

**ENVIRONMENTAL AND SOCIAL  
MANAGEMENT PLAN FOR THE  
PROJECT OF THE CONSTRUCTION OF  
THIRD LANE FOR SLOW VEHICLES  
ON SECTION RIPAČ – VRTOČE (M-5)**

October, 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>

- USC* - *Una Sana Canton*
- IFI* - *International Financial Institutions*
- MP* - *Main project*
- MPCA* - *Management Plan in Case of Accidents*
- OP* - *Operational Policy of the World Bank*
- PAP* - *Project Affected Person*
- PPE* - *Personal Protective Equipment*
- PCRoadsFBH* - *Public Company Roads of the Federation of Bosnia and Herzegovina*
- RAP* - *Resettlement Action Plan*
- RPF* - *Resettlement Policy Framework*
- TD* - *Tendering Documentation*
- TMP* - *Traffic Management Plan*
- WB* - *World Bank*
- WMP* - *Waste Management Plan*
- AEHS* - *Annual Environmental Health and Safety*

## **EXECUTIVE SUMMARY**

### **INTRODUCTION AND OBJECTIVES OF THE ESMP**

*This Project of Construction of third lane for slow vehicles on major road M5, section Ripač - Vrtoče (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. The project of construction of the third lane on the major road M-5, section Ripač - Vrtoče, is screened as a category B project according to the triggered Operational Policies 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 this project does not require a water permit, an environmental assessment or an environmental permit - whether federal or cantonal. PC Roads FBH will ensure all required local permits for this Project are obtained.*

### **LOCATION AND TRAFFIC DESCRIPTION**

The projected third lane is situated on the main traffic direction of Bihać city, on the major road M-5, section Ripač - Vrtoče. This section of the major road M5 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. The area of reconstruction is located outside of the urban area of Bihać, and no residential, public or commercial facilities are situated near the project. The nearest relevant traffic count device on main road M5, located in Vrtoče, 20 km south-east from the location of the project third lanes shows that, in 2015, the average annual daily traffic on the project location was 1712.

### **PROJECT DESCRIPTION**

The existing route on the section Ripač - Vrtoče meets the calculated speed of only 60 km /h. The existing roadway is wide 7-8 m. Along the route there are not settlements and only a few connections to local and forest roads are present on the route. The designed section Ripač - Vrtoče begins leaving the settlement of Ripač that is on the road chainage approx. 2 + 200. The designer aligned the curves with the existing elements on the track, the road extension is mainly for the right (hill) side because of the good characteristics of the material in the slopes and because of the steep slopes on the embankments of the existing road. The new route uses existing road and minimizes traffic disturbances during the construction. The finished road level of the reconstructed road was designed to retain existing finished road level to the maximum, with all approaches to the main road.

The main project of the section: Ripač - Vrtoča is planned in part as an open drainage system, ie all precipitation water is collected with concrete rigols and segment trenches and taken to a suitable recipient. Since this section of the M5 main road passes through the uninhabited area, it has been noted that there are no conflicts with the existing infrastructure.

## **BASELINE OF PARTICULAR INTEREST**

The terrain of the Project is mostly with an attitude in the range from 300 to 700 meters above sea level. Meteorological station in Bihać, closest to the site of reconstruction, reports following data: the average multi-annual temperature is 10.6 ° C, the warmest month is July, with an average perennial air temperature of 20.0 ° C and the coldest month is January when the average perennial temperature is 0.3° C. The average rainfall measured at the same meteorological station, during multi-year period is 1307.5 mm per year. The rainiest month is November, when the average precipitation is 146.2 mm. The least precipitation occurs in January, only 85.9 mm on average. Based on geographical features and the fact that there are no significant pollutants, it considers that the air quality is good. Waters of the wider area belong to the Black Sea watershed. There are no surface watercourses in the project area.

The largest source of noise, in general, is traffic. The land in the vicinity of the project section needed for project activities is public property. Woodland is the dominant land cover type covering large areas in the wider area of the bridge according to the CORINE methodology. On site we can find beech forests and shrubs within the oak and hornbeam forest. None of them is an endangered species. The location of the Project is not located within a protected area according to the Spatial Plan of FBiH and Spatial Plan of Una – Sana Canton. There are also no recorded archeological findings in the observed area.

The municipality Bihać is the center of the Una-Sana Canton. According to the 2013 Census, the municipality has a population of 61.186. people on an area of cca 900 square meters. The project road lies on the east entrance to the city of Bihać and thus has major importance for the local community. For the inhabitants of the of the entire south eastern part of the Una-Sana Canton the project road represents the fastest and most convenient way to reach Bihać, the health care, educational and administrative center of the region. The importance of the project lies also in transit traffic because the road lies on the main road M5, one of the most important transit roads in FBH which connects the north-west with the south-east of the country.

## **IMPACTS DURING PRECONSTRUCTION**

**Socio economic impacts:** this project envisages adding a third lane to the existing road on Section Ripač-Dubovsko. These activities imply the expropriation of 46 publicly and 37 privately owned land plots. The number of Project Affected People (PAP) is 33.

The walkover survey has been conducted on the 2<sup>nd</sup> of September 2017 and it has been concluded that the public land necessary for the respective project activities, such as material and machinery storage, is not used in any way, neither formally or informally. Consultations with the municipality have been conducted 3<sup>rd</sup> of August, 2017. The municipality agrees to the expropriation of public land for the purpose of construction of third lanes and agrees to cooperate during all of the project activities. Land acquisition

process for public land is in fact administrative transfer of ownership since previous owner has no claims and no compensation will be paid. On the same walkover survey it has been noted that affected land plots have no productive use and there will be no economic impacts as a result of the expropriation.

### **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, impact on geomorphology, soil quality and land use, and traffic 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.

#### **Socio-economic impacts:**

- At this time, it is not expected that it will be necessary to temporarily occupy any privately or publicly owned land plots for lodging machines and disposal of materials. Machines and materials will be disposed on land owned by the Investor.
- New business opportunities are expected to be created for local businesses such as transporters, suppliers and other service providers.
- Difficult access to the national park Una in close vicinity from the project section.
- Although the project area is uninhabited, following adverse impacts during construction are expected: Noise increase, Inappropriate disposal of construction waste, Local businesses can be affected in means of late delivery of goods and products.

### **MITIGATION MEASURES**

The mitigation measures focus on the major identified impacts during pre-construction and construction 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 groundwater from accidental leaks and spills, impact on geomorphology, soil quality and land use, traffic safety impacts, waste management, impacts on living conditions and impacts on local traffic.

Mitigation measures concerning land acquisition envisage the creation and implementation of the Abbreviated Resettlement Action Plan (ARAP).

### **ENVIRONMENTAL MONITORING PROGRAM**

The monitoring measures focus on the major identified impacts during pre-construction and construction 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 groundwater



from accidental leaks and spills, impact on geomorphology, soil quality and land use, traffic safety impacts, waste management, impacts on living conditions and 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 are organized in Bihac after the WB 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 are integrated into the final ESMP. The results of the public consultation are incorporated into the final ESMP.

#### **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 City of Bihac.

#### **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, soil quality data, survey and analysis of vegetation cover prior to the beginning and upon completion of works on construction site. The Contractor shall develop 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.

As for social aspects the requirements for start of work include the creation and implementation of the ARAP.

## 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://jpcfbih.ba/bs/aktivnosti/modernizacija-magistralnih-cesta/38>), 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 Construction of third lane for slow vehicles on major road M5, section Ripač - Vrtoče (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**

The project of construction of the third lane on the major road *M-5, section Ripač - Vrtoče*, is screened as a category B project according to the triggered Operational Policies 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<sup>1</sup>. 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 implementation. Monitoring during project 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

