

**ENVIRONMENTAL AND SOCIAL
MANAGEMENT PLAN FOR THE
PROJECT OF THE REHABILITATION
OF THE BRIDGE OVER THE PLIVA
RIVER**

July, 2017

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LIST OF ABBREVIATIONS

<i>BH</i>	- <i>Bosnia and Herzegovina</i>
<i>CFD</i>	- <i>Central Feedback Desk</i>
<i>CSOP</i>	- <i>Construction Site Organization Plan</i>
<i>EIB</i>	- <i>European Investment Bank</i>
<i>EIA</i>	- <i>Environmental Impact Assessment</i>
<i>EMP</i>	- <i>Environmental Monitoring Program</i>
<i>ESMF</i>	- <i>Environmental Social Management Framework</i>
<i>ESMP</i>	- <i>Environmental and Social Management Plan</i>
<i>EP</i>	- <i>Environmental Permit</i>
<i>FBH</i>	- <i>Federation of Bosnia and Herzegovina</i>
<i>FMoET</i>	- <i>Federal Ministry of Environment and Tourism</i>
<i>CBC</i>	- <i>Central Bosnia Canton</i>
<i>IFI</i>	- <i>International Financial Institutions</i>
<i>MP</i>	- <i>Main project</i>
<i>MPCA</i>	- <i>Management Plan in Case of Accidents</i>
<i>OP</i>	- <i>Operational Policy of the World Bank</i>
<i>PAP</i>	- <i>Project Affected Person</i>
<i>PPE</i>	- <i>Personal Protective Equipment</i>
<i>PCRoadsFBH</i>	- <i>Public Company Roads of the Federation of Bosnia and Herzegovina</i>
<i>RAP</i>	- <i>Resettlement Action Plan</i>
<i>RPF</i>	- <i>Resettlement Policy Framework</i>
<i>TD</i>	- <i>Tendering Documentation</i>
<i>TMP</i>	- <i>Traffic Management Plan</i>
<i>WB</i>	- <i>World Bank</i>
<i>WMP</i>	- <i>Waste Management Plan</i>
<i>AEHS</i>	- <i>Annual Environmental Health and Safety</i>

EXECUTIVE SUMMARY

INTRODUCTION AND OBJECTIVES OF THE ESMP

This Project of the Rehabilitation of the Bridge over the Pliva River (the Project) for which this ESMP is developed, is one of the sub-projects under the FBH Road Sector Modernization Project co-financed by the WB and EIB. *Rehabilitation of the Bridge over the Pliva River, on the road M-5, section Rogolje – Jajce Jug*, is screened as a category B project according to the Operational Policy (OP 4.01 on Environmental Assessment) of the WB as well as the screening procedure outlined in the project-specific ESMF. As such, this activity needs to have an ESMP developed, whereas pursuant to the local legislation in force, this project does not require a water permit, an environmental assessment or an environmental permit - neither federal nor cantonal. PC Roads FBH will ensure all required local permits for this Project are obtained

LOCATION AND TRAFFIC DESCRIPTION

The bridge over the Pliva River is situated on the main traffic direction of Jajce municipality, on the major road M-5, section Rogolji – Jajce Jug. The nearest relevant traffic count device is in Jajce, less than a kilometer north from the bridge, and it shows that, in 2015, 2959 vehicles were passing daily

PROJECT DESCRIPTION

The bridge is designed as a discontinuous composite structure with three spans of 25m, two pierce and two abutments. The total length of the bridge, including wing walls is 84,10m. The roadway is 7,60m wide, while the footways have the width of 2x 1m. The total length of the bridge is in a clothoid and a curve of the radius R=150m. The recent rehabilitation of the roadway structures on a part of the main road M5 included this bridge over Pliva, therefore, excluding the crack over the column 1, it can be concluded that the roadway structure is in good condition. Moreover, no installations run over the bridge.

BASELINE OF PARTICULAR INTEREST

The terrain of the Project is mostly hilly with an attitude in the range from 400 to 500 meters above sea level, and this terrain falls into the area of hills and foothills. The average rainfall measured in Jajce, during multi-year period is 78,3 mm per month. The rainiest month is June, when the average precipitation is 94,1 mm. The least precipitation occurs in March, only 61,7 mm on average. The average multi-annual temperature for Jajce is 10,1 °C, the warmest month is July, with an average perennial air temperature of 19,1 °C and the coldest month is January when the average perennial temperature is -0,9 °C.

The monitoring of air quality in Jajce has been carried out since 2013 from the Federal Hydrometeorological Institute. Based on geographical features and the fact that there are no significant polluters, it considers that the air quality is good. The bridge, as already mentioned, stretches over the Pliva River, one of the confluents to the Vrbas River. In the vicinity of the bridge there is a dam between the Pliva Lake and the Pliva River. There are no

direct or indirect impacts of the bridge reconstruction on the dam and vice-versa. The location of the Project is not located within a protected area.

The municipality of Jajce has a population of 30 758 people who live in the area of 336,70km². The population density equals 91.35 people per km². The project area is located on the edge of the municipality borders with the Entity Republika Srpska. Image 11 depicts distances from the nearest inhabited areas, as well as the distance from the Jajce city center. This area of the entity is uninhabited. Thus, the direct impact of the project intervention on the local community is limited

IMPACTS DURING PRECONSTRUCTION

Socio economic impacts: no land acquisition or resettlement is expected on this project.

IMPACTS DURING CONSTRUCTION

The main impacts associated with the construction works include: emissions from the machinery used on site, dust generation from works, potential increases in noise and vibration levels, impact on soil and groundwater from accidental leaks and spills and safety impacts. The contractor is bound by the provisions of this ESMP to conduct a baseline of the biological and natural resources specific to the site, and to adapt the measures of the ESMP and their work performance based on such findings.

During the reconstruction of the lanes, one of the traffic lane will be closed for traffic therefore there will be decrease in traffic flow and possible standstills on the bridge and wider.

Land screening: On September 2nd, 2017 land screening and walkover survey was conducted. It has been noted that public land plots owned by the Investor and required for project activities are not being used in any way, neither formal nor informal, and do not require clearance.

POSITIVE IMPACTS

Project implementation will contribute to better socio-economic conditions (specified in chapter 6.4) and will have positive impacts on the quality of transport on road M5.

MITIGATION MEASURES

The mitigation measures focus on the major identified impacts during works, such as emissions from the machinery used on site, dust generation from works, potential increases in noise and vibration levels, impact on soil and surface water from accidental leaks and spills and safety impacts, waste management, impacts on living conditions, temporary occupation and restrictions on land use, impacts on local traffic.

ENVIRONMENTAL MONITORING PROGRAM

The monitoring measures focus on the major identified impacts during works, such as emissions from the machinery used on site, dust generation from works, potential increases

in noise and vibration levels, impact on soil and surface water from accidental leaks and spills and safety impacts, waste management, impacts on living conditions, temporary occupation and restrictions on land use, impacts on local traffic.

IMPLEMENTATION AND REPORTING

PC Roads FBH is the implementer of the project and will be responsible for the implementation and compliance of the project in line with ESMP. . The Contractor will be responsible for the implementation of the environmental mitigation measures during construction.

PUBLIC DISCUSSION AND INFORMATION DISCLOSURE

Public consultation of the subject ESMP was organized in Jajce after the WB and PC Roads FBH approved the draft of the ESMP.

The record on public discussion, that is, grievances presented at the public discussion shall be recorded in the Grievance Register, and opinions and suggestions of the public shall be integrated into the final ESMP.

The ESMP has been disclosed on JPCESTE webpage on 21.02.2018. and public consultations were held on 13.03.2018.

Grievance Mechanism

Besides the institutionally available ordinary and extraordinary legal remedy, and existing institutional channels, PC Roads FBH will ensure and form a special Grievance Redress Mechanism in collaboration and direct involvement of those municipalities under whose administrative authority the project is carried out, in this case with the Jajce municipality.

Requirements for start of works

The Contractor shall establish all required baseline data before the commencement of works. The Baseline – Monitoring data shall include air quality data, surface water quality data, soil quality data, survey of the site for any endangered and endemic species and other environmental issues in zone of corridors of direct and indirect impacts.

The Contractor shall develop:

1.) A Construction Site Organization Plan (CSOP) that is made up of:

- Implementation Plan of this ESMP,
- a detailed Waste Management Plan (WMP)
- Study on Safety (includes Elaborate on Safety at Work and Elaborate on Protection From Fire and Explosions),
- Traffic Management Plan (TMP) must be developed, which will be created by the Contractor prior to the beginning of construction works.

1. INTRODUCTION

Based on the guidance and requirements from the Environmental and Social Management Framework (ESMF has been disclosed and available to the public in local language on the website of PC Roads FBH in March 2016., http://www.jpfbih.ba/ba/aktivnosti/program_modernizacije.shtml), this site-specific Environmental and Social Management plan (ESMP) has been prepared.

The Public Company Roads of Federation of Bosnia and Herzegovina (further in the document PC Roads FBH) has initiated an overarching program for the project “Modernization of Major roads in the Territory of the Federation of Bosnia and Herzegovina” (The Program) to ensure appropriate road infrastructure by 2020. For this purpose, it has been requested from the Government of the FBH to ensure credit funds from international finance institutions (IFI).

In the framework of the abovementioned umbrella Program, the Public Company “Roads of FBH” (PC Roads FBH), a limited liability company wholly owned by the Government of FBH, has initiated the FBH Road Sector Modernization Project. FBH filed an application for a credit/loan from the European Investment Bank (EIB) and from the World Bank (WB) in total amount of 103,38 million EUR for funding abovementioned Project.

FBH Road Sector Modernization Project comprises several small and mid-sized investment schemes including:

1. This component includes, reconstruction of roads:
 - Construction works for completion of the construction of major road M17.3 Neum–Stolac (in total 32,9 km);
 - Construction of third lanes for slow vehicles (in total 40 km on 8 sections of major roads);
 - Reconstruction of roadway, correction of axes (in total 18 km on 5 sections of major roads, where a correction of axes is to be done on one section only in the length of 1 km),
 - Reconstruction of 3 tunnels (with a total length of 1,86 km);
 - Reconstruction of 7 bridges (with a total length of 0,55 km).
2. Interventions on improving road safety: The reconstruction of intersections, which are classified as "black spots" on major roads, in total 9;
3. Institutional reforms: Road Management in the FBH with a particular focus on sustainability of investments and road safety;
4. Project Implementation Support: Construction supervision and capacity building of the PC Roads FBH.

This Project of the Rehabilitation of the Bridge over the Pliva River (the Project) for which this ESMP is developed, is one of the sub-projects included in the group of sub-projects co-financed by the WB and EIB.

2. METHODOLOGY AND OBJECTIVES OF ESMP

Rehabilitation of the Bridge over the Pliva River, on the road M-5, section Rogolje – Jajce Jug, is screened as a category B project according to the Operational Policy (OP 4.01 on Environmental Assessment) of the WB as well as the screening procedure outlined in the project-specific ESMF. As such, this activity needs to have an ESMP developed, whereas pursuant to the local legislation in force, this project does not require a water permit, an environmental assessment or an environmental permit - neither federal nor cantonal¹. PC Roads FBH will ensure all required local permits for this Project are obtained

This ESMP aims at identifying all of the potential environmental and social impacts associated with this project activity. As such, the ESMP includes mitigation measures for all identified potential impacts that are to be undertaken throughout the different phases of the project including preparation, implementation and operation of the facilities. The measures set forth in this ESMP are meant to avoid, neutralize or diminish adverse environmental and social impacts if not completely then to a satisfying level.

ESMP identifies feasible and cost-effective measures which can reduce potentially negative impacts on the environment and society to an acceptable level. If mitigation measures are not possible, profitable or sufficient, compensation should be included as the last measure.

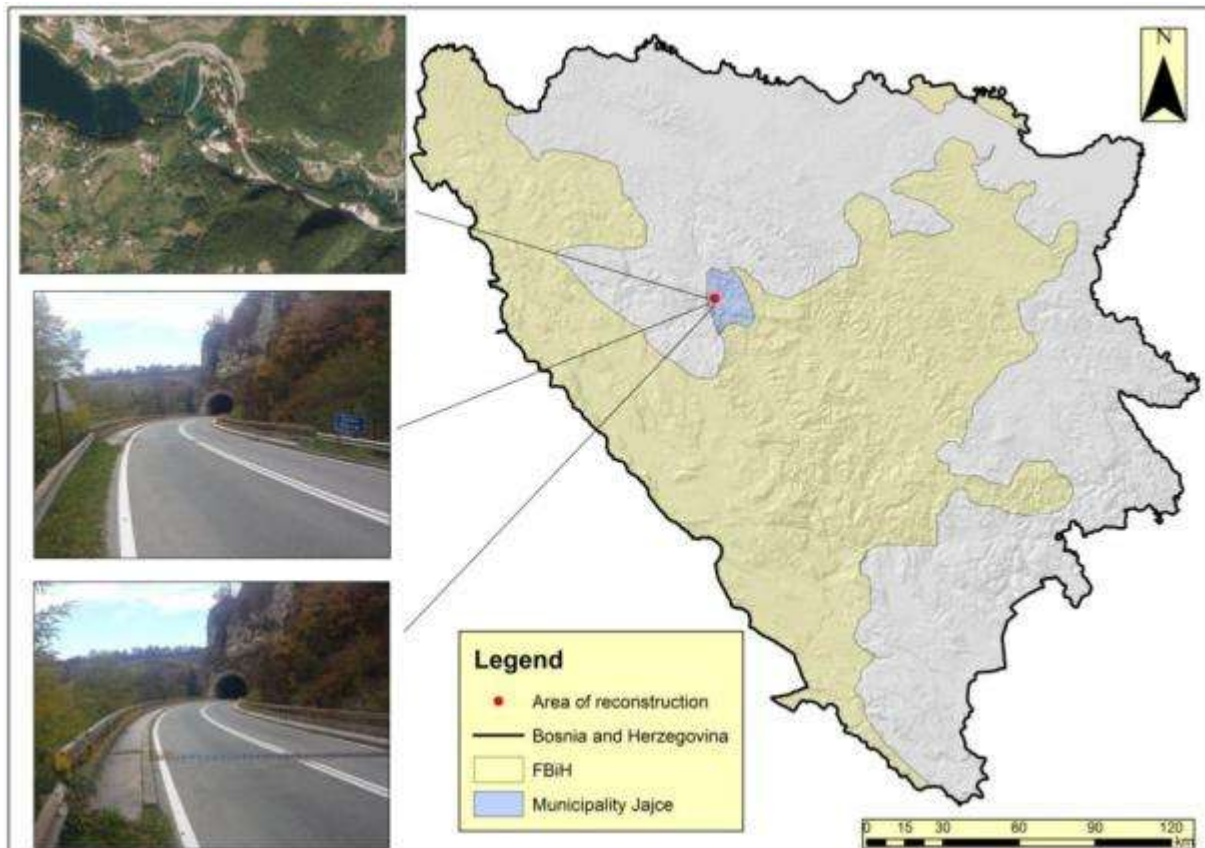
In order to ensure the mitigation measures have been implemented, fully or partially, the ESMP sets forth a monitoring plan to be implemented during the specific stages of project preparation/designing and implementation. Monitoring during project preparation and implementation provides information on the key environmental and social aspects of the project, particularly on the environmental and social aspects of the project and efficiency of mitigation measures. Prior to commencement of works, in accordance with requirements of the ESMP, and a minimum of monitoring requirements, described in table below, without limitation to these requirements, the Contractor shall prepare detailed list of mitigation measures and parameters to be monitored.

¹ In FBH investments requiring EIA are identified by the Regulation on Plants and Facilities Subject to Obligatory Environmental Impact Assessment, and Facilities Which May be Constructed and Commissioned Only if Granted Environmental Permit (Official Gazette of FBH No. 19/04). In Central Bosnia Canton investments requiring an EP are regulated by Regulation on Activities, Plants and Facilities Which May be Constructed only if Granted Environmental Permit (Official Gazette of CBC, No. 5/06).

3. LOCATION DESCRIPTION

The bridge over the Pliva River is situated on the main traffic direction of Jajce municipality, on the major road M-5, section Rogolji – Jajce Jug. The major road M-5 connects the international border crossing Izačić near Bihać in the northwest of the country and Višegrad in the east of BH. In addition, the major road M-5 is part of the international E-road network E761 that connects Bihać in Bosnia and Herzegovina and Zaječar in Serbia.

