласник РС", бр. 135/04 и 36/09) извршено је обавештавање заинтересованих органа, организација и јавности о поднетом захтеву објављивањем обавештења 02.04.2015. године на локалној телевизији АЛТ (ЈНИРТВП "Реч радника" Алексинац), истицањем обавештења на огласној табли Општинске управе општине Алексинац, а посебно су обавештења достављена месном заједницама Витковац, Доњи Љубеш, Срезовац, Горњи Љубеш, Корман и Трњане ради истицања на огласним таблама наведених месних заједница. Посебно су писмено обавештени као потенцијално заинтересовани органи ЈП Дирекција за урбанизам и изградњу општине Алексинац и ДОО Јужна Морава 2" Ниш које газдује наведеним риболовним подручјем. Није вршено посебно достављање обавештења Л.У. "Срндаћ" из Житковца које управља ловиштем дуж трасе планираног одбрамбеног насипа јер је позитивно мишљење истог достављено у прилогу предметног захтева. У периоду предвиђеном за увид у податке и документацију из захтева носиоца пројекта и достављање мишљења заинтересованих органа и организација и заинтересоване јавности, није било заинтересованих за увид, а органу нису достављана мишљења у писменој форми.

Увидом у достављену документацију уз захтев и по спроведеном поступку разматрања захтева, овај орган је утврдио да за предметни пројекат, није потребна процена утицаја на животну средину.

Анализом карактеристика локације, карактеристика предметног пројекта и могућих утицаја на животну средину, а узимајући у обзир прописане критеријуме за пројекте наведене у Листи II Уредбе о утврђивању Листе пројеката за које је обавезна процена утицаја и Листе пројеката за које се може захтевати процена утицаја на животну средину ("Сл. гласник РС", бр. 114/08), као и чињеницу да у поступку није било заинтересованих, овај орган утврдио је као главне разлоге за доношење овог решења:

1. Пројекат се изводи у складу са Просторним плану општине Алексинац ("Службени лист општине Алексинац", бр. 4/11), а на основу истог је 24.11.2014. године носиоцу пројекта издато Решење о локацијској дозволи за предметни Пројекат.

2. На простору предвиђеном за изградњу одбрамбеног бедема и у његовој близини нема заштићених природних добара, а сам одбрамбени бедем представља услов за заштиту животне средине на овом простору јер ће истим бити спречено плављење, а самим тим и одношење плодног површинског слоја земљишта у брањеном подручју, спирање хемиских средстава која се користе у пољопривреди и загађују воде, као и засипање пољопривредног земљишта неквалитетним материјалом и отпадом који се задржава након плављења, такође ће бити спречено причињавање штете на ловној дивљачи и рибљем фонду које настају због потапања ловишта која постоје дуж Јужне Мораве, односно због изношења рибе током поплава на пољопривредно земљиште где после повлачења воде риба остаје и угињава или чешће постаје лака мета рибокрадица.
3. Овим решењем утврђени су минимални услови и мере заштите животне средине, уз чију примену се не очекују значајни негативни утицаји на животну средину и здравље људи у току изградње предметног одбрамбеног бедема.

За захтев за одлучивање о потреби процене утицаја на животну средину плаћена је републичка административна такса од 1.890,оо динара по Тарфном броју 186. Закона о републичким административним таксама ("Сл. гласник РС", бр. 5/09, 54/09, 50/11 и 70/11) и усклађеним динарским износима из Тарифних републичких административних такси ("Сл. гласник РС" бр. 57/14).

У складу са чланом 29. Закона о процени утицаја на животну средину ("Сл. гласник РС", бр. 135/04 и 36/09) овај орган ће извршити обавештавање заинтересованих органа, организација и јавности о донетој одлуци. Трошкове обавештавања и учешћа јавности према члану 33. Закона о процени утицаја сноси носилац пројекта.

Поука о правном средству: Против овог решења носилац пројекта може изјавити жалбу другостепеном органу у року од 15 дана од дана пријема овог решења. Жалба се предаје преко овог органа у три примерка са доказом о уплати републичке административне таксе у износу 430,оо динара.

Решење доставити: Носиоцу пројекта, инспектору заштите животне средине Општинске управе општине Алексинац и а/а.

Обрађивач предмета:
Владимир Никодијевић

НАЧЕЛНИК ОДЕЉЕЊА
Љубица Војиновић

3

Annex 3

REPORT ON PUBLIC CONSULTATIONS

ANNEX 3: REPORT ON PUBLIC DISCLOSURE AND PUBLIC CONSULTATION

To be completed after Public Consultations