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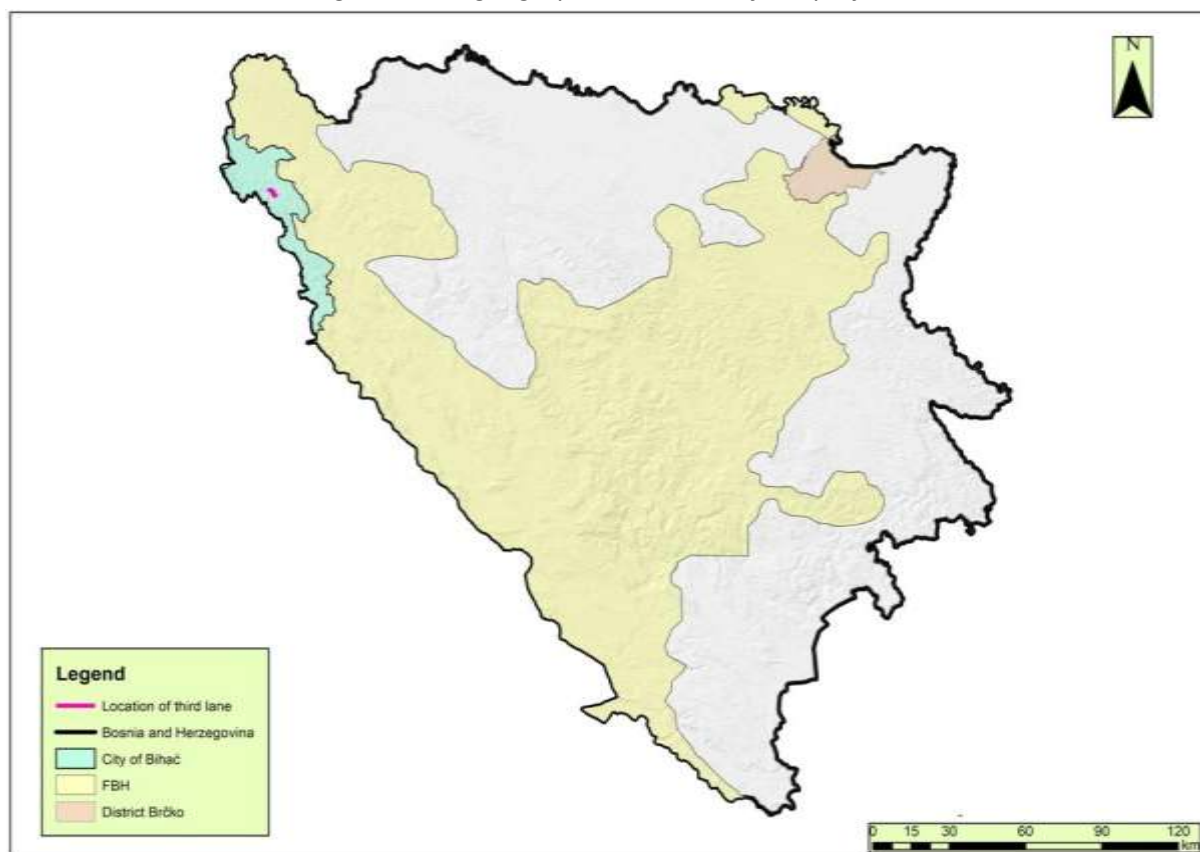
<sup>1</sup> *In FBH investments requiring EIA are identified by the Regulation on Plants and Facilities Subject to Obligatory Environmental Impact Assessment, and Facilities Which May be Constructed and Commissioned Only if Granted Environmental Permit (Official Gazette of FBH No. 19/04). In Una-Sana 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 USC No. 18/07).*

Contractor shall prepare detailed list of mitigation measures and parameters to be monitored.

### 3. LOCAL DESCRIPTION

The projected third lane is situated on the main traffic direction of Bihać city, on the major road M-5, section Ripač - Vrtoče. 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

The area of reconstruction is located outside of the urban area of Bihać, and no residential, public or commercial facilities are situated near the project.

This section of the major road M5 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: Lookup Map of Wider Area with the Project Location



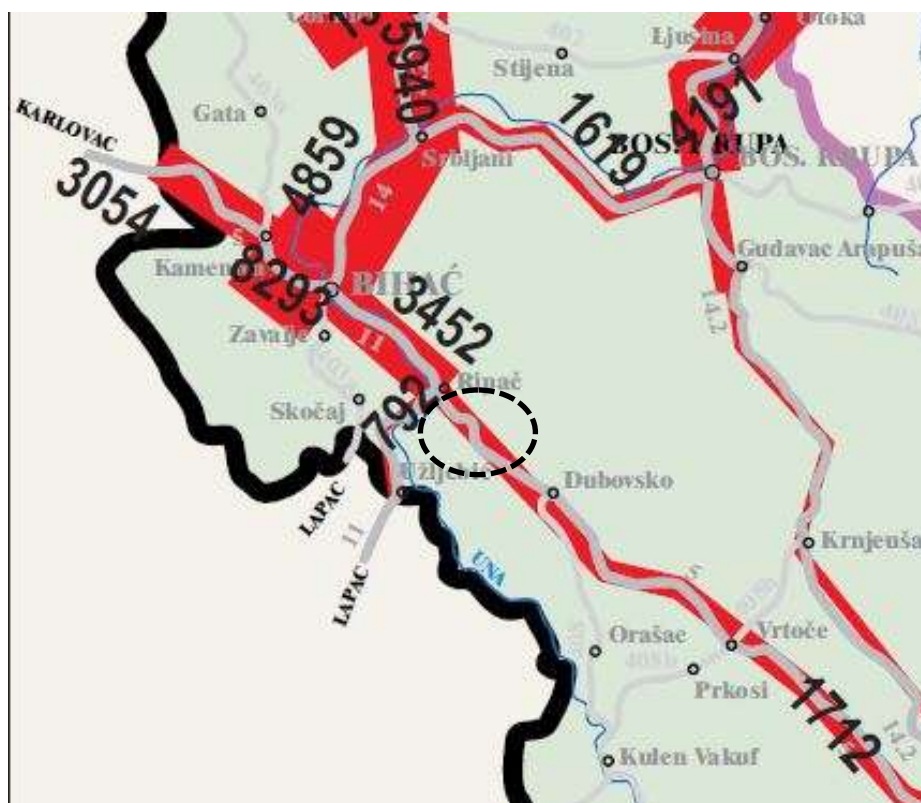
Source: PC Roads Federation of BH

### 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 report<sup>2</sup> was published in 2016 with data for the previous year. The nearest relevant traffic count device on main road M5, located in Vrtoče, 20 km south-east from the location of the project third lanes shows that, in 2015, the average annual daily traffic on the project location was 1712 (Figure 3). The other traffic count device in the vicinity of the project section is located in the settlement Ripač, 1 km north-west from the project section. It includes local, suburban and urban traffic thus making it not relevant for traffic analysis of the project section (the location of the project section implies that the impact of the project is greater for transit than for local traffic).

<sup>2</sup> "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 2014<sup>3</sup> for the period 2013 to 2040. Analysis 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 Vrtoče-Bosanski Petrovac

Major road	Section name	AADT									
		2016	2018	2020	2022	2023	2025	2030	2035	2037	2040
M 5	Vrtoče-Bosanski Petrovac	1905	2029	2116	2262	2325	2503	2870	3060	3186	3393

Source: PC Roads FBH, 2014

An even and stable rise of the number of vehicles on the project section can be detected from table 1. The increase of AADT in year 2040 will be 78% compared to the AADT in 2016 which shows the need for modernization with the aim of better traffic flow.

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

## 4. PROJECT DESCRIPTION

Main road M5, section Bihac - Bos.Petrovac - Ključ is one of the major main roads in Bosnia and Herzegovina as it connects Unskosanski Canton with the rest of the Federation, and links Sarajevo to Zagreb and further to the EU.

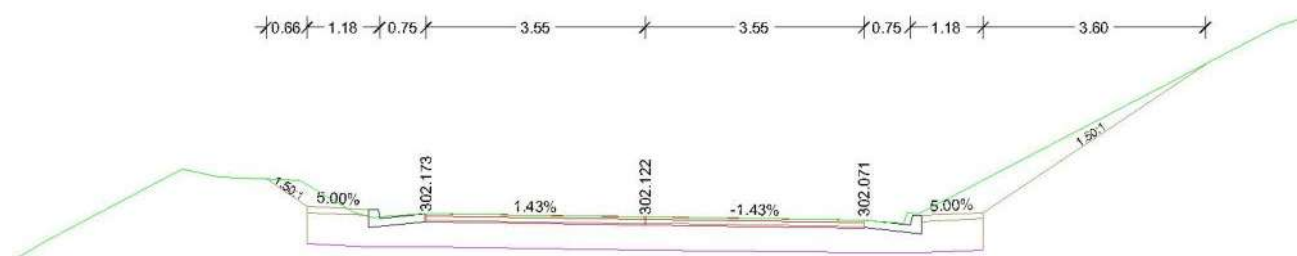
On the road M5 Ripač - Vrtoče, in the past period of exploitation, it was noted the increased involvement of heavy freight vehicles that at reduced speed on the grade disturb the vehicles that are behind them. The exploitation speeds are low on the ascent of the existing road, which is particularly expressed among freight vehicles which cause accumulation of vehicles, reduce the level of services and affect the safety of the vehicles in traffic. As a result, it creates traffic jams, increase the exploitation costs and driving time.

### 4.1. Existing Road

The existing route on the section Ripač - Vrtoče meets the calculated speed of only 60 km /h. The existing roadway is wide 7-8 m.

Along the route there are not settlements and only a few connections to local and forest roads are present on the route.