Figure 1: The geographical location of the project



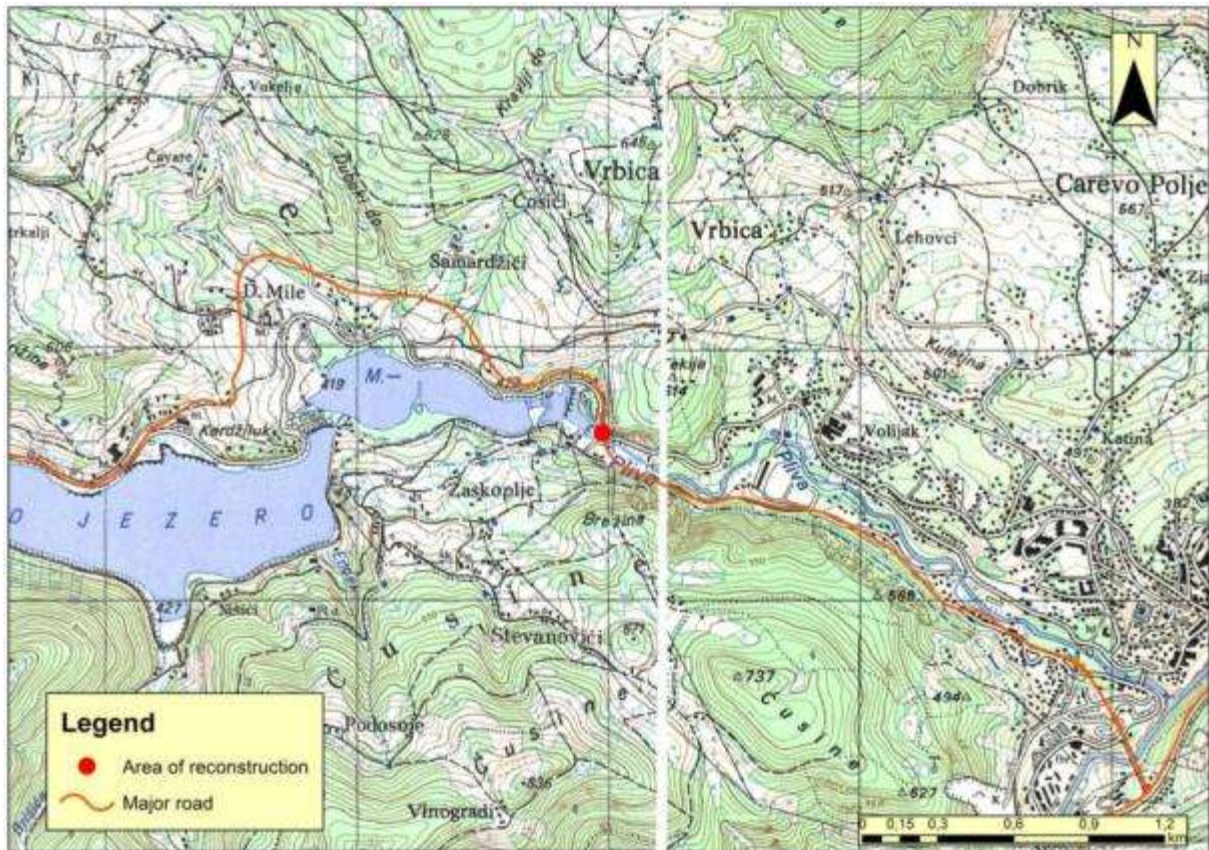
Source: PC Roads Federation of BH

There are no residential or commercial buildings near the bridge. In addition, no public facilities are located near the bridge. The bridge lies 2.5 kilometers west from the monument of nature Waterfall on the river Pliva, which is under protection as a natural rarity of first category and represents a unique travertine formation.

This bridge is used by the local population, by tourist coming directly to the area, and it is used as a transit since it lies on the most important direction to the capital city of Sarajevo from the direction of the Una – Sana Canton.

Figure 2 shows the location of the bridge in a wider surrounding area on a topographical map.

Figure 2: Lookup Map of Wider Area with the Project Location



Source: PC Roads Federation of BH

3.1. Traffic data

PC Roads FBH has installed automatic traffic counting devices along the main traffic network throughout FBH. Automatic traffic counting is done since the 2005 and, last report² was published in 2016 with data for the previous year. The nearest relevant traffic count device is in Jajce, less than a kilometer north from the bridge, and it shows that, in 2015, 2959 vehicles were passing daily (Figure 3).

² "Traffic count on major roads in Federation of BiH in 2015", PC Roads Federation BiH, Sarajevo 2016

Figure 3: AADT in 2015



Source: PC Roads FBH, 2016

By the request of PC Roads FBH, traffic prognosis for the traffic network was developed by IPSA Institute Sarajevo in 2014³ for the period 2013 to 2040. Analyze of the traffic flow was made for every year by applying “equilibrium” procedure. For this particular section, the amount of predicted annual average daily number of vehicles is shown in the *Table 1* below.

Table 1: Traffic prognosis for M5, section Rogolji- Jajce zapad

Major road	Section name	AADT									
		2016	2018	2020	2022	2023	2025	2030	2035	2037	2040
M 5	Rogolji-Jajce zapad	3420	3547	3594	2897	4010	4464	5123	5802	6090	6514

Source: PC Roads FBH, 2014

Table 1 shows a prognosis of an almost double increase in vehicles by the year 2040. This data shows the importance of this section of road M5, and furthermore, it shows the urgent need for its modernization.

³ „Justification studstudy for modernization of major roads in FBiH programme“,IPSA Institute Sarajevo, 2014

4. PROJECT DESCRIPTION

4.1. Existing bridge characteristics

Public Company Roads of Federation BH has arranged the making of the main design of the rehabilitation of the bridge over river Pliva in Jajce on the major road M5, section Rogolji-Jajce south. The bridge is designed as a discontinuous composite structure with three spans of 25m, two pierce and two abutments. The total length of the bridge, including wing walls is 84,10m. The roadway is 7,60m wide, while the footways have the width of 2x 1m. The total length of the bridge is in a clothoid and a curve of the radius R=150m. The gradient of the bridge is 4% while the crossfall equals 6%. The discontinuous span structure is defined by three spans of 25 m with composite structures, which are made of steel grill systems of main and cross girders and reinforced concrete slabs. The two main girders (rib height equals 1200mm) are placed with an interval of 5,50m, while the placing of cross girders is on an interval of 6,25m. The steel structure is made by welding steel which quality equals the category Č0461.

The roadway slab is 20cm thick and made from MB 50 concrete.

The bridge equipment consists of:

- Sliding finger expansion joint type "trasser comb"
- Short steel gutter outlets
- Prefabricated crests with steel handrails
- Concrete curbs
- Pipes Ø100 for installations

The designed geometrical elements of the road alignment are held in the greater part on the section before the bridge (tunnel) and on the bridge; however certain deviations between applied and designed profiles have been detected in the section after the bridge. Therefore, in order to achieve a geometrically correct road alignment it is necessary to predict additional rehabilitation measures on the road alignment for the length of 80m after the bridge.

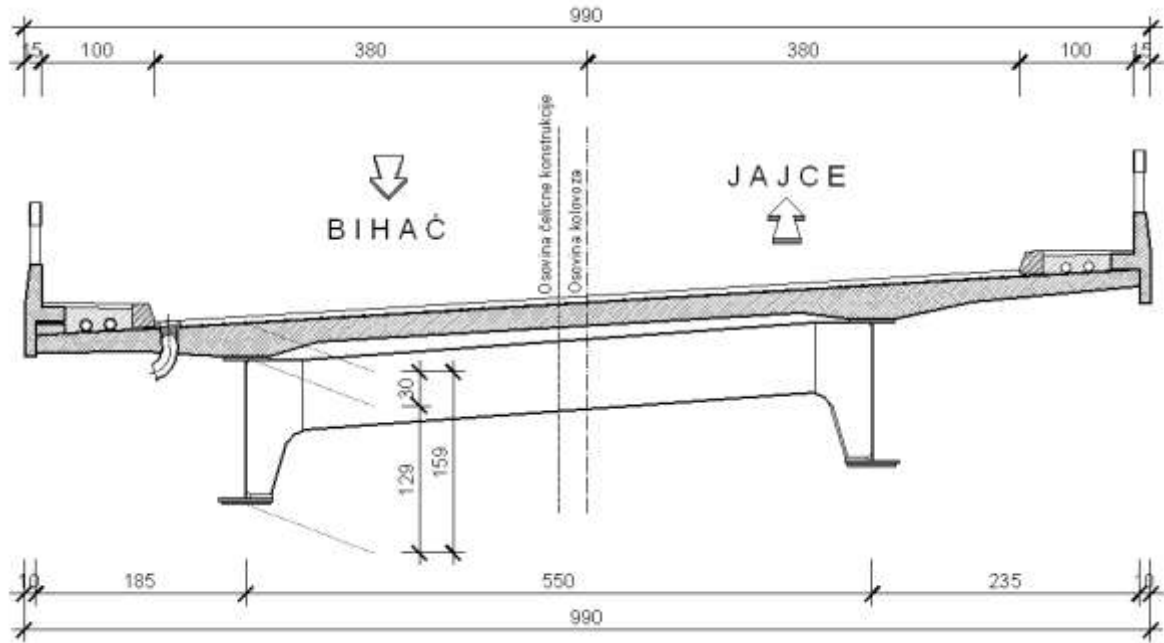
Registered damages on the bridge are mostly tied to the decrepit and inadequate equipment, such as expansion joints, gutter outlets, steel handrails, concrete curbs and pipes for installations.

Other detected damages consist of damages of the main structure elements, which refers mainly to expansion joints on central and coastal

The recent rehabilitation of the roadway structures on a part of the main road M5 included this bridge over Pliva, therefore, excluding the crack over the column 1, it can be concluded

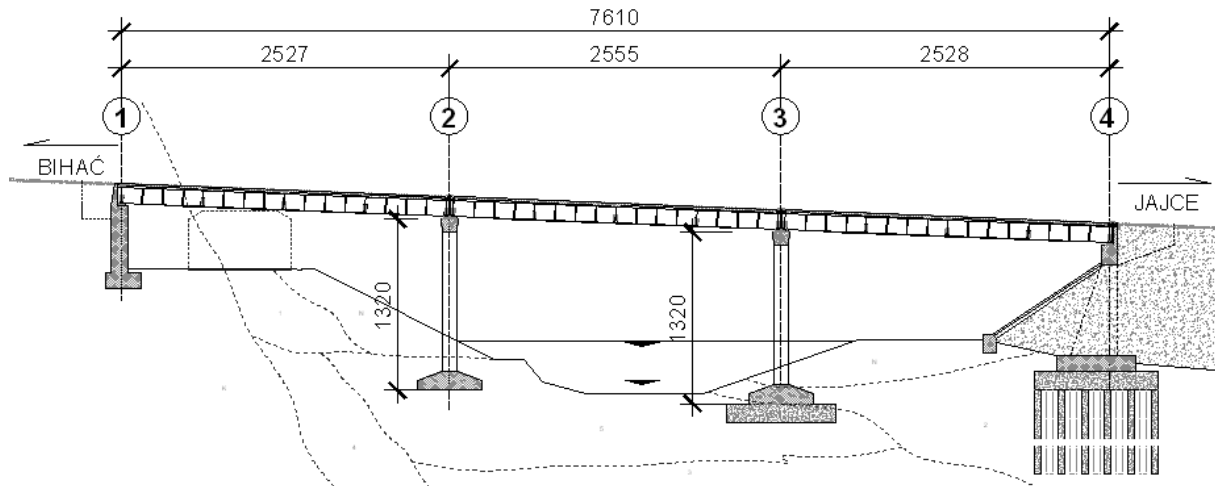
that the roadway structure is in good condition. Moreover, no installations run over the bridge.

Figure 4: Cross section of the existing bridge



Source: main design; IPSA Institute; 2014.

Figure 5: Profile grade of the existing bridge

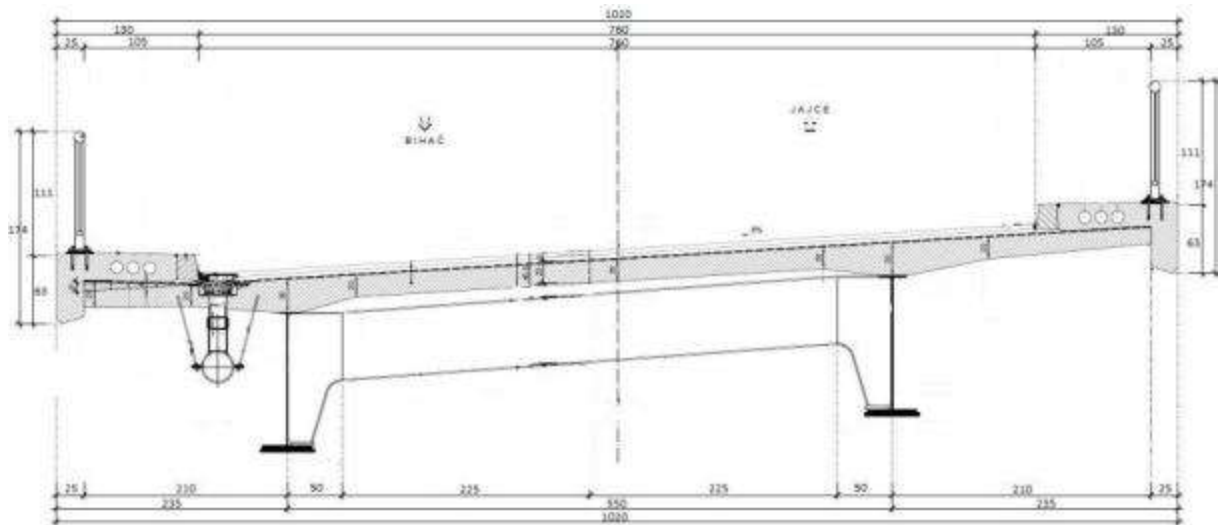


Source: Main design; IPSA Institute; 2014.

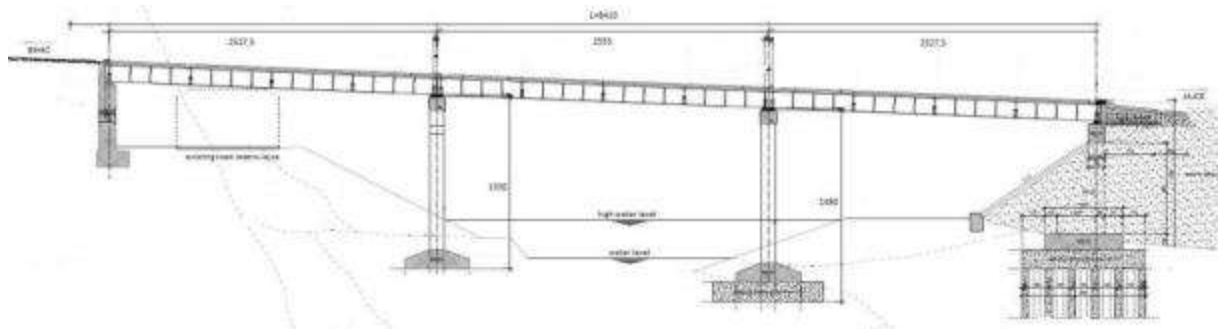
4.2. NEW DESIGN

Having in mind the causes of the damages of the bridge system, rehabilitation measures should include the following:

- Replacing expansion joints with continuous slabs on critical points (central columns 2 and 3)
- Repair of the anticorrosion protection following the identification and elimination of damages of structure elements caused by corrosion
- reparation of the coastal column cone with concrete prisms (inclination 1:1.50) including the construction of a gravitational wall for holding the cone
- restoration of the hydro insulation on the full width of the bridge and the placement of Two layers of asphalt concrete above the insulation
- The reconstruction of asphalt on the bridge 50 m before, and 80 m after the bridge.
- Restoration of the footways with prefabricated crests and granite curbs, as well as the replacement of the railings with tubular steel
- The installation of an iron one profile extension joint with a rubber insert anchored into concrete on coastal column 4.
- The replacement of bearings which entails keeping the existing iron slab on the lower flange of the steel girder and including a wedge iron slab and an elastomeric bearing with an iron upper and lower slab.
- Installation of the closed drainage system, including the construction of an inspection chamber which also serves as a catch basin, construction of the interceptor where the water is purified and led to the inception where sample for analysis are taken before the water discharge
- Fitting of the bridge into the existing alignment and returning the correct geometrical elements of the route in the sections before and after the bridge by corrections on 50 meters of length before the bridge (minor interventions) and 80 meters of length after the bridge (cutting asphalt layer and application of a 35cm thick layer course)

Figure 6: Cross section of the new design of the bridge

Source: main design; IPSA Institute; 2017.

Figure 7: Profile grade of the new design of the bridge

Source: Main design; IPSA Institute; 2017.

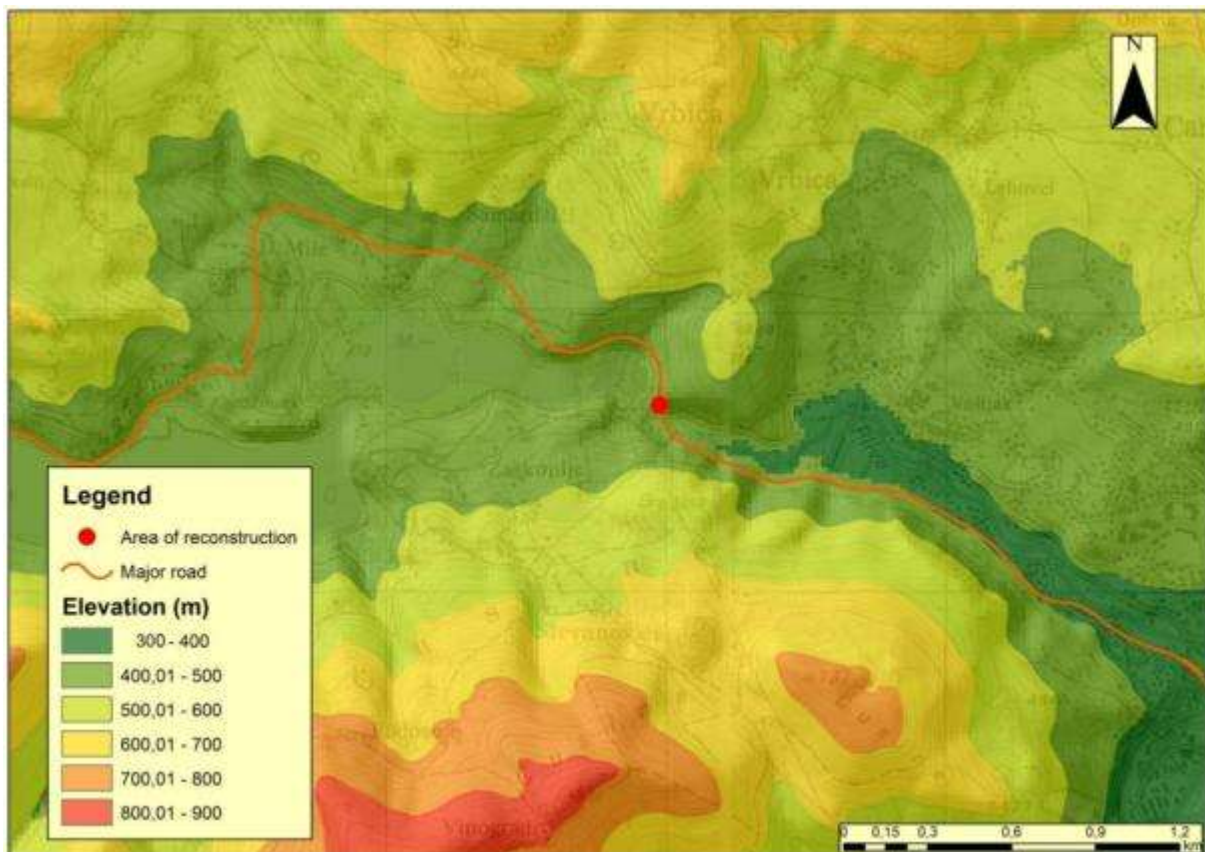
Figures 4,5,6,7 which depict cross sections and profile grades of the existing and the new design of the bridge show that the new design envisages a 30 cm wider structure, which represents the only change in dimensions between the existing and the new design.

5. BASELINE OF PARTICULAR INTEREST

5.1. GEOGRAPHIC CONDITIONS

The terrain of the Project is mostly hilly with an attitude in the range from 400 to 500 meters above sea level, and this terrain falls into the area of hills and foothills. In the wider area the altitude goes up to 900 meters above sea level, as indicated in Figure 6. From stratigraphic – petrographical point of view this area is composed from stable and well permeable rocks, and from structural geomorphological point of view this type of relief belongs to the fluvial – accumulation type of morphostructure. Aquifers are predominantly of fracture – cavernous porosity.

Figure 8: Geographical Map of Wider Area with the Project Location



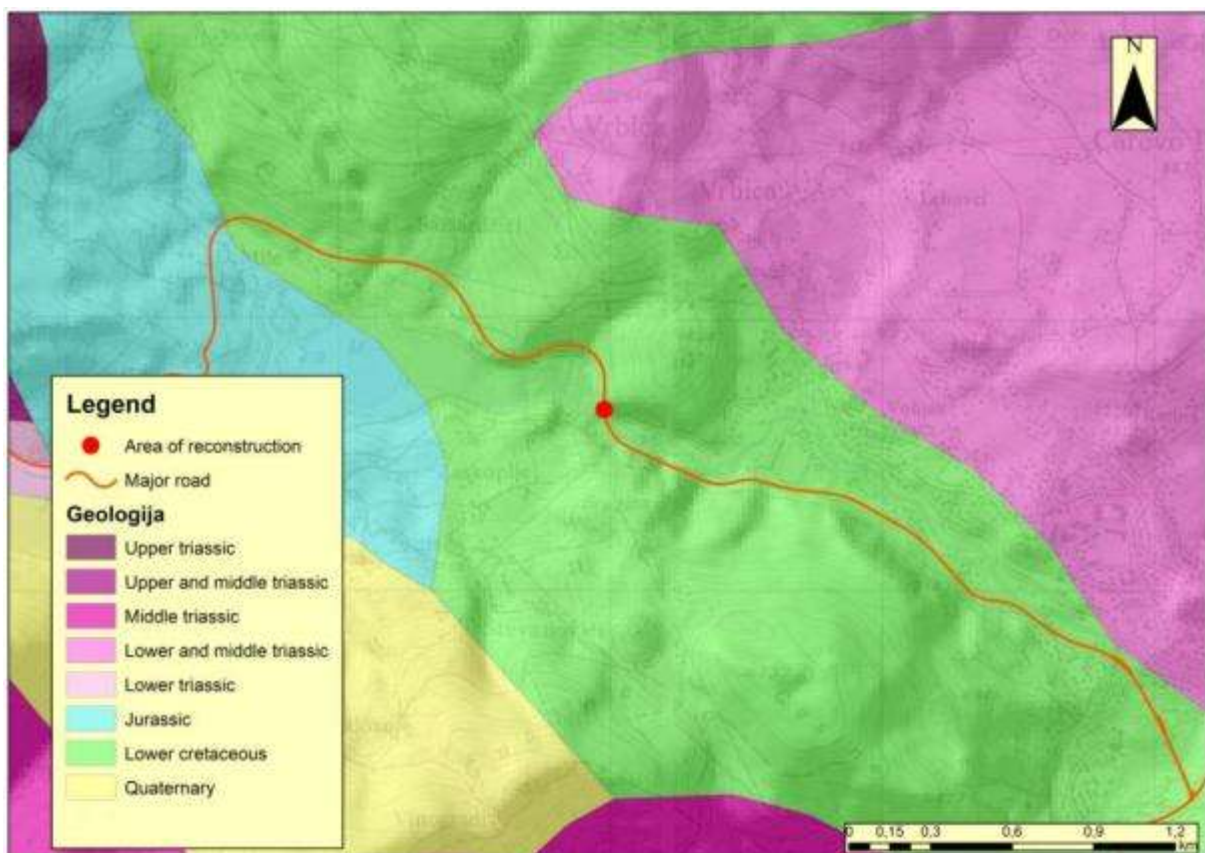
Source: Draft of Spatial plan of FBiH 2008.-2028.

The geological structure of the area of reconstruction is characterized by quaternary lake and marsh sediments, which can be found in the upper part of Pliva Lake. On these terrains, sludge and fine grain clay-sandy materials are deposited. Along the Pliva Valley we can find alluvial deposits. Conglomerates of miocene age, which can be found in the wider area, are usually stratified or banked, coarse-grained, with addition of marly limestone and sandstone.

Pebbles are made of limestone, with the size of 2-20 cm. Travertine limestone's near Jajce are also of Miocene age.

The sediments from cretaceous period are represented through limestones with light gray, gray-brown and whitish color. In these rocks we can find almost all types of limestone rocks. Sediments from upper Triassic period are represented trough dolomites, which are thin to thick layered, and have light gray or white color, and in mid Triassic sediments, dominant types of rocks are colorful cherts, black flaky limestone's, marl, greenish silicic marl, tawny and gray-green friable tuffs, dark gray clay shales and volcanic breccia. Lower Triassic sediments are represented by dark gray limestone's, with the interaction of gray marl and subordinated reddish limestone's.

Figure 9: Geologic Map of the wider area of the Project



Source: Draft of Spatial plan of FBiH 2008.-2028.

5.2. CLIMATE FEATURES

Climatic features of subject area are determined by the thermal and pluviometric regime, and therefore it is necessary to define its basic parameters, using climatological monitoring and a detailed analysis of the same. It can be said that this area is under the influence of the moderate continental climate or moderately warm and humid climate type (Cfb climate according to Köppen climate classification), while the higher zones are characterized by subalpine and alpine climate (areas over 1000 meters above sea level).

The average multi-annual temperature for Jajce is 10,1 °C, the warmest month is July, with an average perennial air temperature of 19,1 °C and the coldest month is January when the average perennial temperature is -0,9 °C.

Table 2. Average temperature and precipitation for the multi-year period (1960.-1984.)

Month	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average
Temperature (°C)	-0,9	1,9	5,8	10,0	14,7	17,9	19,1	18,7	15,4	11,1	6,2	1,1	10,1
Precipitation (mm)	62,8	63,9	61,7	72,0	85,1	94,1	90,6	81,4	78,8	69,6	89,1	90	78,3

Source: Federal Hydrometeorological Institute, Sarajevo

The average rainfall measured in Jajce, during multi-year period is 78,3 mm per month. The rainiest month is June, when the average precipitation is 94,1 mm. The least precipitation occurs in March, only 61,7 mm on average.

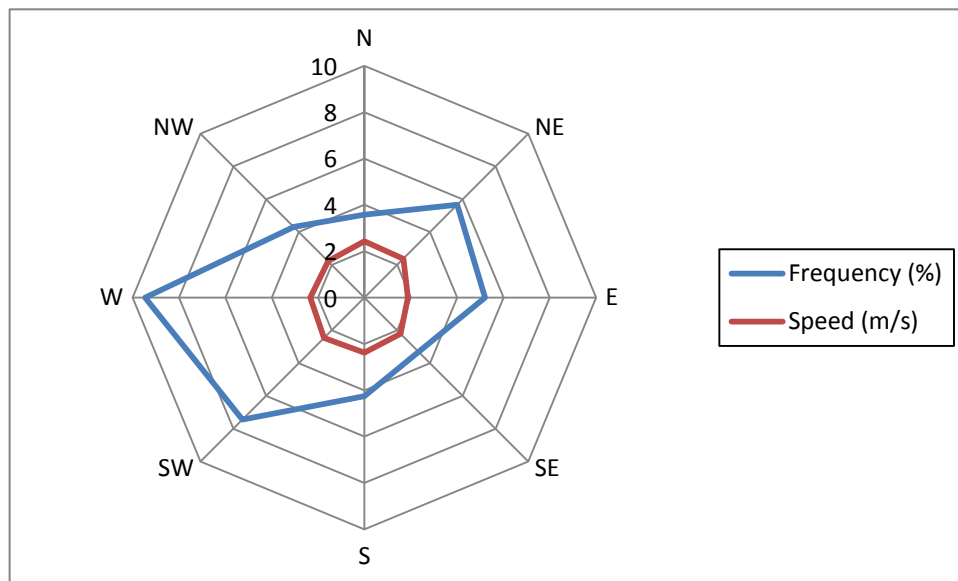
Table 3. Average wind speeds and frequency for the multi-year period (1960.-1984.)

Direction	C	N	NE	E	SE	S	SW	W	NW
Frequency (%)	50,4	3,58	5,67	5,2	3,31	4,25	7,44	9,46	4,31
Speed (m/s)	-	2,43	2,37	1,87	2,21	2,37	2,47	2,34	2,22

Source: Federal Hydrometeorological Institute, Sarajevo

Wind roses depend on geomorphology, mountain ridges and the direction of the rivers. The dominant winds come from the west and southwest, but most of the time calms are present.

Figure 10. Wind roses from MS "Jajce" for the multi-year period (1960.-1984.)



Source: Federal Hydrometeorological Institute, Sarajevo

5.3. WATER AND WATER QUALITY

The bridge, as already mentioned, stretches over the Pliva River, one of the confluent to the Vrbas River. The river is formed from two strong springs at the foot of the mountain Smiljevac-Jastrebnjak at 483 m above sea level, and its mouth is in Jajce where the river is forming an 18 meters high waterfall. The river basin of Pliva has an area of 788 km² (approximately 15% of the river basin area of the Vrbas river). Pliva has a quite balanced hydrological regime. According to data from the hydrological station Volari, the minimal flow is $Q_{\min}=11.4 \text{ m}^3/\text{s}$, while the average flow is $Q_{\text{avg}}=35 \text{ m}^3/\text{s}$.

In the immediate vicinity of the bridge are the Pliva lakes. A water intake was built in the lakes for the hydroelectric power plant Jajce I. The lake volume is relatively small (4.2 hm³) in relation to the flow, so it has very little effect on the flow leveling of Pliva.

Figure 11: Hydrographic Map of the wider area of the Project



Source: PC Roads Federation of BH

The Pliva River is threatened by human activities such as transport, agriculture, non-sanitary waste disposal and discharging untreated wastewaters from the housing facilities in the vicinity.

According to the Vulnerability study of the Federation of BH, river Pliva is classified into Class II according to its quality. Class II includes waters that can be used for drinking after a certain purification treatment, and in a natural state for swimming, water sports, and for the growth and development of certain fish species. The Contractor shall conduct a baseline measurement for water quality monitoring prior to the start of works.

5.4. AIR QUALITY

The monitoring of air quality in Jajce has been carried out since 2013 from the Federal Hydrometeorological Institute. The monitoring station is located in Harmani, about 2 kilometers east from the bridge over Pliva. The following pollutants are measured at this monitoring station: sulfur dioxide (SO₂), nitrogen dioxide (NO₂) and particulate matter PM10.

Considering that the continuous measurements have been carried out only for a few years period, we present the data for 2014, 2015 and 2016 for this monitoring station.

Table 4. Average values and numbers of daily exceedances of tolerant and limit values⁴ of pollutants at the monitoring station „Jajce“

	Average annual value SO ₂ (µg/m ³)	Number of daily exceedances of tolerant and limit values (> 125µg/m ³)	Average annual value NO ₂ (µg/m ³)	Number of daily exceedances of the limit value (> 85µg/m ³)	Average annual value PM10 (µg/m ³)	Number of daily exceedances of the limit value (> 50 µg/m ³)
2014.	15	0	9	0	26	36
2015.	22,9	4	12	0	21	19
2016.	12,1	0	15	0	26	55

Source: Annual reports on air quality in the Federation of BH for 2014, 2015 and 2016, Federal Hydrometeorological Institute, Sarajevo

Table 5. Average values of pollutants at the monitoring station „Jajce“ by months

Average value (µg/m ³) /month	SO ₂			NO ₂			PM10		
	2014.	2015.	2016.	2014.	2015.	2016.	2014.	2015.	2016.
I	26	63	34	16	22	19	62	38	66
II	11	47	12	11	18	12	35	30	24
III	-	27	11	12	14	12	47	16	21
IV	10	17	5	9	10	8	29	7	8
V	9	8	5	6	6	6	15	3	8
VI	8	9	4	5	5	4	15	4	7
VII	8	10	4	5	6	5	12	-	5
VIII	9	13	3	6	7	6	13	-	5
IX	11	11	5	5	7	9	14	-	6
X	18	10	10	9	10	18	19	-	14
XI	27	20	17	12	16	28	18	-	42
XII	32	68	34	14	22	53	32	-	104

Source: Annual reports on air quality in the Federation of BH for 2014, 2015 and 2016, Federal Hydrometeorological Institute, Sarajevo

Based on the attached tables it can be seen that the maximum values of sulfur dioxide (SO₂) occur in the winter period. The same applies for the values of nitrogen dioxide (NO₂) and particulate matter PM10. Number of daily exceedances of tolerant and limit values of sulfur dioxide (> 125 µg/m³) in 2015 were 4, and no daily exceedances of the limit value of nitrogen dioxide (> 85 µg/m³) have occurred in the three year period. The number of daily

⁴ Limits and tolerance values prescribed by the *Rulebook on the Manner of Air Quality Monitoring and Defining the Types of Pollutants, Limit Values and Other Standards* (Official Gazette of FBH, No. 01/12).

exceedances of the limit value of the particulate matter PM10 ($> 50 \mu\text{g} / \text{m}^3$) range from 19 to 55 during the three year period.

The main air pollutants in the area of Jajce are industrial plants, and pollution from the traffic of the major road. Also, during the winter time, the air is loaded with the pollution that comes from individual furnaces and boiler units, from residential facilities.

Based on geographical features and the fact that there are no significant polluters, it considers that the air quality is good. The Contractor shall conduct a baseline measurement for air quality monitoring prior to the start of works.

5.5. NOISE LEVELS

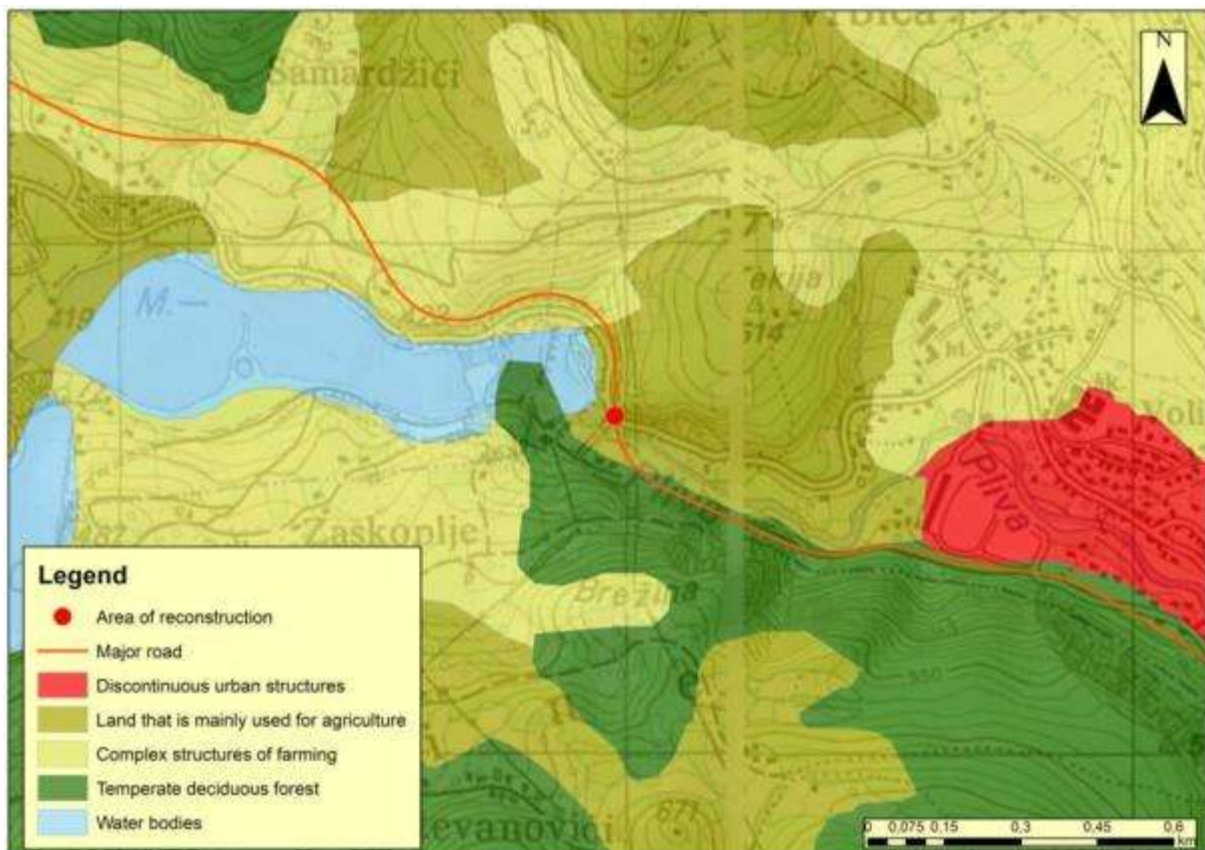
There was no monitoring of noise levels near the Project area; therefore there is no available baseline data of the impact of the noise on the environment. The largest source of noise, in general, is traffic.