Figure 4: Cross section, road with two lanes



Source: Except from Main Design, Trasa Ltd, August 2015

### 4.1. New design

The designed section Ripač - Vrtoče begins leaving the settlement of Ripač that is on the road chainage approx. 2 + 200. The designer aligned the curves with the existing elements on the track, the road extension is mainly for the right (hill) side because of the good characteristics of the material in the slopes and because of the steep slopes on the embankments of the existing road. During route survey, special attention was paid to the

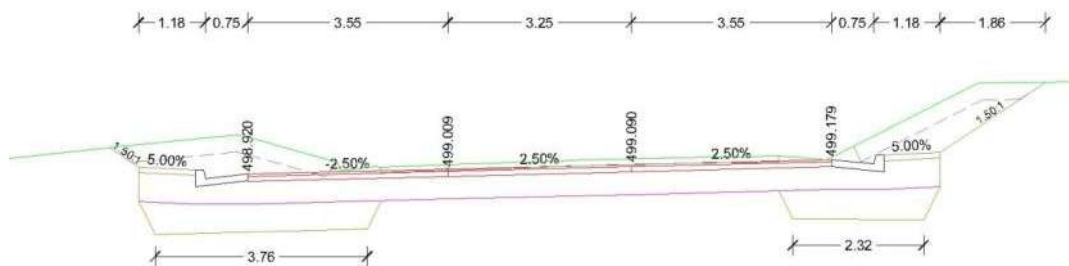
position of the shaft, so that the new route uses existing road and minimizes traffic disturbances during the construction.

The finished road level of the reconstructed road was designed to retain existing finished road level to the maximum, with all approaches to the main road.

The main project of the section: Ripač - Vrtoča is planned in part as an open drainage system, ie all precipitation water is collected with concrete rigols and segment trenches and taken to a suitable recipient.

Since this section of the M5 main road passes through the uninhabited area, it has been noted that there are no conflicts with the existing infrastructure.

*Figure 5: Cross section, road with three lanes*



*Source: Except from Main Design, Trasa Ltd, August 2015*

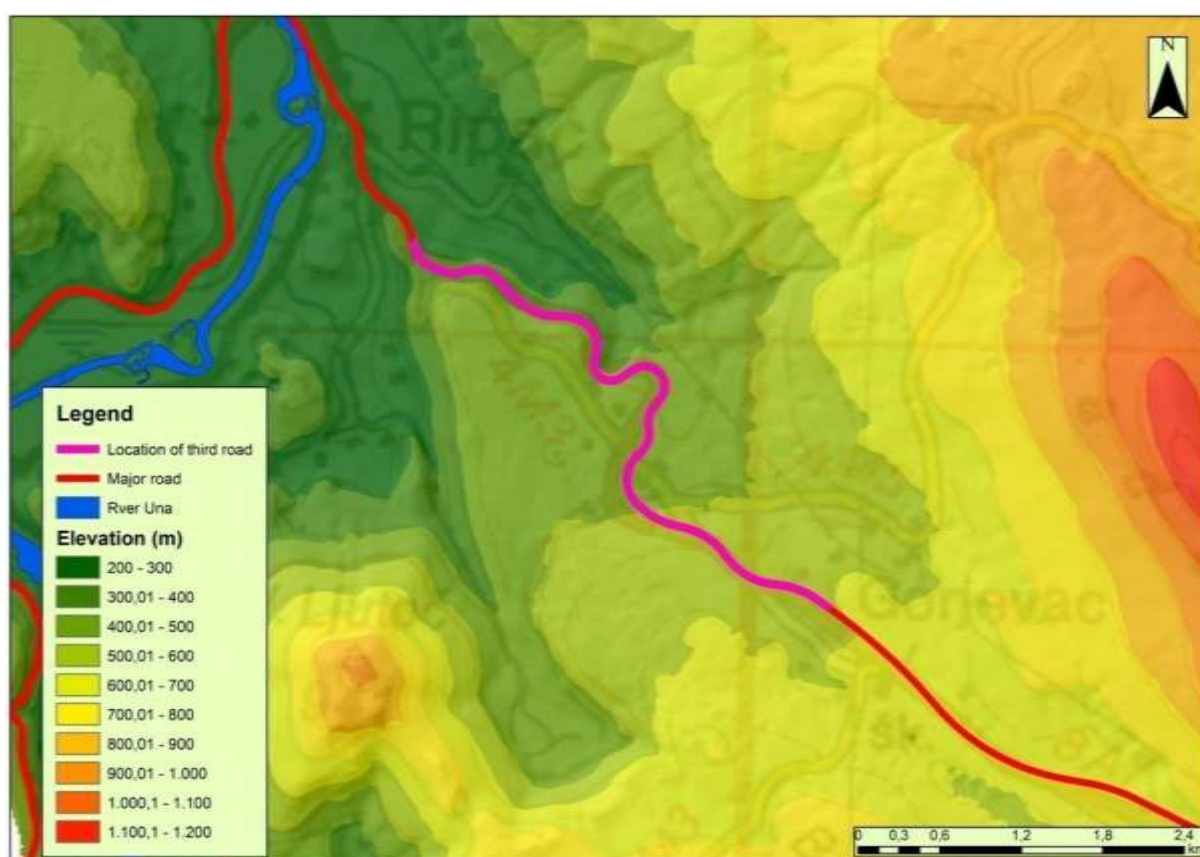


## 5. BASELINE OF PARTICULAR INTEREST

### 5.1. GEOGRAPHIC CONDITIONS

The terrain of the Project ist mostly with an attitude in the range from 300 to 700 meters above sea level. In the wider area the altitude goes up to 1200 meters above sea level, as indicated in the next figure. 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 karstic type of morphostructure. Aquifers are predominantly of fracture – cavernous porosity.

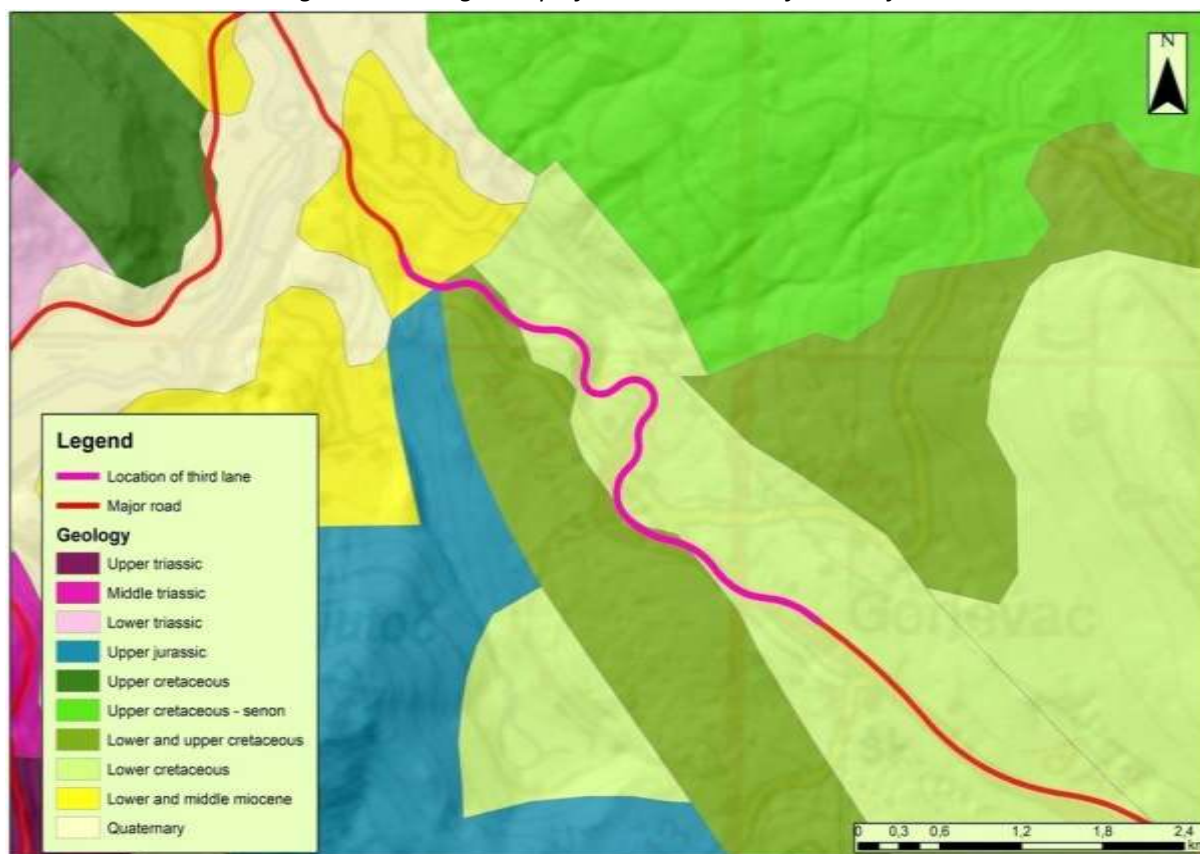
*Figure 6: Geographical Map of Wider Area with the Project Location*



*Source: PC Roads Federation of BH*

The geological structure of the area of reconstruction is characterized by lower and upper cretaceous sediments represented by limestone's, dolomite limestones and dolomites, and also with marly limestones and marl of the middle Miocene.

Figure 7: Geologic Map of the wider area of the Project



Source: Spatial plan of Una – Sana Canton 2012.-2032.

## 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 the entire area is under the influence of the moderate continental climate or moderately warm and humid climate type (Cfb climate according to Köppen climate classification) which can be concluded from the analysis of thermal and pluviometric regime.

Meteorological station in Bihać, closest to the site of reconstruction, reports following data: the average multi-annual temperature is 10.6 ° C, the warmest month is July, with an average perennial air temperature of 20.0 ° C and the coldest month is January when the average perennial temperature is 0.3° C.