In close proximity to the Project area, we cannot find facilities for residential purposes (houses) and business purposes (stores). According to the Law on Noise Protection, they fall under the sixth zone, where allowed noise levels are 70 dBA during day and 70 dBA at night. So we can say that there are no sensitive receptors (hospitals, health resorts etc.) around the area that could be impacted by an increased noise level.

5.6. LAND AND LAND USE

In the vicinity of the bridge there is a dam between the Pliva Lake and the Pliva River. There are no direct or indirect impacts of the bridge reconstruction on the dam and vice-versa. The dominant purpose of the surrounding area is forest, and in the immediate vicinity of the bridge we cannot find residential or business facilities *according to the CORINE methodology*⁵. No agricultural land or land of high importance is located in close vicinity of the site.

⁵ Coordination of information of the Environment - European Environment Agency

Figure 12: Land use in the wider area of the project according to CORINE model

Source: Coordination of information of the Environment, European Environment Agency

5.7. FLORA AND FAUNA

The area of Central Bosnia Canton where the municipality of Jajce is located, with geographic features of the terrain and large variety of ecosystem, it is considered that in the wider area reside over 4000 species of vascular plants many of which are endemic and relict, and more than 200 species of birds and other elements of the biodiversity.

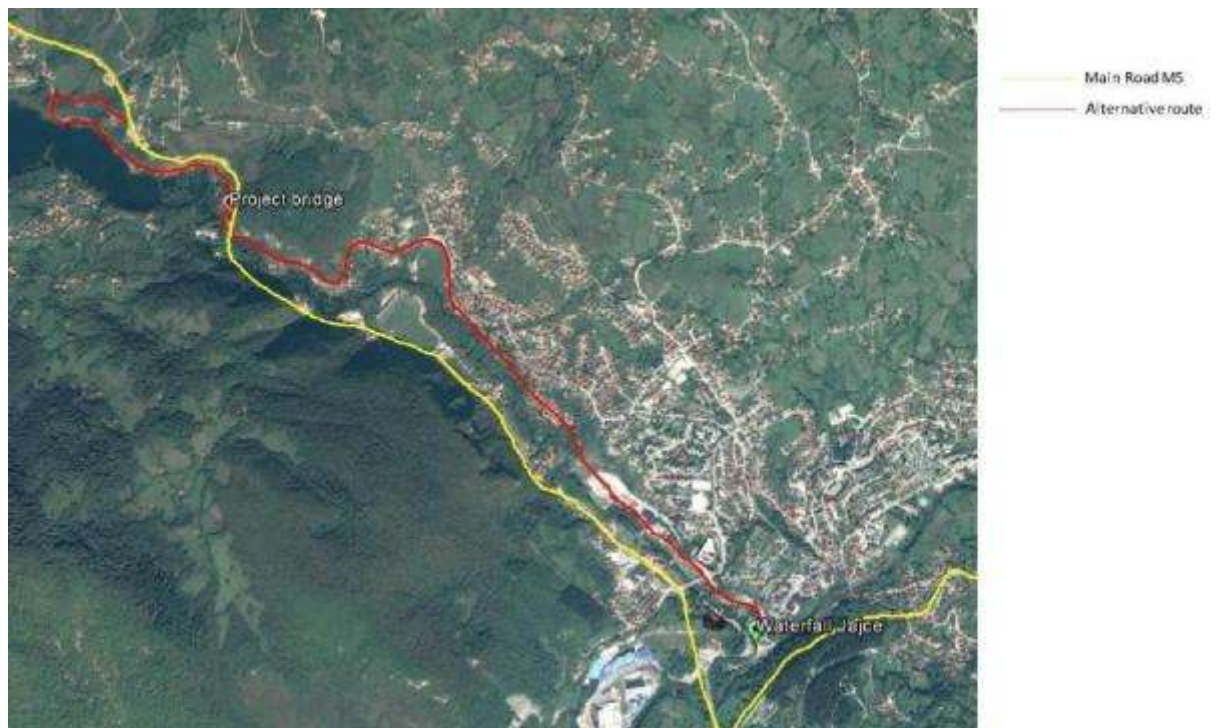
There is no exact data on the flora and fauna for the particular location of the Project, but based on the fact that this is an existing bridge, and that almost all activities will be carried out within the existing footprint, the risk to the flora and fauna is minimal. However, considering that the works will be done within the watercourse, the Contractor shall hire a biologist to conduct a review of the site for the baseline that needs to be prepared for monitoring prior to the start of works.

5.8. PROTECTED AREAS

The location of the Project is not located within a protected area according to Spatial plan of FBH and Spatial plan of Central Bosnia Canton. There are also no recorded archaeological findings in the observed area. At a distance of about 2.5 kilometers east of the bridge, at the confluence of the Pliva and the Vrbas River, there is a Monument of nature the Waterfall on the river Pliva in accordance with the FBH law on protection of nature, which was put under protection as a natural rarity of the first category and presents a unique travertine formation. Considering the distance of the bridge from the natural monument it is considered that the reconstruction of the bridge will not have any direct impact on the waterfall. The only negative impact, which will be temporary, to the monument of nature shall occur during the construction since the main access to it will be interrupted.

However, Figure 13 depicts the alternative route to the Waterfall, thus minimizing the impact.

Figure 13: areas alternative route to the protected area of the waterfall



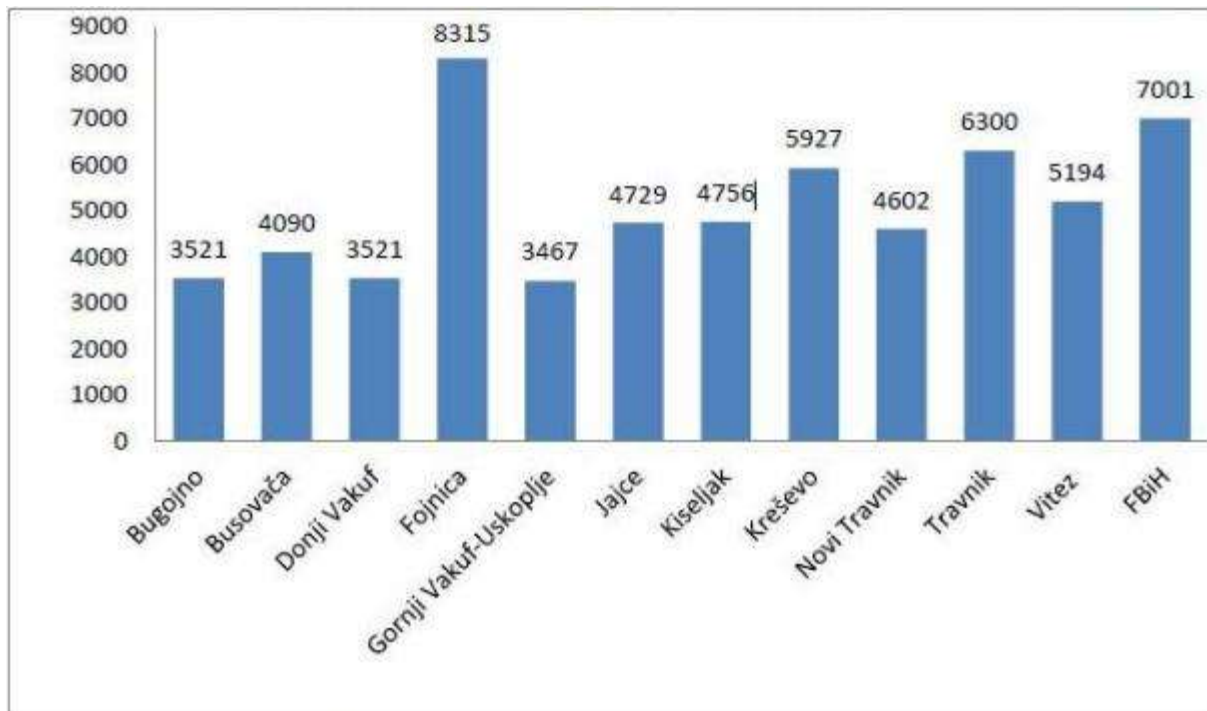
Source: PC Roads Federation of BH

5.9. POPULATION AND SETTLEMENTS

The municipality of Jajce has a population of 30 758 people who live in the area of 336,70km². The population density equals 91.35 people per km².

The GDP of the municipality equaled 4729 BAM in 2012 which makes Jajce a moderately developed Municipality comparing to the rest of the Municipalities in CB Canton.

Figure 14: The comparison of GDP in the municipalities of CB Canton



Source: Federal Institute for Development Programming

The municipality of Jajce has three primary schools and two high schools. The nearest universities are more than 100km away.

The health care system in the municipality is within the average of Federation BH with 810 people per one doctor. Primary and secondary health care as well as a public pharmacy and several private practices are present in the city.

The project area is located on the edge of the municipality borders with the Entity Republika Srpska. Image 11 depicts distances from the nearest inhabited areas, as well as the distance from the Jajce city center. This area of the entity is uninhabited. Thus, the direct impact of the project intervention on the local community is limited

Figure 15: The distances of the project bridge from inhabited areas



Source: PC Roads Federation of BH

Nevertheless, the importance of this project lies in the importance of the bridge for transit traffic as well as in connecting Jajce with the North of the Country and the neighboring Entity.

6. DESCRIPTION OF POSSIBLE IMPACTS DURING PRE-CONSTRUCTION CONSTRUCTION, OPERATION AND MAINTENANCE

6.1. IMPACTS DURING PRE-CONSTRUCTION

Socio-economic impacts

Land acquisition and resettlement: Since the project envisages the reconstruction of a bridge without expansion beyond the current footprint which is clearly defined, there is no risk of additional land take. Thus, no land acquisition or resettlement is expected in this project.

6.2. IMPACTS DURING CONSTRUCTION

Impact on Air Quality

Exhaust gases - The machinery which is used during the construction and delays, i.e. traffic standstills on the road due to works on reconstruction of bridge will lead to a temporary increased emission of such gasses as SO₂, CO₂, CO, NO_x and Pb.

Dust generation- where the most important polluters are solid particles (PM10 and PM2,5). Possible sources of dust generation include demolition works, site preparation activities, handling of building materials such as excavated earth/ substrate, gravel, sand, asphalt, cement and the construction itself.

Impact on Noise Level and Vibrations

Noise emission is likely to appear during site preparation. Possible sources of noise are: ground preparation activities, use of tools and equipment, assembly of building materials on site; offloading of building materials such as gravel, sand, asphalt etc. and the work of construction machines in general.

Impact on Surface Water Quality

Possible contamination of water– Possible sources of water pollution are: demolition works and malpractice, handling with hazardous substances (i.e. concrete, asphalt, chemicals and paint), inadequate waste handling, liquid and solid equipment damage which may lead to leakage of lubricants and fuel (increased blurring, input of fats and oils), painting of the fences, corrosion protection, paving of the bridge etc. Negative impacts may occur due to accidental or careless deposition of toxic substances from the asphalt or toxic paints into watercourses.

Impact on Biological and Natural Resources

- Work of heavy machinery during construction phase may lead to plants being covered with dust (e.g. blockage and damage to stomata, shading, abrasion of

leaf surface or cuticle), which will affect plants growth and feeding base for animals;

- Pollution of water and soil with hazardous substances (fuel and oils in case of spills) can harm fish, amphibians, as well as animals living in the surrounding area.
- If not carried out carefully earth works in the riverbed may alter the flow of the river.

Impact on the Protected Areas

The observed project is not situated in any of the existing protected area. At a distance of about 2.5 kilometers east of the bridge, at the confluence of the Pliva and the Vrbas River downstream from the bridge, there is a monument of nature the Waterfall on the river Pliva, which was put under protection as a natural rarity of the first category and presents a unique travertine formation. Potential negative impact on the waterfall in case of accidents (spills, leakage of oils, fats, fuels and similar hazardous materials) during reconstruction works is possible.

Impact on Fish Habitat and Water Quality

Negative impacts on fish habitat may occur during the execution of the following activities: demolition works, works in the immediate vicinity of watercourses or in them, dumping toxic concrete, asphalt or concrete and asphalt, paint and other chemicals leaching into watercourse, disposal of fine particles in watercourses.

Works on the foundations of the bridge may cause changes in the flow of the river if not planned and executed properly.

Impact on Landscape Values

Partial alternation of landscape and visual aspects can be expected with organization of construction sites, presence of personnel and machinery on site. These impacts are temporary and negligible.

Impact on Traffic Safety and Traffic Flow

Traffic congestion and obstructions on the bridge - increased traffic load, leading to congestion and obstruction is likely to be experienced on local roads and on major road (M-5). This is especially expected during delivery of construction material to site and collection of waste from site. During the reconstruction of the lanes, one of the traffic lane will be closed for traffic therefore there will be decrease in traffic flow and possible standstills on the bridge and wider. This is also an important issue in the summer months where the volume of traffic on this road substantially increases.

The designed project activities imply a short period (cca 20 days) of total traffic standstill over the bridge where the road safety measures include vertical traffic signage as shown on figure 14.

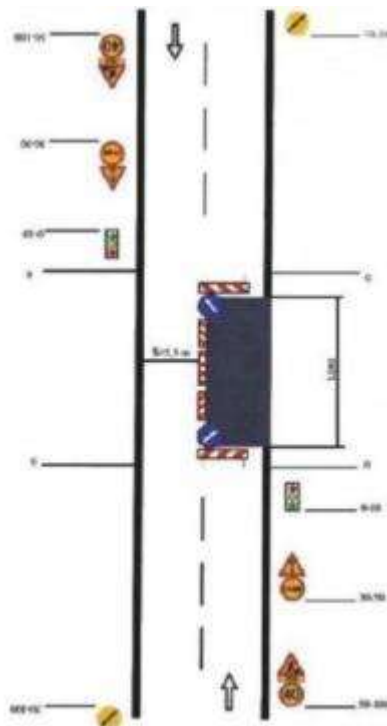
Figure 16: Road safety measures during the traffic standstill during the construction phase



Source: PC Roads Federation of BH

Road safety measures that will be in place during the reconstruction of lanes, where one traffic lane will be open for traffic, include light and vertical traffic signage as shown on figure 15.

Figure 17: The distances of the project bridge from inhabited areas



Source: PC Roads Federation of BH

Population safety impacts

Due to the fact that the nearest settlements are 500m of air distance away, it can be concluded that the project and construction activities will have no impact on the safety of the local community.

Socio-Economic Impacts

Temporary land acquisition and damage to private property: It is not expected that it will be necessary to temporarily occupy any privately owned land plots for lodging machines and disposal of materials. Machines and materials will be disposed on land owned by the Investor. However, if additional temporary occupation of private land is needed during construction activities, this will be agreed upon with respective land owners and compensation will be paid in accordance with provisions determined in the RPF before the land is accessed.

New workplaces and impacts on local businesses (positive): New business opportunities are expected to be created for local businesses such as transporters, suppliers and other service providers. The Project is expected to have positive impacts on the local employment opportunities with opening new workplaces during road construction. This impact is considered to be short-term and small.

Impact on the protected natural areas: During construction traffic congestions are possible due to the one-way traffic regime over the bridge. Thus, temporarily limited access to the Waterfalls of River Pliva during construction can be expected.

Impact on living conditions of local communities

The area in the vicinity of the project construction site is not populated, thus, no impact on local communities is identified. Still, following adverse impacts during construction are possible:

- Noise increase,
- Construction waste disposal,
- Short-term disruptions to water and electricity supply, telephone and Internet connections, waste collection, regular public transport, delivery of mail.
- Local businesses can be affected in means of late delivery of goods and products.

The impact is short termed and low due to the existence of an alternative route.

Impacts on local traffic: Local traffic will be increased (including heavy machinery and trucks) and only one lane will be in function, causing delays and limited access.

Land screening: On 2nd of September, 2017 social specials of the Project Implementation Team (PIT) conducted a walkover survey on the location of the Project Bridge (Bridge over the river Pliva). It has been noted that public land plots required for the project are not being used in any way, neither formal nor informal, and do not require clearance.

Figure 10 (a-d): Photographs made during the walkover survey on the 2nd of September, 2017



a) public land in front of the bridge



b) public land in front of the bridge



c) public land in front of the bridge



d) public land in front of the bridge

Source: PC Roads of FBH

6.3. IMPACTS DURING OPERATION AND MAINTENANCE

Since this bridge is an already existing object no new negative environmental impacts, nor deterioration of existing negative impacts, during operation and maintenance are expected.

Socio-Economic Impacts

Impacts on traffic: According to the Table 1: Traffic prognosis for the main road M5, section Rogolji – Jajce Zapad Traffic prognosis, an increase to the number of vehicles is expected during the operational phase. Accordingly, by the year 2018 the number of vehicles will be

increased by cca 20% in reference to the number of vehicles in 2015 (the latest AADT measurement data). Furthermore, an increase in speed of vehicles is expected due to the rehabilitation of the bridge during which all technical problems, that were causing the lowering of speed of vehicles below allowed speed limit, will be resolved.

6.4. POSITIVE IMPACTS

Project implementation will contribute to better environmental and socio-economic conditions and will have positive impacts on the quality of life of the local community. There are several social and environmental opportunities which were detected in the project:

- Bridge improvement in the sense of constructive stability;
- Lowered pressures on the river Pliva and its environment due to drainage water treatment (installation of grease and oil separator);
- Improved access for vehicles, pedestrian and cyclist to the Monument of nature the Waterfall on the river Pliva;
- Safer traffic conditions for drivers by improving construction elements of the pavement structure and adding safety fence;
- increased pedestrian safety by reconstructing the pedestrian pavement on both sides of the bridge;
- Less damages to vehicles,

6.5. Enhancement measures

Table 6: Enhancement measures

Impact	Improvements to be achieved	Cost Assessment (US\$)		Institutional Responsibility	
		Operative	Implementation	Operative	Implementation
▪ Traffic	<ul style="list-style-type: none"> ▪ Improved road and travel safety by improving construction elements of the pavement structure and safety fence; ▪ Better traffic flow; ▪ Increase of pedestrian safety by reconstructing the pedestrian pavement on both sides of the bridge 	Included in construction works	Included in supervision	Contractor	PC Roads FBH
▪ Socio-economic	<ul style="list-style-type: none"> ▪ New job and business opportunities for local construction workers and firms; ▪ Improvement of connections of the municipality of Jajce with commercial and trading center such as Sarajevo; 	Included in construction works	Included in supervision	Contractor	PC Roads FBH
▪ Water	<ul style="list-style-type: none"> ▪ Improvement of the protection of the Pliva River with designing and implementing a treatment of drainage (installation of grease and oil separator) water and regular maintenance of it; ▪ Improved and renewed hydro-isolation 	Included in construction works	Included in supervision	Contractor	PC Roads FBH
▪ Visual aesthetic and landscape	<ul style="list-style-type: none"> ▪ Improving visual aspects of the bridge and surrounding area. 	Included in construction works	Included in supervision	Contractor	PC Roads FBH

7. MITIGATION MEASURES

The purpose of this ESMP is to set forth mitigation measures associated with the environmental impacts identified for this given project activity. The mitigation measures are included in this section and summarized in *Table 7*. This chapter includes also the general provisions and mitigation measures that the contractor hired for reconstruction will need to obey and/or perform. The requirements that the Contractor needs to follow, beyond the provisions of the ESMP, will be outlined in a number of planning documents (plans) that will be developed by the contractor prior to any start of works. The development of such documents will allow for adjustments of the ESMP measures based on the potential new findings on the site, as a result of the public consultations or developing the project specific baseline.

As a part of Tendering Documents (TD) for the Contractor, PC Roads FBH will require that the Contractor submits a Construction Site Organization Plan (CSOP), which will highlight certain requirements both for completion of works and implementation of mitigation measures.

CSOP consists of following components⁶:

- (i) Description of the preparation works and description of location organization during and after the construction (design of access roads, internal roads, manipulative and parking spaces, layout of installations, design and organization of temporary construction site facilities, terrain rehabilitation upon completion of works). This part of CSOP needs to contain technical description, calculation and graphical appendices, and BoQ.
- (ii) Technological scheme (location and operation of the storage and disposal sites of the materials, location of the mechanization maintenance, disposal sites for special types of waste, storage of dangerous and harmful substances). This part of CSOP needs to contain technical description, calculation and graphical appendices, and BoQ.
- (iii) Elaborate on safety (Elaborate on safety on work and Elaborate on protection from fires and explosions), which shall include according to provision of this ESMP a Management Plan in Case of Accidents (MPCA); and
- (iv) Practical plan of the implementation of this ESMP and among other a detailed Waste Management Plan (WMP)].

Additional request for the Contractor, as stipulated by ESMF and this ESMP, is to design and submit a detailed Traffic Management Plan (TMP) 30 days prior to commencement of works (in accordance with *Appendix 4. Road Safety Management* of the ESMF). The TMP

⁶ Ordinance on Construction Site Organization, Mandatory Documents on Site and Participants in Construction (Official Gazette of the FBH No. 48/09)

shall also include management of traffic according to the season, notably trying to minimize impacts during the summer months where the traffic in this area is exceptionally high.

Within the framework of the project, PC Roads FBH prepared a Resettlement Policy Framework (RPF) which clarifies land acquisition/resettlement and compensation principles, organizational arrangements and procedures for planning land acquisition/resettlement. In this sub-project no land acquisition is expected.

7.1. MITIGATION MEASURES IN PRE-CONSTRUCTION PHASE

7.1.1. Contractor Management

PC Roads FBH will ensure that the construction activity is carried out without risk to the health and safety of all workers and local community through contract clauses. Therefore, the Contractor will plan, coordinate, control and monitor the undertaken activities to effectively minimize the risks presented during their work.

The ESMP is an integrated part of the TD and the Contract for Execution of Works. It is the Contractor's obligation to include the implementation of environmental and social mitigation measures into the overall cost.

The Contractor will be required to provide a short statement that confirms that:

- The ESMP conditions have been estimated and included into the bid price,
- The Contractor for Execution of Works has a qualified and experienced person on the Contractor's team who will be responsible for the environmental and social compliance requirements of the ESMP.
- The Contractor will comply with applicable BH and FBH laws, EU standards and WB requirements, including the relevant Operational Policies, this ESMP, framework ESMF and the Environment, Health and Safety guidelines, where applicable.

The following contractual conditions shall apply to the Contractors for Execution of Works employed by PC Roads FBH:

- The Contractor will be required to prepare site-specific CSOP in accordance with the requirements of this ESMP. All submitted CSOPs shall be formally reviewed by PC Roads FBH prior to agreement and signing.
- The Contractor will provide formal written reports to PC Roads FBH in accordance with requirements set-out in the ESMP which is part of this document;
- PC Roads FBH is responsible to introduce all contractors and sub-contractors and personnel working on the Project on the contents and provisions of this ESMP and any penalties arising from non-compliance therewith;
- The Contractor is responsible for notifying PC Roads FBH immediately upon receiving any complaints or grievances, as well as immediately upon identifying and implementing of any corrective actions. The Contractor shall inform the complainant

of the Grievance redress mechanism. All grievances will be registered with the Central Feedback Desk (CFD) and logged in the Central Grievance Log. Contractor will fill out the grievance registration template provided in Appendix 2 of this ESMP on a regular basis and will make it a part of the monthly reports to the contractor

The Contractor shall provide monthly reports on its management and monitoring of the working conditions of direct and indirect employees on the work site and ensure that systems are in place to monitor compliance with labor and health and safety standards.

The contractor shall:

- Ensure that all workers are required to comply with all national/federal legislation on labor and health and safety, as well as any other relevant standards including the World Bank Group EHS guidelines;;
- Be responsible for all activities undertaken by his subcontractors;
- Maintain regular effective two-way communication with all workers, sharing information and assisting in dealing with any unforeseen problems promptly.
- Exchange information and request any plans from sub-contractors which deals with significant health and safety hazards and risks created by or associated with their work activities.

The recommendations and proposed mitigation measures will be attached to the tendering documentation and subsequently the contract with the Contractor. The ESMP is a part of the work program and as such, it needs to be addressed to the Contractor and carried out as required.

7.2. MITIGATION MEASURES IN CONSTRUCTION PHASE

7.2.1. Environmental Management

During the construction phase, the Contractor shall award the responsibility of supervising everyday compliance with ESMP to a senior engineer.

The Contractor will be responsible for the implementation of all measures included in the ESMP for all activities undertaken in terms of the construction contract (including work undertaken by sub-contractors).

Compliance of Contractors with provision of ESMP will be assessed by the Construction Supervisor appointed by PC Roads FBH, in accordance with the Ordinance on Construction Site Development, Obligatory Documents on Construction Site and Participants in Construction Work (Official Gazette of the FBH, No. 48/09, 75/09 and 93/12).

Compliance reviews will be submitted by Contractor to PC Roads FBH on a monthly basis. Non-conformances, incidents and deviations from the ESMP will be communicated to PC Roads FBH, or the Supervisor, as soon as possible, within 24 hours from the time of

occurrence, where PC Roads FBH shall react to the occurrence a.s.a.p. and impose corrective measures with a deadline for undertaking them.

All mitigation measures are specified in the Table 7. Environmental and Social Impacts Management Plan.

7.2.2. Health and Safety

Works on the rehabilitation of the bridge may pose health and safety risks for construction workers and visitors to the construction site. Road users and construction workers will be exposed to the risk of: biophysical health risk factors, (e.g. noise, dust, chemicals, construction material, solid waste, wastewater, vector transmitted diseases etc.), and (ii) road accidents from construction traffic.

Therefore, the Contractor is obliged to:

- Ensure that only properly trained/licensed people operate heavy machinery;
- Implement suitable safety standards for all workers and site visitors, which should not be less than those laid down in the international standards⁷ in addition to complying with the national standards the FBH,
- Make sure basic safety features for visitors are in place, such as construction warning signs for protecting unsafe areas from being accessed or the obligation for every visitor to wear a helmet before entering the construction site
- Provide the workers with a safe and healthy work environment, taking into account inherent risks in its particular road rehabilitation activity and specific classes of hazards in the work areas,
- Provide personal protective equipment (PPE) for workers, such as safety boots, helmets, masks, gloves, protective clothing, goggles, full-face eye shields, and ear protection. Maintain the PPE properly by cleaning dirty equipment and by replacing damaged equipment with new one.
- Safety procedures include provision of information, training and protective clothing to workers involved in hazardous operations and proper performance of their job.
- Appoint an environment, health and safety manager to look after the health and safety of the workers.

⁷ - *Occupational Safety and Health Convention, 1981 (No. 155)*

- *Promotional Framework for Occupational Safety and Health Convention, 2006 (No. 187)*

- *The Safety and Health at Work Directive 89/391/EEC*

- *and other Recommendations and EU directives*

7.2.2.1. Safety Engagements

The Contract should ensure that all possible risks in the course of work are eliminated or reduced to a minimum. In order to prevent the possibility of higher-scale accidents it is necessary to plan and develop the measures to help reduce the adverse impacts. The Contractor's duty is to create a Management Plan in Case of Accidents (MPCA).

The MPCA should include organizational structure, responsibilities, procedures, communication, training, resources and other measures needed to provide appropriate reaction of the Contractor in case of accidents which might occur during the project. The most important items of the MPCA are as follows:

- Identify potential hazards and large-scale accidents,
- General procedures for all emergencies and accidents that might occur during the project due to natural disasters, defects on equipment or human errors,
- Description of preventive measures against accidents,
- Workers training for their roles and responsibilities when accident occurs,
- Determining responsible person at the spot,
- Urgent communication procedures,
- Information and contacts of important local authorities and emergency services,
- Internal and external alarming,
- Response plans for specific types of hazards, for example medical assistance, fire etc.

The MPCA should include:

- Spill Response Plan,
- Emergency Preparedness,
- Response Plan to Accidents.

The contractor is also obliged to:

- The contractor should provide portable toilets at the construction sites, if about 25 people are working the whole day for a month. Location of portable facilities should be at least 6 m away from storm drain system and surface waters. These portable toilets should be cleaned once a day and all the sewerage should be pumped from the collection tank once a day and should be brought to the common septic tank for further treatment.
- Contractor should provide bottled drinking water facilities to the construction workers at all the construction sites.

7.2.2.2. First Aid

The Contractor shall:

- Ensure that facilities that provide health care and first aid are easily accessible. Appropriately equipped first aid stations are to be easily accessible in the whole work area;
- Documenting and reporting accidents, diseases and incidents on workplace;
- Prevent accidents, injuries and diseases originating from, in connection with or arising in the course of work, reducing as much as possible the possible cause of danger in the way which is in accordance with good international practice;
- Identify potential dangers for works, particularly those that might pose threat to life, and provide the necessary preventive and protective measures;
- Ensure that construction site drivers strictly comply with the rules of driving;
- Ensure appropriate lighting alongside roads.

7.2.3. Traffic and Road Safety

The Contractor shall develop the CSOP which includes preparation and organization of construction site during and after construction, including roads on the construction site i.e. Traffic Management Plan (TMP). Traffic on construction site is to be regulated the same way as public traffic roads.

The Contractor is obliged to:

- Prepare and deliver the TMP to PC Roads FBH for its approval, no later than 30 days upon the beginning of works on any component of the project included in traffic redirection and management.
- For the purpose of uninterrupted traffic movement during the reconstruction of the crossroads, include in TMP the following parts: detailed drawings of traffic solutions by showing all bypasses, temporary roads, temporary turns, necessary barricades, signalization/lighting, traffic signs etc.
- Ensure signs in strategic parts of traffic roads.
- Install and maintain a sign on each important crossroads, on roads which will be used during reconstruction works, which will clearly indicate the following data in a local language:
 - Location: station label and settlement name,
 - Duration of construction,
 - Period of the proposed bypass/alternative road,
 - Map of the proposed bypass,

- Name and contact address/telephone number of responsible personnel,
- Name and contact address/telephone number of contractor,
- Sincere apology for the caused inconvenience.

TMP should include details about the following:

- Construction plan by phases,
- Beginning and duration of works,
- Overview of the existing conditions near the construction site,
- Identification of affected areas,
- Mitigation measures
- Plan of public transport, for example, timetable, change of timetable, disturbance and the like;
- Circulation plans, including zones of entry and exit, routes for towing of material, turnaround points, parking areas, zones of interlocking with other traffic roads etc.,
- Routes for pedestrians and vehicles,
- Traffic controls for each expected intervention, including illustrations of barriers, paths, signalization plan, warning signs etc.,
- Requirements for special vehicles, for example, those of large dimensions,
- Construction works paths (access, ramps, loading, unloading),
- Connection roads for supply vehicles and storage of material,
- Expected interaction of pedestrians and vehicles,
- Roles and responsibilities of persons on construction site regarding traffic management,
- Instructions on the procedures regarding traffic control, including urgent situations.

TMP should also include appropriate communication with affected population about traffic and timely information of traffic changes/road blockage.

TMP should be monitored on a regular basis (responsibility of the supervision engineer) and audited to ensure effective implementation and to take into consideration any changes on construction site. All workers on construction site should get acquainted with the TMP.

7.2.4. Construction Site Safety

The Contractor shall secure the construction site. The construction site should be accompanied with a board with information on works and participants in construction (investor's name, contractor's name, project designer's name, name and type of construction being built, beginning and end of works). These measures are necessary so the

Contractor could ensure safety of construction site and prohibit entry ensure of unauthorized persons.

The *Elaborate on safety on work* and *Elaborate on protection from fires and explosions* should include detailed measures of safety on construction site in order to ensure safety of location and remove possible risks and adverse impacts on employees and unauthorized persons.

7.2.5. Land Acquisition, Involuntary Resettlement and Economic Displacement

At this moment, it is not expected that any private land will have to be occupied during construction for lodging machines and disposal of materials. However, if temporary occupation of private land is needed during construction, this will be agreed upon with respective owners and the compensation will be paid in accordance with provisions determined in the RPF before the land is accessed. The contractor is responsible for keeping the works within the right of way.

7.3. MITIGATION MEASURES IN OPERATIONAL PHASE

It is required from PC Roads FBH to undertake the instructions given in the Table 7. Environmental and Social Impacts Management Plan in operational phase.

7.4. SUMMARY OF MITIGATION MEASURES

Table 7: Environmental and Social Impacts Management Plan

Impact/Problem	Mitigation Measures	Cost Assessment (US\$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
PRE-CONSTRUCTION PHASE						
<ul style="list-style-type: none"> ▪ Impacts on living conditions 	<ul style="list-style-type: none"> ▪ Informing the local communities on the extent of works and duration prior to the commencement of construction works. via local newspapers, the municipality’s notice board and website and via PC Roads’ website as soon as the contract is signed ▪ informing road users via the construction site information board, and an information leaflet at the construction site 	Internal resources	Internal resources	PC Roads FBH	PC Roads FBH	<ul style="list-style-type: none"> ▪ Impacts on living conditions ▪ Road users are orderly informed about construction works on roads via radio news and auto-moto club’s press releases.
<ul style="list-style-type: none"> ▪ Compliance with national legislation 	<ul style="list-style-type: none"> ▪ Obtaining all necessary permits for Project implementation. 	Internal resources	Internal resources	PC Roads FBH + Project designer	Competent body for issuing the permit	<ul style="list-style-type: none"> ▪ Compliance with national legislation

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Impact/Problem	Mitigation Measures	Cost Assessment (US\$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
<ul style="list-style-type: none"> Restrictions on land use and damages on private property 	<ul style="list-style-type: none"> Avoid private properties where possible; The Contractor will organize the construction site in collaboration and agreement with Jajce municipality; In case occasional restrictions on land use cannot be avoided, compensation will be provided to affected owners/users (application of RPF), as well as compensation for loss of the possibility to continue to use land as intended. 	Internal resources	Internal resources	Contractor + PC Roads FBH	PC Roads FBH	
<ul style="list-style-type: none"> Job creation and impacts on local business 	<ul style="list-style-type: none"> Informing the public in advance about the construction works, in order to enable businesses and workforce in the area to prepare for the demand on the market via local newspapers, the municipality's notice board and website and via PC Roads' website as soon as the contract is signed 	Internal resources	Internal resources	Contractor + PC Roads FBH	Contractor + PC Roads FBH	Applicable if the Contractor needs new workforce.
CONSTRUCTION PHASE						
<ul style="list-style-type: none"> Access restriction 	<ul style="list-style-type: none"> Implementation of the provisions on providing timely information to citizens through the media about upcoming construction works, expected duration of the works, alternative routes, etc. via an information leaflet on the construction site, local newspapers, the municipality's notice board and website and via PC Roads' website as soon as the contract is signed Implementation of TMP. Clear signs posted. Notifications made through media or other road safety clubs on road closure. Area where materials and equipment are stored are 	Included in construction works	Included in supervision	Contractor	Supervisory body*	

* Supervisor shall be a Consultant appointed by PC Road FBH according to Federal Legislation.