*Table 2. Average temperature and precipitation for the multi-year period (1961.-1990.)*

Month	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	Average
Temperature (°C)	0,3	2,5	6,1	10,7	15,1	18,3	20	19,2	15,9	11,3	6,3	1,7	10,6
Precipitation (mm)	85,9	90,8	99,3	114,6	116,3	109	107,4	109,4	107,9	109,3	146,2	111,4	1307,5

*Source: Spatial plan of Una – Sana Canton 2012.-2032.*

The average rainfall measured at the same meteorological station, during multi-year period is 1307.5 mm per year. The rainiest month is November, when the average precipitation is 146.2 mm. The least precipitation occurs in January, only 85.9 mm on average. The annual rain regime of this area belongs to the continental pluviometric regime.

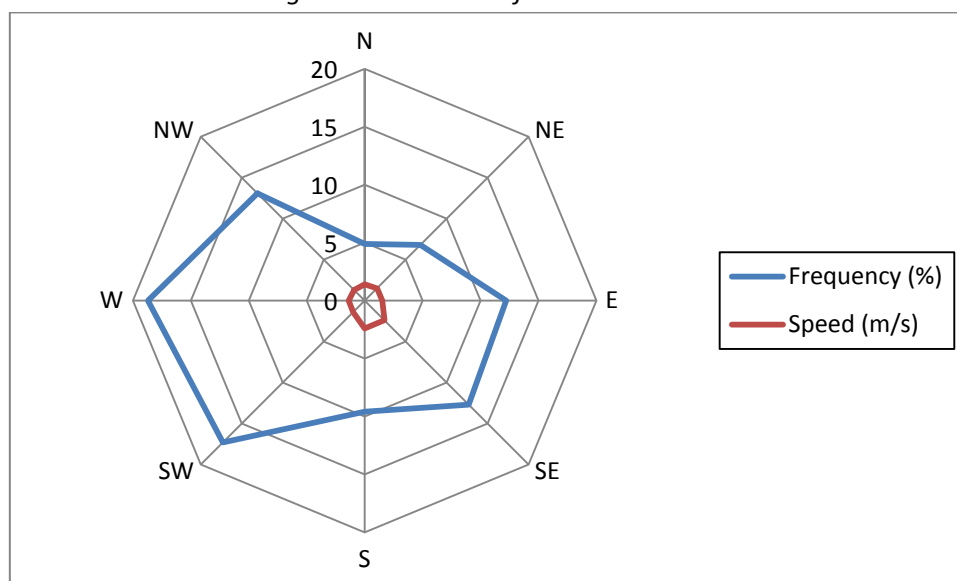
*Table 3. Average wind speeds and frequency for the multi-year period (1961.-1990.)*

Direction	C	N	NE	E	SE	S	SW	W	NW
Frequency (%)	4,6	4,9	6,8	12,2	12,7	9,6	17,3	18,7	13,1
Speed (m/s)	-	1,4	1,5	1,5	2,4	2,4	1,4	1,4	1,3

*Source: Spatial plan of Una – Sana Canton 2012.-2032.*

Wind roses depend on geomorphology, mountain ridges and the direction of the rivers. The dominant winds come from the west and southwest, but the presence of the northwest, southeast and east wind is very often. Extreme winds in the zone of moderate – continental climate, can reach up to 40 m/s, which occurs once or twice in 10 years. Speed of 25-40 m/s are recorded almost every year, while speeds of up to 17 m/s are common and occur several times a year. The highest average wind speed has the southern and southeastern wind of 2.4 m/s.

Figure 8. Wind roses from MS "Bihać"



Source: Spatial plan of Una – Sana Canton 2012.-2032.

### 5.3. AIR QUALITY

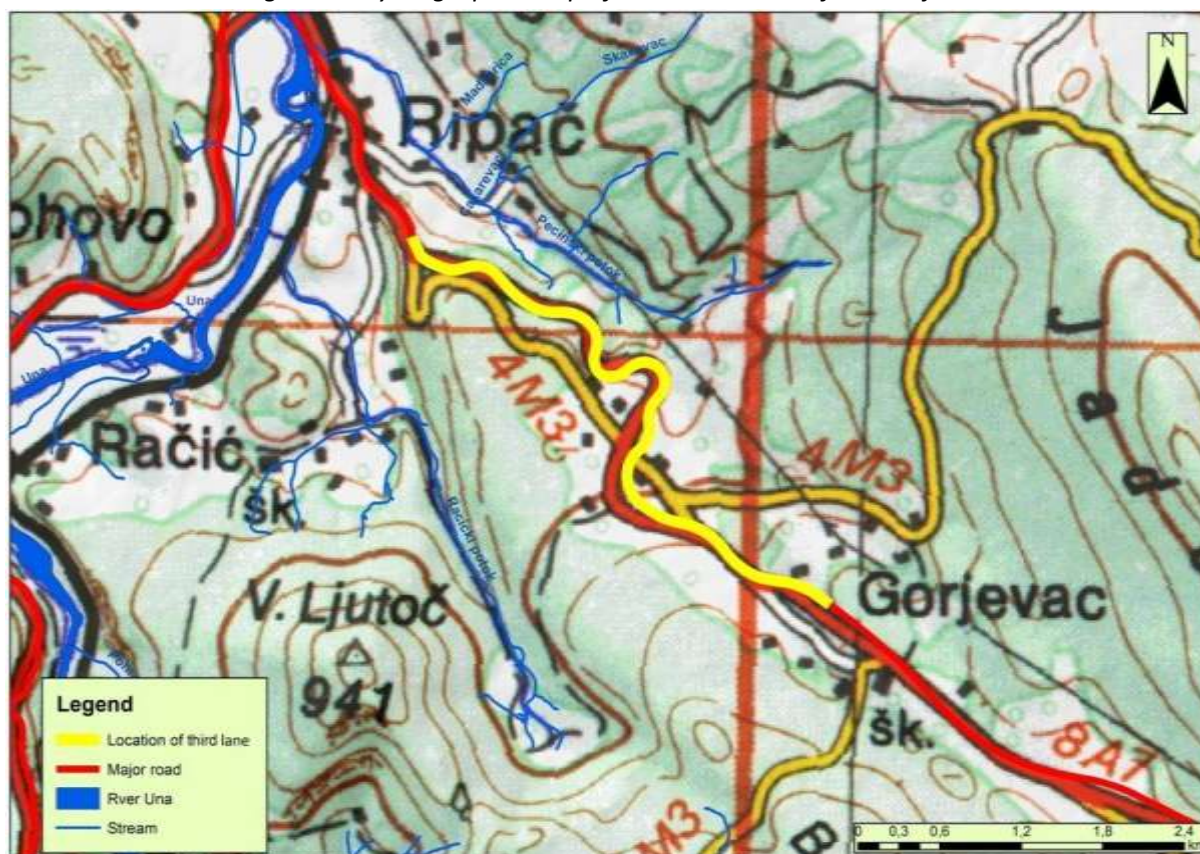
No particular monitoring of air quality for this location was performed, neither for the area of Bihać. Judging by the location of the Project, it can be concluded that the highest air pollution refers to the traffic of the major road. Also, during the winter time, the air is loaded with the pollution that comes from individual furnaces and boiler units, from facilities that are located nearby the Project, while there are no other major air polluters such as industrial facilities near the site.

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.

### 5.4. WATER AND WATER QUALITY

Waters of the wider area belong to the Black Sea watershed. There are no surface watercourses in the project area. However, since the project lies on water-permeable karst, attention must be paid to specific measures aimed to protect the groundwater. The nearest watercourse is river Una, located more than one kilometer away from the nearest point of project site, as indicated in the next figure.

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



Source: PC Roads Federation of BH

## 5.5. NOISE LEVELS

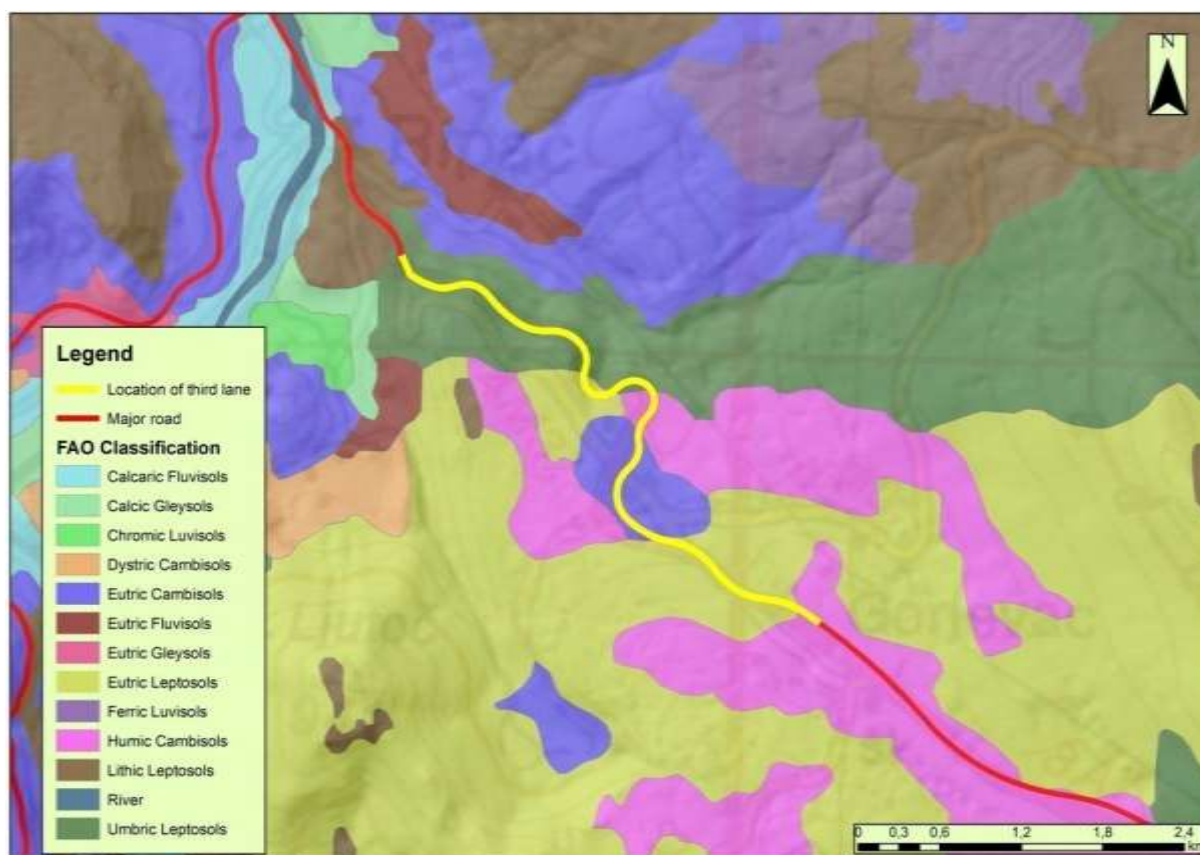
There was no monitoring of noise levels near the Project area; therefore there is no available baseline data of the impact of the noise on the environment. The largest source of noise, in general, is traffic.

In close proximity to the Project area, we can't find any facilities for residential (houses) and business purposes (stores), and 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. 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

The soil around the planned project represents automorphic soil in the form of umbric leptosols, eutric and humic cambisols. Besides them, in the wider area we can find other automorphic soils such as eutric cambisols and lithic leptosols, but also fluvial soils like eutric fluvisols.

Figure 10: Soil map of the wider area of the project

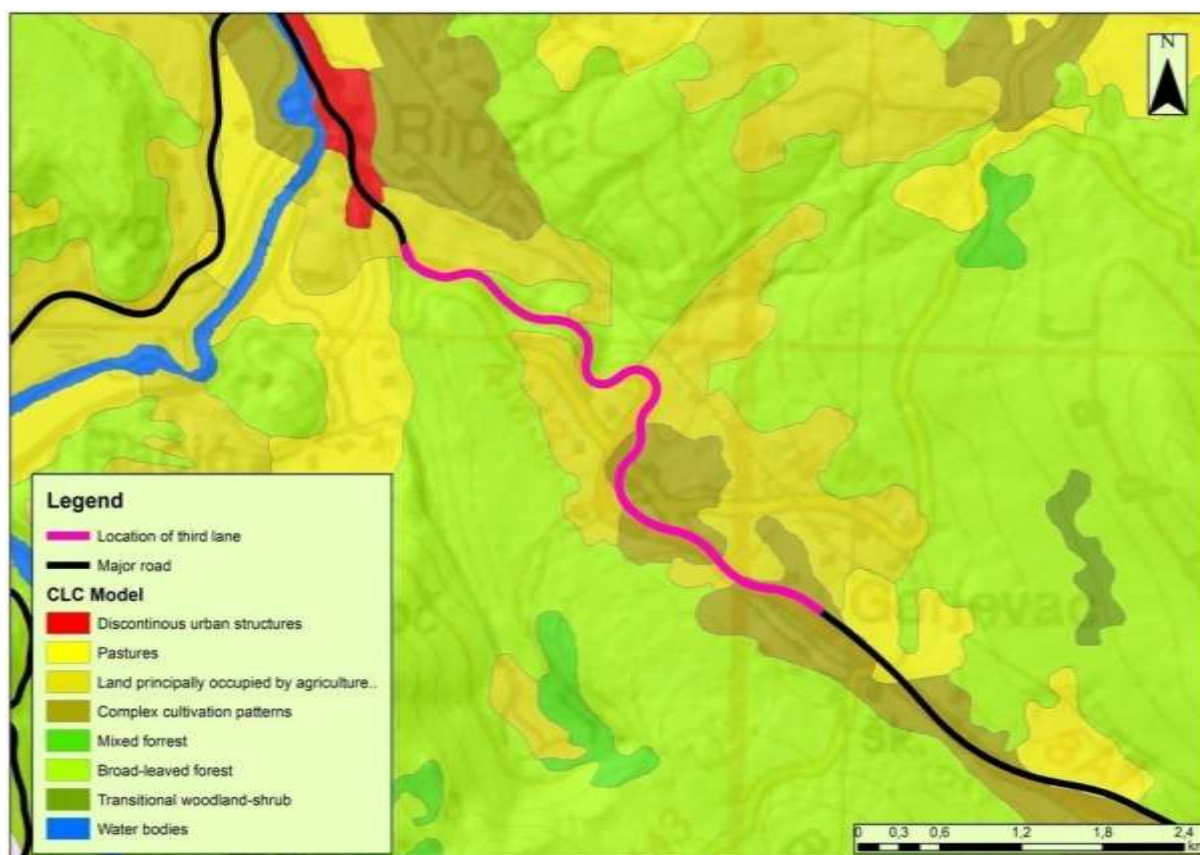


Source: Spatial plan of Una – Sana Canton 2012.-2032.

Woodland and land principally occupied by agriculture is the dominant land cover type covering large areas in the wider area of the bridge according to the CORINE methodology<sup>4</sup>. There are no residential or any other objects near the project site.

<sup>4</sup> Coordination of information of the Environment - European Environment Agency

Figure 11: 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 Una River basin is one of the areas with the highest biological diversity. In the Una basin we can find over 1900 plant species, which makes over 50% of all species that live in Bosnia and Herzegovina. According to the Vulnerability study of Una – Sana canton, in the Una basin we can find 68 taxons of macroscopic invertebrates, 10 species of amphibians, 23 fish species, 12 species of reptiles, 120 species of birds and 60 species of mammals.

On site we can find beech forests and shrubs within the oak and hornbeam forest. None of them is an endangered species. However the Contractor shall hire a biologist to conduct a survey and analysis of vegetation cover prior to the beginning and upon completion of works on construction site.

## 5.8. PROTECTED AREAS

The location of the Project is not located within an protected area according to the Spatial Plan of FBiH and Spatial Plan of Una – Sana Canton. There are also no recorded archeological findings in the observed area according to Commission to Preserve National Monuments. The nearest protected area is the National park Una, located cca. one kilometer away from the nearest point of project site, as indicated in the next figure. Considering the distance of the project site, it is considered that the construction activities will not have any direct or indirect impacts on the National park.

Figure 12: Protected areas in the wider area of the Project



Source: Spatial plan of Una – Sana Canton 2012.-2032.