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Impact/Problem	Mitigation Measures	Cost Assessment (US\$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
	clearly marked and closed off to unauthorized access.					
<ul style="list-style-type: none"> Impacts on living conditions of local community 	<ul style="list-style-type: none"> Providing timely information to the citizens on any type of disruption and inconvenience; via an information leaflet on the construction site, local newspapers, the municipality's notice board and website and via PC Roads' website, as soon as the type and duration of the disruption and inconvenience is known. Implementation of TMP; Implementation of CSOP; Implementation of ESMP provisions. 	Included in construction works	Included in supervision	PC Roads FBH (providing information to the citizens) + Contractor (following the provisions of the TMP, CSOP, ESMP)	Supervisory body*	
<ul style="list-style-type: none"> Temporary occupation of privately owned land plots for the purpose of construction of access roads and placement of staff, machines and material. 	<ul style="list-style-type: none"> Avoidance of temporary occupation of privately owned plots; In case avoidance is not possible, implementation of RPF on temporary occupation. 	Internal resources	Internal resources	PC Roads FBH	PC Roads FBH*	
<ul style="list-style-type: none"> Impact on the Pliva River 	<ul style="list-style-type: none"> Infill must be controlled in order not to endanger the flow profile of the Pliva River control Ensure that the sandblasting of the bridge construction 	Included in construction	Included in supervision	Contractor	Supervisory body*	

* Supervisory body shall be a Consultant appointed by PC Roads FBH according to Federal legislative

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Impact/Problem	Mitigation Measures	Cost Assessment (US\$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
	and demolition works are carried out with protective covers, so waste cannot reach the river; and that the dripping of paint is caught in tarps.	works				
<ul style="list-style-type: none"> ▪ Impact on fish habitat and water quality 	<ul style="list-style-type: none"> ▪ In order to avoid negative impacts the following mitigation measures can be used: <ul style="list-style-type: none"> - Limit the execution of works outside the spawning fish season; - Ensure that concrete works are isolated from watercourses; - Ensure that dirty water from machines, during the rehabilitation works, is collected and disposed properly - Ensure that equipment is not washed near the watercourse. - Ensure that the sandblasting of the bridge construction and demolition works are carried out with protective covers, so waste cannot reach the river; and that the dripping of paint is caught in tarps. - Ensure no changes to the flow of the river are caused by diversions during works on foundations - Respect all protection provisions in line with the local regulations that call for protection of the Pliva river and riverbanks 	Included in construction works	Included in supervision	Contractor	Supervisory body*	
<ul style="list-style-type: none"> ▪ Impacts on local traffic (increase of local traffic, including heavy machinery and trucks), operation of roads with only one lane causing 	<ul style="list-style-type: none"> ▪ Implementation of TMP; ▪ Introduction of appropriate signalization and warning signs; ▪ Timely information to public on traffic disruptions. 	Included in construction works	Included in supervision	Contractor	Supervisory body*	In collaboration with the local Ministry of the Interior Relations

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Impact/Problem	Mitigation Measures	Cost Assessment (US\$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
traffic delays and limited access						and BHAMK
<ul style="list-style-type: none"> ▪ Temporary occupation of privately owned land plots for the purpose of placement of staff, machines and material 	<ul style="list-style-type: none"> ▪ Avoidance of the use of private lands; ▪ Implementation of RPF. 	Internal resources	Internal resources	PC Roads FBH	PC Roads FBH	
<ul style="list-style-type: none"> ▪ Air emissions: <ul style="list-style-type: none"> - exhaust gasses; - dust generation 	<ul style="list-style-type: none"> ▪ High quality fossil fuels (with low percentage of sulphur and lead) need to be used for construction machinery and equipment; ▪ All machines and vehicles to be used in construction/ reconstruction/ rehabilitation activities must have use permit; ▪ Vehicles need to be regularly maintained; ▪ Equipment with installed filters to reduce soot emission needs to be used; ▪ When not in use the equipment and machinery need to be shut down; ▪ Maximum speed of the vehicle on unpaved roads should be restricted to 20 km/h; ▪ Moistening/ wetting the site to prevent dust occurrence (in areas with dry soils or where activities generate dust); ▪ Sand and gravel materials need to be transported in 	Included in construction works	Included in supervision	Contractor	Supervisory body*	

* Supervisor shall be a Consultant appointed by PC Road FBH according to Federal Legislation.

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Impact/Problem	Mitigation Measures	Cost Assessment (US\$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
	covered trucks.					
<ul style="list-style-type: none"> ▪ Increased level of noise and vibration: - noise emission and noise disturbance; - vibration 	<ul style="list-style-type: none"> ▪ Restriction of works to period of day only (period of day: 06:00 to 22:00, period of night: 22:00-06:00; or agreed with the local community) ▪ In the case of noise complaints by local residents, simultaneous use of machines that generate noise over 70 dB needs to be limited; ▪ In the case of noise complaints by local residents, number of trucks per day visiting the site needs to be reduced; ▪ All machines and vehicles to be used in construction/ reconstruction/ rehabilitation activities must have use permit; ▪ When not in use the equipment and machinery need to be shut down; ▪ Maximum speed of the vehicle on unpaved roads should be restricted to 20 km/h. 	Included in construction works	Included in supervision	Contractor	Supervisory body*	
<ul style="list-style-type: none"> ▪ Emissions into water: - possible contamination of surface water 	<ul style="list-style-type: none"> ▪ Ensure there is an emergency plan to contain all leaks and spills that result from an accident. ▪ Prevent any repairs, handling of machinery, fuels or lubricants in areas that are not designated for such use. ▪ Proper waste disposal and separation of hazardous waste is required, as well as the engagement of authorized companies for final waste disposal; ▪ Oil and fuel collection systems to be fitted to prevent leakage; ▪ Vehicles and machines need to be regularly maintained to prevent leakage. 	Included in construction works	Included in supervision	Contractor	Supervisory body*	

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Impact/Problem	Mitigation Measures	Cost Assessment (US\$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
<ul style="list-style-type: none"> ▪ Soil degradation and emissions to soil: - soil erosion; - soil contamination by oils, fuels and other hazardous substances 	<ul style="list-style-type: none"> ▪ Proper waste disposal; separation of hazardous waste; engagement of authorized companies for final waste disposal; ▪ Track of the final disposal sites especially for removed asphalt; note/record of the waste amounts; ▪ Oil and fuel collection systems to be fitted to prevent leakage 	Included in construction works	Included in supervision	Contractor	Supervisory body*	
<ul style="list-style-type: none"> ▪ Degradation of biological and ecological resources: - destruction of aquatic habitat due to changes in water flow and quality in terms of sediment load 	<ul style="list-style-type: none"> ▪ Prevent and control oil, fuel, and chemical spillages that can find their way to the streams; ▪ Works in the riverbed must be minimized and restricted; ▪ The land determined for use by the Project can only be used for the construction activities and no other land is available for i.e. storage of building material, parking of the heavy machinery etc. in terms of soil disruption. 	Included in construction works	Included in supervision	Contractor	Supervisory body*	
<ul style="list-style-type: none"> ▪ Inadequate waste handling 	<ul style="list-style-type: none"> ▪ Implementation of WMP that shall ensure environmentally sound collection of waste, its storage, transport and final disposal, and primarily reuse / recycling. ▪ No clandestine waste disposal will be allowed on site, including open burning of wastes. ▪ The waste should be stored for a short period of time and should be removed as soon as possible. ▪ The waste should be primarily recycled or reused where possible and then finally disposed ▪ No open burning of wastes is allowed on site 	Included in construction works	Included in supervision	Contractor	Supervisory body*	+ local waste management operator

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Impact/Problem	Mitigation Measures	Cost Assessment (US\$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
	<ul style="list-style-type: none"> - Waste that cannot be reused should be handed over to a licensed company or agent (amounts are to be recorded as well as types of handling actions). ▪ Disposal sites of construction material are determined by the municipality and should be handled in the most appropriate environmental manner. 					
▪ Inadequate workers safety	<ul style="list-style-type: none"> ▪ Implementation of work safety measures: <ul style="list-style-type: none"> - Provide workers with a safe and healthy work environment, as defined in the Occupational Health and Safety Management Plan (OHSMP) ,developed as a part of the Construction Site Organization Plan (CSOP) that will be developed for the Project - Provide personal protective equipment, - Respect safety procedures, - Provide portable toilets, - Provide drinking water 	Included in construction works	Included in supervision	Contractor	Supervisory body*	
▪ Accidental situations i.e. spills, leakage of oils, fats, fuels and similar hazardous materials	<ul style="list-style-type: none"> ▪ Implementation of Environmental Management Plan which includes: <ul style="list-style-type: none"> - Spill Response Plan, - Emergency Preparedness and Response Plan. ▪ Implementation of Management Plan of Fire and Explosion ▪ Implementation of Labor Protection Law 	Included in construction works	Included in supervision	Contractor	Supervisory body*	
▪ Materials supply and transport	<ul style="list-style-type: none"> ▪ Implementation of CSOP to ensure materials are transported in covered vehicles to reduce impacts on environment 	Included in construction	Included in supervision	Contractor	Supervisory body**	

* Supervisor shall be a Consultant appointed by PC Road FBH according to Federal Legislation.

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Impact/Problem	Mitigation Measures	Cost Assessment (US\$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
		works				
<ul style="list-style-type: none"> Paving of the bridges and painting fences on bridges 	<ul style="list-style-type: none"> Ensure that the asphalt is not deposited on purpose or accidentally into watercourses; Ensure that the sandblasting of the bridge construction is carried out with protective covers and the dripping of paint is caught in tarps. 	Included in construction works	Included in supervision	Contractor	Supervisory body*	
<ul style="list-style-type: none"> Impact to the flow profile of river Pliva 	<ul style="list-style-type: none"> Works should be carried out in the period of low water; Strictly control work of excavation around foundations; Restrict the movement of vehicles in the river bed; Excavated material cannot be disposed in the riverbed or on riverbanks. No waste disposal in river. No cutting off of flow of the river in entirety Maintain high standard of protection of the riverbanks and river profile during works. 	Included in construction works	Included in supervision	Contractor	Supervisory body*	
CHANCE-FIND PROCEDURES DURING CONSTRUCTION PHASE						
<ul style="list-style-type: none"> Impacts on cultural heritage and/or UXO 	<ul style="list-style-type: none"> If archaeological findings or other chance finds appear on or near construction site immediate work suspension and local authorities notification is required; 	Included in construction works	Included in supervision	Contractor	Supervisory body*	In case of finding cultural heritage, supervision is implemented by the competent

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Impact/Problem	Mitigation Measures	Cost Assessment (US\$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
						institution
OPERATION PHASE						
<ul style="list-style-type: none"> Problems due to lack of maintenance 	<ul style="list-style-type: none"> Regular road/bridge maintenance works 	Included in maintenance works	Internal resources	Contractor for maintenance works	PC Roads FBH	
<ul style="list-style-type: none"> Contamination of river Pliva 	<ul style="list-style-type: none"> Installation of oil separators in accordance with EN ISO 858-1 and 858-2 Regular maintenance of oil separators in accordance with maintenance Department of PC Roads of FBIH 	Included in maintenance works	Internal resources	Contractor for maintenance works	PC Roads FBH	
<ul style="list-style-type: none"> Decrease in road safety due to the increase of traffic and speed 	<ul style="list-style-type: none"> Regular maintenance of road safety equipment and signage 	Incl. in maintenance works	Internal resources	Contractor for maintenance works	PC Roads FBH	

8. ENVIRONMENTAL MONITORING PROGRAM

The table below presents monitoring plan necessary for construction site – developed in connection with mitigation measures to avoid or reduce negative impact.

Prior to commencement of works, in accordance with requirements of the ESMP, and a minimum of monitoring requirements, described in table below, without limitation to these requirements, the Contractor shall prepare detailed list of mitigation measures and parameters to be monitored and prepare the site-specific baseline data as foreseen in the monitoring plan below.

The monitoring plan on construction site will be used by Supervision Engineers of PC Roads FBH. These signed lists will be forwarded to PC Roads FBH, who will be responsible for monitoring and reporting about the compliance.

PC Roads FBH will maintain a registry of grievances, which will contain all information on grievances or complaints received by the community or other interested parties. That will include: type of grievance, time and actions for their resolution and outcome.

Table 8: Environmental and Social Monitoring Program

Potential impact	Which parameter is to be monitored?	Where will the monitoring be performed?	How will the monitoring be performed?	When will the monitoring be performed?	Cost assessment (US\$)		Responsibility	
					Implementation	Operative	Implementation	Operative
PRE-CONSTRUCTION PHASE								
▪ Job creation and impacts on local businesses	<ul style="list-style-type: none"> ▪ Number of employed persons from local communities ▪ Timely informing the local communities 	Wider area of construction	Inspection	Prior to construction	Included in performance	Included in performance	Contractor	Contractor
▪ Temporary occupation of privately owned land plots for the purpose of construction of access roads and placement of Staff, machines and material	<ul style="list-style-type: none"> ▪ Implementation of RPF provisions 	Construction site	Reports from contractor	Prior to construction and during construction when necessary	Included in construction contract	Included in construction contract	Contractor	Contractor
CONSTRUCTION PHASE								
▪ Access restrictions	<ul style="list-style-type: none"> ▪ Provided alternative access, ▪ TMP in place, ▪ Implementation of RPF, provisions on compensation procedures for businesses affected by access restrictions and livelihood restoration. 	Construction site	Visual inspection	Random checks at least once a week during the construction	Included in supervision	Included in supervision	Supervisory body + PC Roads FBH	Supervisory body + PC Roads FBH
▪ Restrictions on land use and damage to the private property (agricultural plots,	<ul style="list-style-type: none"> ▪ CSOP in place, ▪ Implementation of RPF provisions on compensation procedures in case occasional 	Construction site	Visual inspection + Central Grievance	Prior to construction and random checks at least once a week	Included in supervision	Included in supervision	Supervisory body + PC Roads	Supervisory body + PC Roads

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Potential impact	Which parameter is to be monitored?	Where will the monitoring be performed?	How will the monitoring be performed?	When will the monitoring be performed?	Cost assessment (US\$)		Responsibility	
					Implementation	Operative	Implementation	Operative
horizontal infrastructure, fences and railings) due to disposal of construction waste, work camps and parks of heavy machinery	land use cannot be avoided, compensation will be provided to affected owners/users ▪ grievances		Log	during the construction			FBH	FBH
▪ Impacts on local traffic (increase of local traffic, including heavy machinery and trucks, operation of roads with only one lane causing traffic delays and limited access)	▪ TMP in place ▪ Traffic patterns, ▪ Timely information to the citizens	On construction site and nearby	Visual inspection and inspection	random checks during the week	Included in supervision	Included in supervision	Supervisory body	Supervisory body
▪ Air emissions: - exhaust gasses; - dust generation	▪ Level of dust (amount of particles of sediment and floating particles) ▪ Emissions of exhaust gases from vehicles and equipment ▪ (SO ₂ , NO ₂ , dim and PM ₁₀)	Construction site	Measuring devices	As a baseline and during construction when needed and upon complaints by the citizens	-	500 USD/measuring	Contractor	Authorized laboratory
▪ Increased level of noise and vibration: - noise levels - vibration	▪ Level of noise	In populated places near the construction site	Measuring devices	Upon order by supervisory organ or upon complaints by the citizens	-	500 USD /measuring	Contractor + Supervision	Authorized laboratory
▪ Emissions into water: - possible contamination of surface water	▪ Analysis of parameters of surface water quality: - Chemical analysis (PH, turbidity, conductivity, temperature, suspended	In watercourse near construction site (Pliva	Standard laboratory equipment and methods	As a baseline and upon order by supervisory organ or upon complaints by the	-	1000 USD /measuring	Contractor + Supervision	Authorized laboratory

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Potential impact	Which parameter is to be monitored?	Where will the monitoring be performed?	How will the monitoring be performed?	When will the monitoring be performed?	Cost assessment (US\$)		Responsibility	
					Implementation	Operative	Implementation	Operative
	particles, COD, BOD, ingredients with nitrogen) - Standard bacteriological analyses	River) downstream	of water quality monitoring	citizens				
▪ Pollution of surface watercourses	▪ Presence of oil film in surface watercourses	In watercourse near construction site (Pliva River) downstream	Visual inspection + Standard laboratory equipment and methods of water quality monitoring	Upon order by supervisory organ or upon complaints by the citizens	-	500 USD /measuring	Contractor + Supervision	Authorized laboratory
Soil pollution	▪ Soil quality, including, PH, heavy metals, phosphorus, nitrogen, Na, Ca, salts , PAHs hydrocarbons	On representative plots of land near construction sites	Taking samples and standard laboratory analyses	As a baseline and upon order by supervisory organ or upon complaints by the citizens	-	500 USD /measuring	Contractor + Supervision	Authorized laboratory
▪ Emissions into water and soil due to improper waste handling	▪ CSOP in place, ▪ WMP in place ▪ Placing protective covers during demolition works and sandblasting works	Construction site	Visual inspection, disposal records or receipts from landfills	Daily	Included in performance	Included in performance	Contractor + Supervision	Contractor