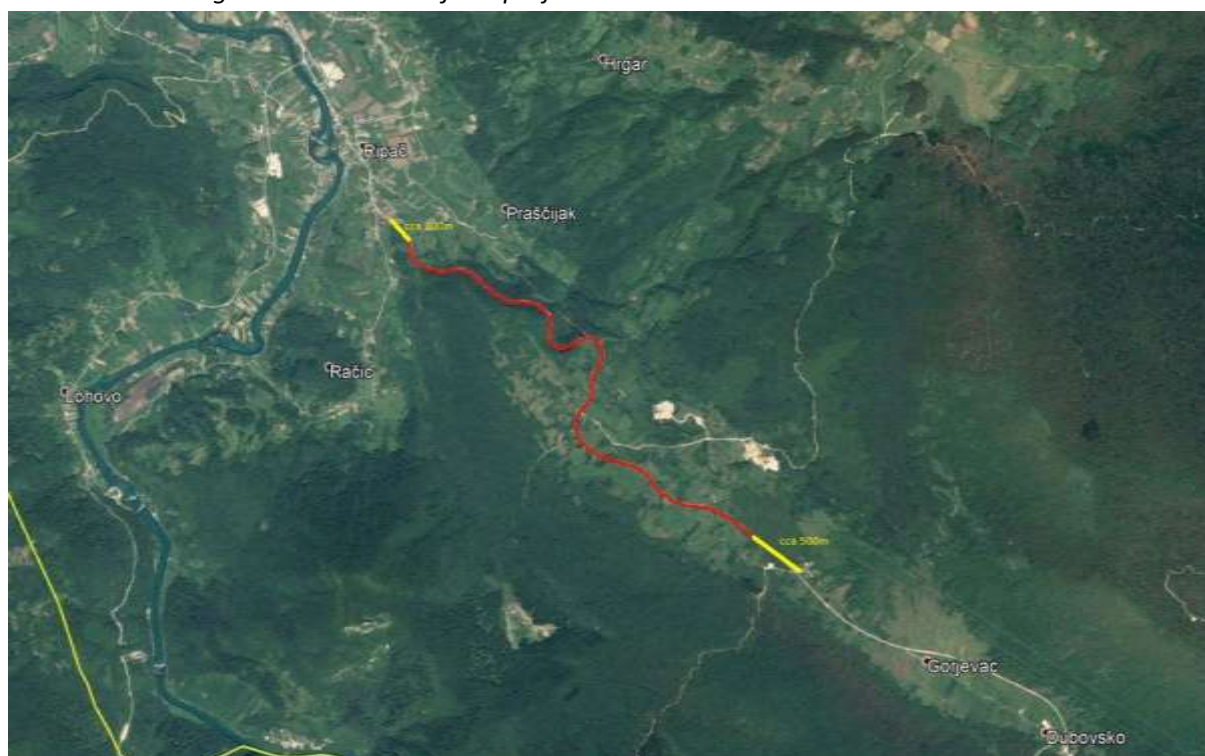
## 5.9. POPULATION AND SETTLEMENTS

The municipality Bihać is the centre of the Una-Sana Canton. According to the 2013 Census, the municipality has a population of 61.186 people on an area of cca 900 square meters.

The project road lies on the east entrance to the city of Bihać and thus has major importance for the local community. For the inhabitants of the of the entire south eastern part of the Una-Sana Canton the project road represents the fastest and most convenient way to reach Bihać, the health care, educational and administrative center of the region.

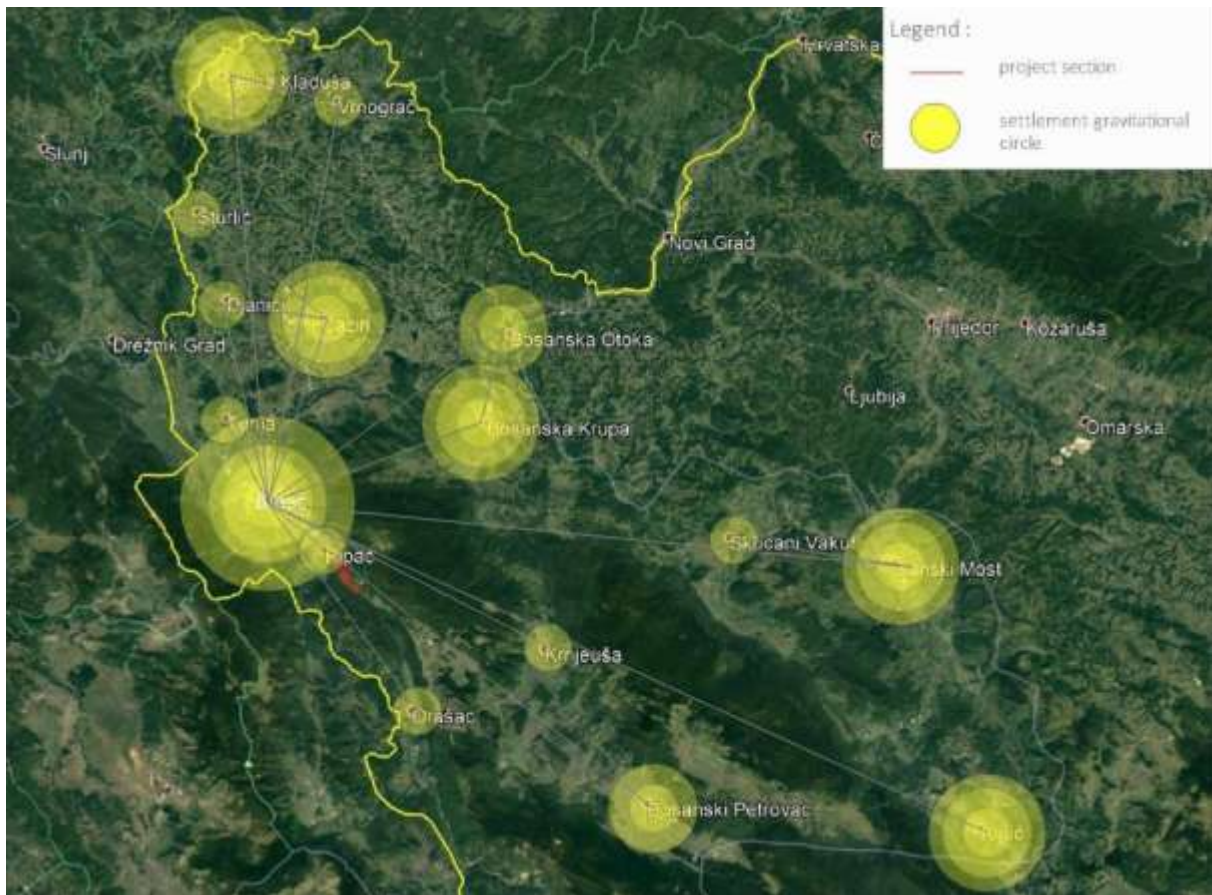
The importance of the project lies also in transit traffic because the road lies on the main road M5, one of the most important transit roads in FBH which connects the north-west with the south-east of the country.

*Figure 13: Distance of the project section to the nearest residence area*



*Source: Roads of FBH*

Figure 14: Gravitational system of settlements in the Una-Sana Canton



Source: Roads of FBH

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

### **6.1. IMPACTS DURING PRE-CONSTRUCTION**

#### Socio-economic impacts

**Land acquisition process:** this project envisages adding a third lane to the existing road on Section Ripač-Dubovsko. These activities imply the expropriation of 46 publicly and 37 privately owned land plots. The number of Project Affected People (PAP) is 33.

On table 4 (public plots) and table 5 (private plots) an overview of the affected plots is depicted. The data depicted on the tables is approximate due the unreliable available baseline survey.

The walkover survey has been conducted on the 2<sup>nd</sup> of September 2017 and it has been concluded that the public land necessary for the respective project activities, such as material and machinery storage, is not used in any way, neither formally or informally. Consultations with the municipality have been conducted 3<sup>rd</sup> of August, 2017. The municipality agrees to the expropriation of public land for the purpose of construction of third lanes and agrees to cooperate during all of the project activities.

Land acquisition process for public land is in fact administrative transfer of ownership since previous owner has no claims and no compensation will be paid.

On the same walkover survey it has been noted that affected land plots have no productive use and there will be no economic impacts as a result of the expropriation.

Table 4: Public land plots necessary for project activities

Parcel nr. (old survey)	Location	Name of parcel	Category	total area of plot	area to be expropriated	% of expropriated area	
123	SP RIPAČ LOHOVO	CESTA	Road	n/a	396	n/a	
123		CESTA	Road	n/a	162	n/a	
1186/1		ŠUMA KOSA	Wood	n/a	11022	n/a	
1123		PUT	Road	n/a	506	n/a	
1189/1		ŠUMA DŽELILOVAC I GOLI BRIEG	Wood	n/a	26916	n/a	
591	K.O. RAČIĆ	PUT	Access road	11090	469	4,23%	
594/1		CIJEPAC	Field	7730	1520	19,66%	
681/1		CIJEPAC	Meadow	2000	126	6,30%	
597/3		OGRADA	Meadow	4050	4364	107,75%	
599/1		VRLETNA NJIVA	Field	26000	939	3,61%	
667		VRLETNA NJIVA	Meadow	7470	1223	16,37%	
669		VRLETNA NJIVA	Meadow	13200	306	2,32%	
654		KRAJ GROBLJA DO CESTI	Field	4660	639	13,71%	
154		PUT	Access road	27560	2144	7,78%	
656		ZA KUĆOM	Pasture	1210	251	20,74%	
655		KUĆIŠTE	Field	240	208	86,67%	
652/1*		GROBLJE	Field	3000	1974	65,80%	
657		GROBLJE	Wood	2300	197	8,57%	
651		BAŠČA	Pasture	630	154	24,44%	
649		GROBLJE	Pasture	2966	181	6,10%	
617		BRDO	Pasture	n/a	1405	n/a	
603/1		ĆULUMAK	Meadow	16310	8011	49,12%	
609/1		KRČEVINA	Field	8330	644	7,73%	
615		STUBLIĆ	Meadow	2830	286	10,11%	
264		JASEN	Meadow	4430	618	13,95%	
267/2		KRAJ JASENA	Regional Road	n/a	790	n/a	
268/2		KRAJ CESTE	Meadow	n/a	822	n/a	
247/2		JASEN	Meadow	8600	1377	16,01%	
248/4		JASEN	Meadow	12030	1928	16,03%	
249/4		JASEN	Meadow	13460	491	3,65%	
250/1		JASEN	Meadow	21740	1696	7,80%	
274/1		DOL	Meadow	9750	1697	17,41%	
257/1		HRASTIK	Wood	15600	13	0,08%	
257/3		HRASTIK	Wood	376645	8957	2,38%	
587/1		OKLINAK	Wood	n/a	506	n/a	
1186/1		K.O. RIPAČ	KLANAC	Wood	104519	305	0,29%
1189/1			KLANAC	Pasture	2005	n/a	n/a
1009/2			GOLI BRIJEG	Regional Road	n/a	109976	n/a

Source: PC Roads of FBH

Table 5: Private land plots necessary for project activities

Parcel nr. (old survey)	Location	Name of parcel	Category	total area of plot	area to be expropriated	% of expropriated
1244/1	SP RIPAČ LOHOVO	ŠUMA GLAVICA	Wood	n/a	1275	n/a
1244/10		ŠUMA GLAVICA	Wood	n/a	46	n/a
1242		PAŠNJAK U RAČIĆU	Pasture	n/a	920	n/a
1183		PUT ZAKOP	Access road	n/a	55	n/a
1240		ORANICA TORINA NAD CESTOM	Arable land	n/a	743	n/a
1239		ORANICA TORINA NAD CESTOM	Arable land	n/a	727	n/a
1190		PAŠNJAK GOLI BRIJEG	Pasture	n/a	580	n/a
688/3		KUĆIŠTE	construction site	n/a	55	n/a
592/1		K.O. RAČIĆ	NJIVICA	Field	9920	2675
687	NJIVICA		Meadow	2700	1057	39,15%
686	NJIVICE		Meadow	1940	349	17,99%
592/2	NJIVICA		Field	3210	878	27,35%
682/1	OGRADA		Field	2070	1863	90,00%
674/1	MEĐA		Pasture	360	132	36,67%
620	KUĆIŠTE		Field	110	55	50,00%
650/1	BRIJEG		Pasture	1850	689	37,24%
639	NJIVICA		Field	3930	417	10,61%
640/1	POLJANA		Field	3700	1468	39,68%
618/1	STUBLIĆ		Field	9370	906	9,67%
616/2	STUBLIĆ		Field	5330	197	3,70%
641/1	POLJANA		Field	2210	1065	48,19%
266/1	MEĐU PUTEVIMA		Field	3200	216	6,75%
265/1	MEĐU PUTEVIMA		Wood	460	245	53,26%
392/3	ČULUMAK		Meadow	5680	865	15,23%
383/1	ČULUMAK		Meadow	8000	335	4,19%
269/2	HRASTIK		Meadow	2050	903	44,05%
246	JASEN		Meadow	n/a	1471	n/a
227	JASEN		Meadow	1010	404	40,00%
226/1	JASEN		Field	13400	592	4,42%
225/1	JASEN		Field	n/a	1470	n/a
223/1	JASEN		Field	5000	1572	31,44%
220/1	JASEN		Field	n/a	1041	n/a
219/2	JASEN		Meadow	1450	931	64,21%
218/1	JASEN		Meadow	n/a	754	n/a
191/3	JASEN	Wood	n/a	78	n/a	
1189/1	K.O. RIPAČ	GOLI BRIJEG	Wood	1007	50	4,97%

Source: PC Roads of FBH

*Figure 15 (a-f): Photographs made during the walkover survey on the 2<sup>th</sup> of September, 2017*



*a) land alongside the project section*



*b) land alongside the project section*



*c) land alongside the project section*



*d) land alongside the project section*

*Source: PC Roads of FBH*

## 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 third lane will lead to a temporary increased emission of such gasses as SO<sub>2</sub>, CO<sub>2</sub>, CO, NO<sub>x</sub> 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, especially excavation and leveling, handling of building materials such as 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 such as excavation and leveling, 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 Groundwater Quality

**Possible contamination of groundwater** – may occur due to general construction activities and malpractice including inappropriate extraction of resource material, handling of hazardous substances (i.e. 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) etc. These impacts can be avoided by working carefully and respecting the construction practices set forth in this ESMP, so the construction will not have a significant negative impact on the groundwater.

### Impact on Geomorphology and Soil Quality

- Possible occurrence of rockfall depending on the type of terrain and stability of slopes;
- Erosion – removal of topsoil may poses risk from erosion of bare soil and enhances the impact of rainwater;
- Soil compaction due to construction machinery (vehicles and equipment for construction) moving around the location;
- Uncontrolled (storing, handling and depositing) and untreated waste is one of the major sources of pollution that can disrupt soil quality.

### Impact on Land use

Construction of the third lanes may lead to:

- Conversion of present land use: from forest to construction land,

- Interrupted land use by inadequate waste management in terms of uncontrolled and untreated waste (e.g. accidental spills from construction machinery, solid waste generated by workers on the construction site) that might be harmful to local communities.

#### 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 soil with hazardous substances (fuel and oils in case of spills) can harm biodiversity of the surrounding area.
- Removal of a layer of vegetation may destroy animals' habitats.

#### Impact on the Protected Areas

- The observed project is not situated in any of the existing nor planned protected areas. The nearest protected area is the National park Una, located cca. one kilometer away from the nearest point of project site. Considering the distance of the project site, it is considered that the construction activities will not have any direct or indirect impacts on the National park.

#### 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.

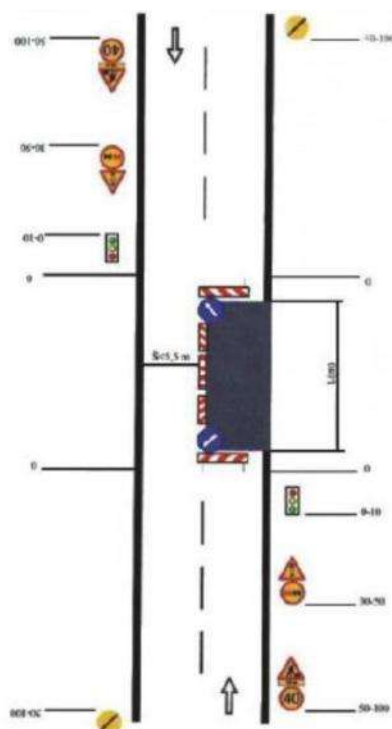
#### Impact on Traffic Safety and Traffic Flow

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 roads (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 surrounding area.

Road safety measures that will be in place during the reconstruction of the bridge include light and vertical traffic signage as shown on figure 16.



Figure 16: scheme of an example of road safety measures during the construction phase



Source: PC Roads Federation of BH

### Population Safety Impact

**The presence of workers:** can sometimes impact the safety of the local population. Since, according to local practice, no working camps will be set up, this impact is minor.

### Socio-Economic Impacts

**Temporary land acquisition and damage to private property:** At this time, 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.

**Impact on cultural-historical heritage:** difficult access to the national park Una in close vicinity from the project section. Although the project section is the most convenient way to reach the national park from the south east part of Bosnia and Herzegovina this impact is minimized by the avoidance of full traffic stoppage throughout the entire construction period.

**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 living conditions of local communities**

Following adverse impacts during construction are expected:

- 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 fact that there will be no full stoppage of traffic during the construction

**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.

### **6.3. IMPACTS DURING OPERATION AND MAINTENANCE**

Neither new negative environmental impacts, nor deterioration of existing negative impacts, during operation and maintenance are expected.

Socio-Economic Impacts: According to table 1. Traffic prognosis for M5, section Vrtoče-Bosanski Petrovac An even and stable rise of the number of vehicles on the project section can be detected during the implementation period. Accordingly, the increase of AADT in year 2040 will be 78% compared to the AADT in 2016. Furthermore, an increase in speed of vehicles is expected due the adding of the third lane.

### **6.4. POSITIVE IMPACTS**

Project implementation 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:

- Adding third lane will improve the connection between the city and cantons in the area;
- Improved quality of life on the whole (better access to important institutions: health, education, job etc.);
- Additional third lanes for slow vehicles as a direct consequence will have better traffic flow and less congestion, what means the emissions from traffic pollutants shall decrease.
- Better traffic flow.

## 6.5. Enhancement measures

Table 6: Enhancement measures

Impact	Enhancement Measures	Cost Assessment (US\$)		Institutional Responsibility	
		Operative	Implementation	Operative	Implementation
▪ Traffic	<ul style="list-style-type: none"> <li>▪ High improvement of drivers safety with constructing a separate lane for slow vehicles and enhancing drivers traffic visibility;</li> <li>▪ Better traffic flow</li> <li>▪ Reduction in time travel and cost by enhancing road surface, improving road and travel safety by building a third lane for slow vehicles.</li> </ul>	Included in construction works	Included in supervision	Contractor	PC Roads FBH
▪ Socio-economic	<ul style="list-style-type: none"> <li>▪ New job and business opportunities for local construction workers and firms;</li> <li>▪ Better acces for local cominity to necessary services such as jobs, education, health</li> </ul>	Included in construction works	Included in supervision	Contractor	PC Roads FBH
▪ Air and Soil	<ul style="list-style-type: none"> <li>▪ Due to construction of third lanes for slow vehicles there will be less congestion, meaning the emissions of traffic pollutants will decrease what will as a result have better air quality and lesser soil pollution.</li> </ul>	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 this task 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 components<sup>5</sup>:

- (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

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<sup>5</sup> 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 of private land 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. 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 calculate 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

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implementing any of any corrective actions. The Contractor shall inform the complainant of the Grievance redress mechanism. All grievances will be registered with the Central Grievance Commission 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 regular 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.