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Potential impact	Which parameter is to be monitored?	Where will the monitoring be performed?	How will the monitoring be performed?	When will the monitoring be performed?	Cost assessment (US\$)		Responsibility	
					Implementation	Operative	Implementation	Operative
<ul style="list-style-type: none"> ▪ Degradation of biological and ecological resources 	<ul style="list-style-type: none"> ▪ Survey of the site for any endemic or endangered species 	In the zone of corridors of direct and indirect impacts	Field recordings and incorporation of the findings in the ESMP	As a baseline	-	-	Contractor	Authorized institution
<ul style="list-style-type: none"> ▪ Waste management 	<ul style="list-style-type: none"> ▪ Implementation of WMP 	Construction site	Visual inspection, disposal records or receipts from landfills	Regularly during construction, as appropriate. Amount and disposal records internal reports will be made daily and monthly	Included in performance	Included in performance	Contractor + Supervision	Contractor
<ul style="list-style-type: none"> ▪ Accidental situations i.e. spills, leakage 	<ul style="list-style-type: none"> ▪ Implementation of EMP which includes: <ul style="list-style-type: none"> - Spill Response Plan, - Emergency Preparedness and Response Plan 	Construction site	Visual inspection	Daily	Included in performance	Included in performance	Contractor + Supervision	Contractor
<ul style="list-style-type: none"> ▪ Materials supply 	<ul style="list-style-type: none"> ▪ Implementation of CSOP (the origin of material, material 	Construction	Reports	Daily	Included in performance	Included in performance	Contractor	Contractor

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Potential impact	Which parameter is to be monitored?	Where will the monitoring be performed?	How will the monitoring be performed?	When will the monitoring be performed?	Cost assessment (US\$)		Responsibility	
					Implementation	Operative	Implementation	Operative
	approvals etc.)	site					+ Supervision	
▪ Material transport	▪ Implementation of CSOP (the origin of material, licenses etc.)	Construction site	Visual inspection	Daily	Included in performance	Included in performance	Contractor + Supervision	Contractor
▪ Workers safety	▪ Implementation of work safety measures (protection equipment, toilets, drinkable water etc.)	Construction site	Visual inspection	Daily	Included in performance	Included in performance	Contractor + Supervision	Contractor
▪ River bed and river flow	<ul style="list-style-type: none"> ▪ Changes in the river flow, including flooding, water retention or complete cutting off of river flow during works. ▪ Changes to the river banks ▪ Disposal of wastes or materials on river banks or in river ▪ Unauthorized activities being conducted within the river bed 	Construction site	Visual inspection	Daily	Included in performance	Included in performance	Contractor + Supervision	Contractor
OPERATION PHASE								
▪ Water emissions	<ul style="list-style-type: none"> ▪ Analysis of the water quality parameters: ▪ Chemical analysis (PH, turbidity, conductivity, temperature, suspended particles, COD, BOD, ingredients with nitrogen, total 	At the treated water outlet	Sampling	Once a year	Internal resources	1000 USD/sample	PC Roads FBH	Licensed laboratory

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Potential impact	Which parameter is to be monitored?	Where will the monitoring be performed?	How will the monitoring be performed?	When will the monitoring be performed?	Cost assessment (US\$)		Responsibility	
					Implementation	Operative	Implementation	Operative
	fats and oils, mineral oils); ▪ Implementation of World Bank Occupational Health and Safety Guidelines							

Note: All mitigation measures and parameters to be monitored should be included in total price of works performance. The table includes additionally provided prices of sampling and laboratory testing, solely as information for assessment of overall costs of construction.

9. IMPLEMENTATION AND REPORTING

9.1. PROJECT IMPLEMENTATION

PC Roads FBH is the implementer of the project and will be responsible for the implementation and compliance of the project in line with ESMP.

The public has the right to participate directly or indirectly, with a possibility to state their interests and opinion in decision-making process during all project activities.

The application of all identified environmental and social mitigation measures and the environmental monitoring program will be ensured. The Contractor will be responsible for the implementation of the environmental mitigation measures during construction. The contracted supervisor will employ environmental experts to supervise the implementation of Contractor's responsibilities, and will be in communication with the. PC Roads FBH will constitute a Grievances Committee which will receive all grievances during Project implementation in accordance with grievance mechanisms as prescribed in the Environmental Management Plan and Environmental and Social Management Framework for the Program of Modernization of Major roads of the FBH (ESMF). Furthermore, the Project Implementation Unit of PC Roads FBH includes an environmental and a social expert. During project implementation, the Investor will supervise compliance of the Contractor with provisions and ESMP.

Upon project completion, PC Roads FBH will be in charge of structure's management and maintenance. Regular and timely payment will be carried out in accordance with monitoring plan.

9.2. REPORTING PROCESS

9.2.1. Contractor to PC Roads FBH

The Contractor shall prepare a Report on compliance with ESMP in form of a monthly progress report and submit it to PC Roads FBH in a local language (C/S/B and in English, in analogue and digital form.

In case of any accidental situations or jeopardizing the environment and society the reporting process must be immediate. The Contractor is obliged to inform the PC Roads FBH and local community immediately after any accidental situations that happened over the phone +387 33 250 370 or via email form at the PC Roads FBH website: <http://www.jpfbih.ba/ba/kontakti/kontakti.shtml>.

The Contractor's reports to PC Roads FBH are to include a list and description of the performed activities, as well as recommendations and planned future activities and protection measures.

9.2.2. Supervision Engineer to PC Roads FBH

The Supervision Engineer shall prepare a Report on compliance with ESMP in form of a monthly progress report and submit it to PC Roads FBH in a local language (C/S/B and in English, in analogue and digital form.

9.2.3. PC Roads FBH to WB

PC Roads FBH shall prepare Annual Environmental Health and Safety Reports (AEHS)⁸, including monitoring indicators and reports on the implementation of their requirements set in ESPM and submit them to the World Bank for review.

In case of higher-scale accidents or deaths on construction site, PC Roads FBH shall promptly notify the World Bank thereof.

⁸ *Annual Environmental Health and Safety*

10. PUBLIC DISCUSSION AND INFORMATION DISCLOSURE

10.1. PUBLIC CONSULTATION

Public consultation of the subject ESMP was organized in Jajce after the WB and PC Roads FBH approved the draft of the ESMP.

The document was published and available to the public in a local language on the website of PC Roads FBH on 21.02.2018. Public consultations were announced on the website PC Roads FBH and on the website of Jajce Municipality on 21.02.2018. ie 04.03.2018, and on 26.02.2018. in local newspapers (Dnevni Avaz). The public consultations were held on 13.03.2018. in Jajce, and the Minutes of the Public Discussion on ESMP is an Appendix 3 of this document. Public consultations were attended by 11 interested parties.

The record on public discussion, that is, grievances presented at the public discussion shall be recorded in the Grievance Register, and opinions and suggestions of the public shall be integrated into the final ESMP.

After public discussion the documents is disclosed again on the website of PC Roads of FBH.

10.2. INFORMATION DISCLOSURE

ESMP draft was available on the website of PC Roads of the (www.jpafbih.ba) in a local language and on the website of the World Bank in English. During the process of public consultation the interested public got all information regarding the project, including social and environmental issues.

During construction works the Contractors will submit monthly information to PC Roads FBH regarding process of work, which will be published on the websites of PC Roads FBH and BHAMK (Car Association of BH) regarding temporary traffic regulation.

Schedule of works and potential changes to the schedule will also be announced two weeks prior to the beginning of works on the website of PC Roads FBH and in local newspapers, radio and television stations for disclosure. The schedules will provide information on the beginning and end of works, which can impact the affected groups (such as changes to traffic/water/ regime of electric energy supply and access, noise and dust due to construction works).

10.2.1. Grievance Mechanisms

Besides the institutionally available ordinary and extraordinary legal remedy, and existing institutional channels, PC Roads FBH will ensure and form a special Grievance Redress Mechanism in collaboration and direct involvement of those municipalities under whose administrative authority the project is carried out, in this case with the Jajce municipality.

Grievance Redress Mechanism designed for this project is the **Central Feedback Desk (CFD)** at the level of the implementing agency PC Roads FBH which shall serve as both Project level information center and grievance mechanism, available to those affected by implementation of all project sub-components. The CFD shall serve the persons affected directly or indirectly by construction works.

The Grievance Registration Sheet (Appendix 1) as print out shall be available at municipal administration, at the construction site and in the offices of PC Roads FBH and shall be available for download on the website of JP Roads FBH (www.jpcfbih.ba) and the municipality's website.

The grievance can be logged in writing with the Contractor, at the construction site as well as in the contractor's offices. The contractor is obliged to hand out the Grievance Registration Sheet, explain the grievance mechanism to the concerned citizen and forward the filled in Grievance Form to the central Feedback Desk in PC Roads FBH. The grievance can also be filled in within PC Roads FBH, by phone, by fax, and by e-mailing it to the designated e-mail address zalbena@jpcfbih.ba, or by mail to the address Terezija 54, 71000 Sarajevo.

An information leaflet concerning the grievance mechanism will be available at the construction site at all times, weather the construction site is closed or open. The information leaflet will be plasticized and hung on the construction site information board to be available to road users at all times

All grievances will be recorded in the register and assigned a number, and acknowledged within 3 working days.

The CFD will make all reasonable efforts to address the complaint upon the acknowledgement of grievance. If the CFD is not able to address the issues raised by immediate corrective action, a long-term corrective action will be identified. The complainant will be informed about the proposed corrective action and follow-up of corrective action within 14 working days upon the acknowledgement of grievance.

If the particular issue raised through the grievance mechanism cannot be addressed or if action is not required, a detailed explanation/ justification will be provided to the complainant on why the issue was not addressed. The response will also contain an explanation on how the person/ organization that raised the complaint can proceed with the grievance in case the outcome is not satisfactory.

At all times, complainants may seek other legal remedies in accordance with the legal framework of FBiH.

11. Requirements for start of works

The Contractor shall establish all required baseline data before the commencement of works. The Baseline – Monitoring data shall include air quality data, surface water quality data, soil quality data, survey of the site for any endangered and endemic species and other environmental issues in zone of corridors of direct and indirect impacts. The Contractor is also obliged to ensure these measurements during and after completion of the construction works. The Contractor will ensure that the measurements are conducted by authorized agencies and that they are based on the findings and recommendations of a qualified expert.

The Contractor shall develop a Construction Site Organization Plan (CSOP) that is made up of:

- a. Implementation Plan of this ESMP,
- b. a detailed Waste Management Plan (WMP)]
- c. Study on Safety (includes Elaborate on Safety at Work and Elaborate on Protection From Fire and Explosions),
- d. Traffic Management Plan (TMP) must be developed, which will be created by the Contractor prior to the beginning of construction works.

These studies are to be developed in accordance with federal acts⁹, before starting the execution of works, while the Contractor's legal obligations defined in the Bidding Documents and Contract shall be based on the a provisions of this ESMP . The Contractor shall submit these studies to the PC Roads FBH supervisory engineer, Environmental and Social Specialists, before beginning of works, and the company has to accept and approve them prior to start of works.

Due to the time constraints related to the issuance of the bidding documents, the public consultations are to be held prior to the start of works but once the bidding documents have been issued; therefore the EMP included in the bidding documents may need to be subsequently updated after the consultations. The contractor will be obliged to follow the updated ESMP.

⁹ Provision on arrangements of construction site, mandatory documentation at the construction site and participants in construction, Official Gazette of FBH 48/09, 75/09 and 63/12

APPENDICES

APPENDIX 1. GRIEVANCE FORM

	REFERENCE NUMBER (Filled by the office)	
CATEGORY OF COMPLAINTS	A) Affected by expropriation	
	b) All others	
PARTICIPANT INFORMATION OF GRIEVANCE		
FULL NAME		
YEAR OF BIRTH		
GENDER	M	F
ADDRESS		
TELEPHONE/MOBILE NUMBER		
E-MAIL		
Description of Incident for Grievance (What happened? Where did it happen? Whom did it happen to? What is the result of the problem?)		
Date of the Incident?		
<ul style="list-style-type: none"> • One-time incident/grievance – Date: _____ • Happened more than once (How many times?) _____ • On-going (currently experiencing problem) 		
What would you like to see happen?		
DATE:	SIGNATURE:	
RETURN THIS FORM TO:	<p style="text-align: center;"><i>CENTRAL FEEDBACK DESK</i></p> <p style="text-align: center;"><i>PC ROADS OF THE FBH</i></p> <p style="text-align: center;"><i>Terezija 54,</i></p> <p style="text-align: center;"><i>71000 Sarajevo</i></p> <p style="text-align: center;"><i>Note: All copies are returned to PIU</i></p>	

APPENDIX 2. GRIEVANCE REGISTRATION TEMPLATE TABLE

No.	Date of receipt	Type of grievance (concerning expropriation, construction work or other)	Description of grievance	Complainant		Date of acknowledgement of receipt	Description of actions undertaken	Date of solvation of grievance resolution
				Status	Sex			

APPENDIX 3. REPORT ON PUBLIC DISCUSSION



JP Ceste Federacije BiH d.o.o. Sarajevo poziva sve zainteresirane subjekte, nevladine organizacije i stanovnike općine Jajce i naselja koja gravitiraju području namjeravane rehabilitacije mosta preko rijeke Plive, da uzmu učešće u

JAVNOJ RASPRAVI

o nacrtu Plana upravljanja okolišem i društvenim aspektima za projekat rehabilitacije mosta preko rijeke Plive

koja će se održati u Jajcu, u prostorijama općine Jajce 13.03.2018. godine u 11.00 sati, s ciljem davanja prijedloga i sugestija javnosti i uključivanja relevantnih pitanja u finalnu verziju dokumenta. Dokument je izrađen za potrebu Programa modernizacije magistralnih cesta u FBiH prema politikama kreditora. Nacrt dokumenta može se pronaći na službenoj stranici JP Ceste FBiH na sljedećem linku: <http://jpcfbih.ba/ba/aktivnosti/modernizacija-magistralnih-cesta/38> i na web stranici općine Jajce.

Svi zainteresirani subjekti koji nisu u mogućnosti da prisustvuju javnoj raspravi mogu svoje sugestije i komentare dostaviti do 13.03.2018. putem e-mail adrese: pamt@jpcfbih.ba.

Dnevni red:

1. Prezentacija Plana upravljanja okolišem i društvenim aspektima za projekat rehabilitacije mosta preko rijeke Plive.
2. Pitanja, diskusija, odgovori i objašnjenja

21.02.2018.

Announcement of Public discussion in the Local Newspaper „Dnevni Avaz“ (26.02.2018.)

oglasi

Na osnovu člana 57 Zakona o predložakom odgoju obrazovanja Tuzlanskog kantona („Službeni glasnik Tuzlanskog kantona“, broj 12/09), a shodno Odluci Upravnog odbora broj: 00-05-118/18 od 22.02.2018.g. Upravni odbor JU za predložak odgoja i obrazovanje „Dječija radost“ Doboj iziskuje: **JAVNE KONKURSIJSKE PISME ZAPOSLENIMA**

1. Odgovorniji – na potpisu realizacije Obrazovnog programa predškolskog odgoja i obrazovanja u trajanju od 180 sati, 3 (tri) izvršitelja, po osobi, na određeno vrijeme do 2,5 mjeseca.
 Cilj ove se konkursa za posla je: **U toku jednog mjeseca od objavljivanja – pripremiti predškolski odgoj, za realizaciju nastavak programa predškole za predškolske odgojne grupe i predškolske grupe od strane Pedagoškog zavoda Tuzla da se poboljša kvaliteta odgoja za realizaciju Obrazovnog programa predškolskog odgoja i obrazovanja predškolske i osnovne škole.**

2. Odgovorniji – izvršitelja: po osobi, na određeno vrijeme, do petnaest zaposlenika na bismatima, a najduže do 21.03.2018.godine.

Usveti konkursa koje kandidati mora ispunjavati:

- Da je državljanin Bosne i Hercegovine,
- Da je stariji od 18 godina,
- Da je adekvatno opremljen za obavljanje poslova predškolskih za radne mjeste na koje se konkuruje.
- Zaposlen VSS – VII stepeni prof. za predškolski odgoj ili odgovarajući predškolski ili drugi odgojni stepeni ili drugi stepeni školovanja sistema stručnjaka, od kojih na predškolski odgoj.
- Posjeduje stručni ispit za nastavni odgoj – obrazovni rad


Podnošenje prijavi:
 Uz prijavu kandidata, koji sadrži adresu, kontakt broj, biografiju i potpis na koji poziciju konkuruje, poručno se dostavlja:

- Unjerno o dostavljanju, na starije od 6 mjeseci,
- Imenit Miroslav Jajko, učitelj,
- Dokaz o stručnoj spremi (diplomu), na predškolni nastavnik Otvorjena i poboljšanja kvaliteta odgoja,
- Dokaz o posjedovanju stručnog ispit,
- Unjerno o nastavljanju (izdat od nadležnog organa, na starije od 3 mjeseci),
- Unjerno o savjetovanju krivičnog postupka (na starije od 3 mjeseci).

Svi dokumenti imaju biti originalni ili ovjereni kopije. Prijavni kandidati dužni je u roku od 7 dana prijemu priložiti ispravne odgovore.
 Kandidat odgovor mora biti dostavljen od dana objavljivanja.
 Cilj ove konkursa, nakon izvršene konkursa procedure, objavit će se na oglasnoj ploči Otvorjena. Prijave sa potpunim dokumentacijom šalju se pošto pošte poslati poručno na adresu: „JU za predškolski odgoj i obrazovanje „Dječija radost“, Tr. NK, Željiznica, – sa naznakom – „Prijava za konkursa – na starije““
 Neodgovornosti i nepotpuno prijave neće se razmatrati. Kandidati koji su bili ispravni dokumentacija na ovoj adresi.

Pročitatelj Upravnog odbora
 Abdulah Šabegović

U PRODAJI JE NOVI BROJ



ZDRAVLJE IZ PRIRODE

- Prirodna apoteka: KAKO LJECITI ISHRANOM RAK?
- Savjeti: ZA ŠTA SU KORISNE PRIRODNE TKANINE
- Škotiđanska Lin Kameron (48): Ja sam živi dokaz da je ulje kanabisa stopostotni ubica rakal

JOŠ PROCITAJTE

- MOĆ KADA JE DAVO DOŠAO U POSJETU: Davolji otisci u engleskom Devonu i dalje čekaju na objašnjenje
- Amerikanc Timoci Rej Braun (51), prvi pacijent koji je izliječen od side otvorio dušu: Rizik se isplatio
- Tajno ukletog Alkatraza izlaze na vidjelo: Zadržavani „gule“ kaznu i nakon smrti?

DARUJEMO KNJIGE, KRISTALE, BESPLATNE NATALNE KARTE, TRETMANE MASAŽE I HIDZAME ODGOVORE VIDOVLJAKA

www.aura.ba

JP CESTE FEDERACIJE BIH

JP Ceste Federacije BiH d.o.o. Sarajevo poziva na nabavku usluga: **obavljanje poslovanja i izvoženja radova** (K1) i **izvoženje radova** (K2) koje se odnose na radove na rekonstrukciji i održavanju objekata na području grada Bihać, od strane države.

JAVNOJ RASPISU
 o načinu Plana upravljanja objektima i održavanju objekata za projekat rekonstrukcije mosta preko rijeke Bosne

Koje će se održati u Bihaću, u prostorijama opštine Bihać, Ulica 1918. godine u 11:00 sati, u cilju davanja prijedloga i ispunjavanja javnosti i objavljujući odgovarajuće pitanje o firmi i ostalo dokumenta. Dokumenti se šalju na adresu: Program nabavke usluga i K1&K2 prema sadržajima konkursa. Način dokumenta može se pronaći na adresi: JP Ceste FBiH na adresi: www.jpceste.gov.ba ili na broj telefona: 061 421 1111.

Svi zainteresovani subjekti koji žele u mogućnosti da preuzmu javni raspis mogu svoje pitanje i komentare dostaviti do 13.03.2018. godine na e-mail adresu: jpc@jpceste.gov.ba

Dostavljeni rad:

- Prijedlog Plana upravljanja objektima i održavanju objekata za projekat rekonstrukcije mosta preko rijeke Bosne
- Prijedlog, sadržajna, odgovori i objašnjenja

BOSNA I HERCEGOVINA FEDERACIJA BOSNE I HERCEGOVINE KANTON SARAJEVO OPĆINSKI SUD U SARAJEVU

Odjeljenje za sporne male vrijednosti i izdati
 Broj: 65-8 Maj 600/17-6 16 Maj
 Sarajevo, 16.02.2018. godine

Općinski sud u Sarajevu, stručni saradnik Edvin Karalić, u pravnoj stvari između ZIRAATBANK BH D.D. Sarajevo, ul. Zmaja od Bosne 49C, kojeg zastupaju penzionerica izobrota Anel Kuruzović i Miro Sedović iz Sarajeva, protiv tuženih 1. Dženan Opačić iz Hadžića, ul. 27. Jula bb i 2. Bajro Nermić, na posljednjem pozivatelju prethodnih u Hadžićima, ul. Budimčević 42, radi isplate duga, v.a.p. 3.015,18 KM, na osnovu člana 348. stav 3. Zakona o parničnom postupku ("Službeni glasnik BiH" broj 33/03, 75/03, 15/06 i 59/15 u daljnjem tekstu ZPP):

OBJAVLJUJE
 - dostavu tužbe na odgovor drugostepenom Bajrić Nermiću -

Dana 19. 10. 2016. godine tužitelj je kod ovog suda podnio tužbu protiv tuženih, radi solidarne isplate duga u iznosu od 3.015,18 KM. U tužbenom zahtjevu se navodi da su tužitelj i prvostepeni dana 22. 11. 2013. godine zaključili ugovor o nerazmisljenom kreditu broj: 442/13 na iznos od 4.000,00 KM, temeljem kojeg je tužitelj odobrio tužbenom kreditu u iznosu od 4.000,00 KM, dok je drugostepeni kao solidarni jamac potpisao navedeni Ugovor, te na taj način preuzeo obaveznu da kao solidarni jamac odgovara na nezamisljene obaveze prvostepenog. Prvostepeni kao korisnik kredita nije vratio povrat novčanih sredstava na način i u odgovarajućem roku, zbog čega su je tužitelj uputio više opomena na način i u odgovarajućem roku, zbog čega su je tužitelj uputio više opomena sa pozivom da izmiri svoje dugovanje što prvostepeni nije učinio, kao što se nije učinio ni drugostepeni nakon opomene koju Obavijestio o slanju opomena. Prema samom obaveznom da tuženi nisu izvršili isplatu duga kao solidarni jamca, ni nakon opomeni opomena, nisu su slug isporučili, to tužitelj podnosi da sud nakon provedene naprave donese odluku kojom će obavezni tužbene da tuženi solidarno isplate iznos od 2.579,83 KM sa pripadajućim zakonskim kamatama počev od 31. 12. 2015. godine pa do isplate, da li su odgovorene kamate iznos od 148,63 KM sa zakonskom kamatom kamatama počev od 31. 12. 2015. godine pa do isplate, te sa imit dugopislog neplaćenog duga za iznosom kamata iznos od 285,92 KM kao i da tužitelj sadržavae troškove parničnog postupka, pod prethodnom privrednog izvršenja.

Ovim putem drugostepenom Bajrić Nermiću se dostavlja tužba od 19. 10. 2016. godine na odgovor u smislu odredbe člana 62. stav 2. ZPP-a, pa je drugostepeni dužan da u skladu sa odredbama člana 70. člana 71. ZPP-a naknadno u roku od 30 dana od dana prijema tužbe, dostavi sudu pismeni odgovor na tužbu. U odgovoru na tužbu sadržavae molbu izdati procesne prijedloge i izmiriti se da li primaće ili osporava postavljeni tužbeni zahtjev, te navesti i druge podatke koje o slučaju sa odredbama člana 326. ZPP-a mora imati svaki podnosač. Ako tuženi osporava tužbeni zahtjev, odgovor na tužbu mora sadržavati i razloge iz kojih se tužbeni zahtjev osporava, činjenice na kojima tužbeni zasniava svoje navode, dokazna kojima se utvrđuju te činjenice, te pravni osnov za navode tuženog. Tužbeni molbu u odgovoru na tužbu, a naknadno sa pripremljenom rošnju, podnijeti prvostepeni.

Učinilo tuženi u roku od 30 dana se dostavi pismeni odgovor na tužbu u zakonskom roku, mi će donijeti presudu obz obz propisano u smislu odredbe člana 182. ZPP-a. Odgovore na tužbu sa prilozima se predaje sudu u dva primjeka, govorena na broj predmeta.

Objavljivanje drugostepenim se dostava tužbenim obavijestom protekom roka od 15 dana od dana objavljivanja iste u dnevnikovima koje se distribuiraju u Federaciji BiH.

Stručni saradnik
 Edvin Karalić

JP CESTE FEDERACIJE BIH

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- Prijedlog Plana upravljanja objektima i održavanju objekata za projekat rekonstrukcije mosta preko rijeke Bosne
- Prijedlog, sadržajna, odgovori i objašnjenja



Web addresses containing the document and the Announcement of Public discussion with screenshots of the websites:

1. PC Roads of FBH website

<http://jpcfbih.ba/bs/novosti/javna-rasprava-o-nacrtu-plana-upravljanja-okolisem-i-drustvenim-aspektima-za-projekat-rehabilitacije-mosta-preko-rijeke-plive/31> (21.02.2018.)

<http://dev.jpcfbih.ba/assets/upload/dokumenti-modernizacija/PUO-Plive.pdf> - Document B/H/S language (21.02.2018.)

<http://jpcfbih.ba/bs/aktivnosti/modernizacija-magistralnih-cesta/38>

http://dev.jpcfbih.ba/assets/upload/dokumenti-modernizacija/ESMP_Pliva_River_EN.pdf - Document (English language) (21.02.2018.)

<http://jpcfbih.ba/en/activities/modernization-of-main-roads/38>



2. Municipality of Jajce – website

<http://www.opcina-jajce.ba/aktuelnosti/javne-rasprave/2257-javna-rasprava-o-nacrtu-plana-upravljanja-okolisem-i-drustvenim-aspektima-za-projekat-rehabilitacije-mosta-preko-rijeke-plive.html> - 04.03.2018.



MINUTES of Public Discussion on the Draft Environmental and Social Management Plan for the Project of Rehabilitation of the Bridge over River Pliva in Jajce

A public discussion on the draft of Environmental and Social Management Plan for the Project of Rehabilitation of the Bridge over r. Pliva in Jajce was held on March 13, 2018 in the premises of the Municipality of Jajce at 11 am.

On behalf of the PC Roads of the Federation of Bosnia and Herzegovina public discussion was attended by:

- **Muamera Grebo**, Project manager for the Project of rehabilitation of the bridge over r. Pliva in Jajce
- **Selma Ljubijankić** - member of the PIT in charge of social aspects under the Road Sector Modernization Programme
- **Haris Zejnić** – PIT assistant for environmental monitoring under the Programme.

A list of all participants is enclosed to these minutes.

Selma Ljubijankić opened this public discussion, greeted all participants and presented representatives of the Investor and gave a brief introduction on the Road Modernization Program and the document.

Haris Zejnić presented the Draft Environmental and Social Management Plan for the Project of Rehabilitation of the Bridge over r. Pliva in Jajce. He familiarized all participants with the project goals, mitigation measures of all identified potential environmental and social impacts, monitoring plan, disclosure of information, grievance mechanism, requirements for start of works, and other relevant information from the document. It was stressed out that this is the draft document and explained that all the relevant comments from the public discussion will be included in the final document. It was also emphasized that the document was revised by the World Bank team and, after the adoption, will become a binding document for the contracting parties in the implementation of the project itself.

Mrs. Dunja Lučić: Is the draft document the only subject matter of this discussion or is it about the presentation of the project for works as well?

Selma Ljubijankić: According to the Operational Policies of the Creditor, the public discussion has to be held in order to finalize the document before signing the Contract for works. We have taken this opportunity to familiarize the local community with the project itself too.

Mrs. Dunja Lučić: During your presentation of the document, an impact on the waterfall was mentioned for a couple of times. Is this a mistake given that the bridge is quite far from the waterfall?

What sort of impact are we talking about?

Haris Zejnić: The identified impact on the waterfall is primarily related to the interrupted access to the same during the works execution.

Muamera Grebo: In case of reconstruction projects and major intervention on bridges, the PC Roads of the FBiH conducts the procedure for obtaining urban and construction permits. As these types of interventions are not involved with this particular case, so far we have not contacted the Municipality of Jajce, except for the fact that a few months ago I sent a notice of the planned start of work for which I did not receive any answer.

Upon regular inspection of the bridge structure conducted in 2015 when the leakage of surface water through expansion joints has been identified and evidenced that the steel spanning structure of the bridge is being compromised, the design of project of rehabilitation of the bridge over r. Pliva in Jajce was made part of the Plan of PC Roads of the FB&H for 2016. This project was later nominated for the Road Sector Modernization Program, which, as mentioned above, is credited by the World Bank. According to the operational policies of this creditor, such documents were created for each project. A comprehensive site analysis was carried out and impacts to wider project area were identified, including the impact on the Pliva river waterfall. This is a standard rehabilitation project and, as the project manager, I do not foresee any major impact on the local population or on the environment.

After this brief discussion, Muamera Grebo, the project manager presented the technical features of the project, including the Traffic Management Plan during the works execution. The public discussion followed afterwards.

Asaf Smajić: He asked about the performed width of the discontinuous spanning structure?

Muamera Grebo: (shows the Project in order to be inspected) She explained that works shall be executed over the entire length of the cross section and the entire height of the 2 m long AB deck. Therefore, the existing concrete hydro-insulation will be removed, and new one will be installed on the whole surface of the pavement deck, upon which asphalt wearing course will be laid.

Asaf Smajić: He asked where will the separator be located, what is the type of separator and how often is monitoring done?

Muamera Grebo: She explained that the separator will be located on the bridge shoulder. The separator will be discharged through the closed pipeline whereupon the purified water shall be discharged through the concrete channels into the r. Pliva. An interchangeable filter separator is foreseen. **Haris Zejnić** adds that monitoring will be carried out once a year.

Dunja Lučić: She supposed that there might be a problem with the work dynamics. In fact, there is a bathing area on the river Pliva, right underneath the bridge, and during the tourist season Municipality of Jajce specifically regulated the traffic. It was suggested to send an official letter and notice of the work commencement to the Municipality of Jajce, in order to inform the mayor of it. It was stressed out that the Municipality of Jajce is planning certain

investments related to the mentioned bathing area so the works execution will presumably overlap with the tourist season.

Muamera Grebo: In the letter sent to the Municipality of Jajce and addressed to the Mayor, it was explained that the works will commence soon. Traffic management during the works execution has also been explained.

Seđad Duranović: It was mentioned that the local road envisaged for traffic relocation during the works has certain bending elements that do not support passage of long vehicle or vehicle bypassing. Gentleman believes that the best solution to this problem would be to establish a one-way traffic regime, either with manual or light regulation.

Muamera Grebo: Following a common practice, the signing of the Contract is always followed by a meeting attended by representatives of the concerned Municipality, Contractor and Project Manager on behalf of the PC Roads of the FBiH. This meeting also includes a site visit and an agreement on a TMP during the construction works.

Dunja Lučić: She expressed the concern that the biggest issue for the Municipality is the period of works execution. If the works were carried out at the end of August or at the beginning of September, the impact on the tourist season would have been less significant. According to the Work Plan, the works will be executed at the peak of the tourist season, which will surely have an impact on the same.

Muamera Grebo: It was explained that the total traffic suspension will take place in three occasions for a maximum of 3 to 4 days. This will involve works on change of bearings and asphalt lying on either side of the bridge. The contractor will be advised that by the end of June he will have to carry out works requiring total suspension of traffic. We'd like to kindly remind the Municipality of Jajce to officially respond to the Notice of works commencement and to precise the duration of tourist season and the fact of the potential impact to it.

Seđad Duranović: He explained that the Traffic Management Plan shall be carried out in order to indicate that the local road envisaged for traffic relocation shall be transformed from two to one-way road. Car parking shall be forbidden along the local road in question. Critical points shall be examined together with the Contractor in order to find the best solution.

Dragan Glavaš: Bathing area near the subject bridge counts 5000 people during the weekend. Pliva Lakes near which goes the local road planned for traffic relocation has monthly visit of 5000 people. The local community will have to make great effort to adapt the local population and tourists to the extraordinary situation. The season starts on May 1 while the peak is reached in June and afterward.

Ivica Marušić: It was explained that there is an alternative to relocate the traffic to Mrkonjić Grad. The difference in travel time would be 10 to 20 minutes.

Muamera Grebo: Traffic management of this kind mostly means need for resources to compensate for losses of road users (car carriers). Prior to work commencement, you will be

invited for a site visit in order to document the condition of the local road planned for traffic relocation. PC Roads of the FBiH will re-establish the condition of the road in question, at least its minimum before the exploitation.

Seđad Duranović: It was asked whether it would be possible to relocate the traffic to go through Mrkonjić Grad, or at least the one direction, while the second one could go to the local road.

Muamera Grebo: The TMP, as explained while discussing the technical features of the project is an integral part of the Main Design and as such was approved by the Creditor. When the Contractor signs the Contract, he is obliged to make his traffic management plan which may include an alternative road through Mrkonjić Grad.

Dunja Lučić: It was pointed out that the most critical part of the local road planned for relocation purposes lies directly underneath the bridge. There are landslides at this location as well.

Dragan Glavaš: He raised a question about the possibility of making a noise and visual barrier on the bridge in question. This investment would improve the conditions for tourists and visitors of the bathing area in the long run.

Muamera Grebo: She explained that such investment is not foreseen by the project documentation and would be considered an additional work. PC Roads will give due consideration to this proposal, taking into account the additional resources that would be required.

Ivica Marušić: It was stressed out that the necessity to protect the visitors in the bathing area during the works.

Muamera Grebo: It was explained that the Contractor has an obligation to ensure the safety of site for all visitors, locals and road users.

Selma Ljubijankić: It was pointed out that the minutes of this public discussion will be carried out and included into the final document that will be submitted to the Municipality.

The public discussion was closed at 12.30 pm.

Photographs of participants in the Public Consultations in Jajce (premises of Jajce Municipality)





List of Participants in the Public Consultations



Javna rasprava o Planu upravljanja okolišem i društvenim aspektima za projekat rehabilitacije mosta preko rijeke Plive, Jajce, 13. mart 2018.g.

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