During the construction phase, Contractors will be required to allocate the responsibility of overseeing day-to-day compliance with the SS ESMP to a senior member of staff. Contractors will be responsible for the implementation of all measures included in the SS ESMP for all activities undertaken in terms of the construction contract (including work undertaken by subcontractors). Compliance of Contractors with these measures will be assessed by the Construction Supervisor appointed by the JP Ceste FBiH, in line with the Decree on Construction Site Organisation, Mandatory Documentation on Construction Site and Construction Work Participants.

#### **7.1.2. Land Acquisition and Involuntary Resettlement**

This project envisages adding a third lane to the existing road on section Ripač-Dubovsko. These activities imply the expropriation of 46 publicly and 37 privately owned land plots. The number of PAPs equals 33.

Accordingly, an Abbreviated Resettlement Action Plan (ARAP) has to be developed and implemented before construction initiation.

All land acquisition and expropriation will be conducted in compliance with the applicable legislation in FBiH (in particular, the Law on Expropriation of FBiH), the requirements set by WB OP 4.12 on Involuntary Resettlement.

All owners, occupants and users of affected properties at the time of the cut-off date, whether with or without fully recognized ownership rights, are eligible for compensation or assistance which will be outlined in the Entitlements Matrix in the integrated RAP.

All compensation must be paid in line with provisions determined the ARAP and Resettlement Policy Framework (RPF). Compensation will always be effected prior to land entry or taking of possession over property by the expropriation beneficiary. The land cannot be taken physically (i.e. any civil works or construction cannot start) before compensation has been paid to the affected persons.

All affected persons will be informed, meaningfully consulted and encouraged to participate throughout the development and implementation of the ARAP and land acquisition process, in accordance with the information disclosure and consultation requirements set out in the RPF.

In addition, an effective grievance mechanism is in place for receiving and addressing in a timely fashion specific concerns about compensation and relocation raised by displaced persons, in the manner described in more detail in Chapter 10.2.1 of this ESMP (Grievance Mechanism).

## **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. Population near the construction site and construction workers, as well as road users 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 standards<sup>6</sup> 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.

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<sup>6</sup> - *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,
  - Name and contact address/telephone number of responsible personnel,
  - Name and contact address/telephone number of contractor,

- Sincere apology for the caused inconvenience.

According to the Law on Roads FBH, article 77. For every construction on public road, for works on regular maintenance or any other works under traffic, appropriate temporary signage has to be set up. Respectively traffic has to be regulated in a way that will guarantee safety of traffic and contractor with minimum traffic flow disruptions.

The appropriate signage will be determined based on the Regulations on Traffic Signs (Regulations on Traffic Signs and Signage on Roads, Ways of Marking Works and Obstacles on Roads and Signs that an Authorized Person Can Give to Participants in Traffic ("Official Gazette of BiH", No. 16/07)) and in line with the Guidelines for Design, Construction, Maintenance and Control on Roads (Sarajevo/Banja Luka 2005).

TMP should include details about the following:

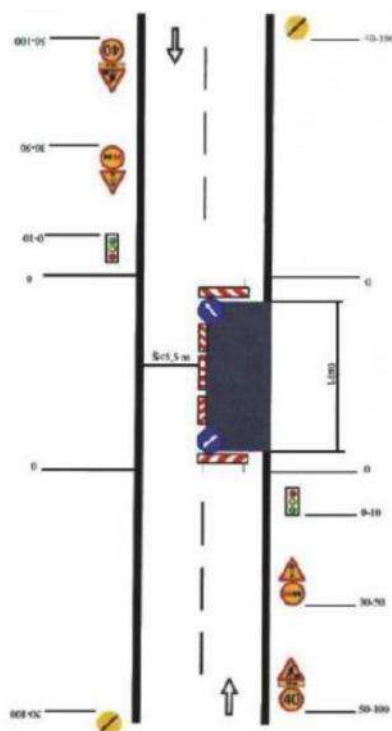
- Construction plan by phases,
- Beginning and duration of works,
- Overview of the existing conditions near the construction site,
- Identification of affected areas,
- Mitigation measures
- Circulation plans, including zones of entry and exit, routes for towing of material, turnaround points, parking 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.

Road safety measures that will be in place during the reconstruction of the project road section include light and vertical traffic signage as shown on figure 17.

Figure 17: Scheme of an example of road safety measures during the construction phase



Source: PC Roads Federation of BH

#### 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 public or 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 ARAP which is to be developed and 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.

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### 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	
<b>PRE-CONSTRUCTION PHASE</b>						
<ul style="list-style-type: none"> <li>Impacts on living conditions</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> </ul>	Internal resources	Internal resources	PC Roads FBH	PC Roads FBH	<ul style="list-style-type: none"> <li>Impacts on living conditions</li> </ul>
<ul style="list-style-type: none"> <li>Compliance with national legislation</li> </ul>	<ul style="list-style-type: none"> <li>Obtaining all necessary permits for Project implementation.</li> </ul>	Internal resources	Internal resources	PC Roads FBH + Project designer	Competent body for issuing the permit	<ul style="list-style-type: none"> <li>Compliance with national legislation</li> </ul>
<ul style="list-style-type: none"> <li>Job creation and impacts on local business</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>Informing business owners in advance about the construction works, in order to be able to plan the necessary road use accordingly (via local newspapers, the municipality's notice board and website and via PC Roads' website as soon as the contract is signed)</li> </ul>	Internal resources	Internal resources	Contractor + PC Roads FBH	Contractor + PC Roads FBH	Applicable if the Contractor needs new workforce.

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Impact/Problem	Mitigation Measures	Cost Assessment (US\$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
<ul style="list-style-type: none"> <li>▪ Expropriation and involuntary resettlement</li> </ul>	<ul style="list-style-type: none"> <li>▪ Development of Abrivated Resettlement Action Plna (ARAP)</li> <li>▪ Public consultations on ARAP</li> <li>▪ Implementaation of provisions made in ARAP</li> <li>▪ All land acquisition and expropriation will be conducted in compliance with the applicable legislation in FBiH and World Bank OP 4.12. Involunaqtry Resettlement</li> <li>▪ Compensation will always be <i>paid out</i> prior to land entry or taking of possession over property by the expropriation beneficiary.</li> <li>▪ All affected persons will be informed, meaningfully consulted and encouraged to participate throughout the development of ARAP and the land acquisition process, in accordance with the information disclosure and consultation requirements set out in the RPF.</li> <li>▪ Assuring an effective grievance mechanism for receiving and addressing in a timely fashion specific concerns about compensation and relocation raised by displaced persons, in the manner described in more detail in Chapter 10.2.1 of this ESMP (Grievance Mechanism).</li> </ul>	Internal resources	Internal resources	PC Roads FBH	PC Roads FBH + City of Bihać	
<b>CONSTRUCTION PHASE</b>						

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Impact/Problem	Mitigation Measures	Cost Assessment (US\$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
<ul style="list-style-type: none"> <li>▪ Access restriction</li> </ul>	<ul style="list-style-type: none"> <li>▪ 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 local newspapers, the municipality's notice board and website and via PC Roads' website as soon as the contract is signed</li> <li>▪ Implementation of TMP.</li> <li>▪ Clear signs posted. Notifications made through media or other road safety clubs on road closure.</li> <li>▪ Area where materials and equipment are stored are clearly marked and closed off to unauthorized access.</li> </ul>	Included in construction works	Included in supervision	Contractor	Supervisory body*	
<ul style="list-style-type: none"> <li>▪ Temporary occupation of privately owned land plots for the purpose of construction of access roads and placement of staff, machines and material.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Avoidance of temporary occupation of privately owned plots;</li> <li>▪ In case avoidance is not possible, implementation of RPF provisions on temporary occupation.</li> </ul>	Internal resources	Contractor	PC Roads FBH	PC Roads FBH*	
<ul style="list-style-type: none"> <li>▪ Impacts on living conditions of local community</li> </ul>	<ul style="list-style-type: none"> <li>▪ Providing timely information to the citizens on any type of disruption and inconvenience; via 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.</li> </ul>	Included in construction works	Included in supervision	PC Roads FBH (providing information)	Supervisory body*	

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

\* 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	
	<ul style="list-style-type: none"> <li>▪ Implementation of TMP;</li> <li>▪ Implementation of CSOP;</li> <li>▪ Implementation of ESMP provisions.</li> </ul>			s to the citizens) + Contractor(following the provisions of the TMP, CSOP, ESMP		
<ul style="list-style-type: none"> <li>▪ 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</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implementation of TMP;</li> <li>▪ Introduction of appropriate signalization and warning signs;</li> <li>▪ Timely information to public on traffic disruptions.</li> </ul>	Included in construction works	Included in supervision	Contractor	Supervisory body*	In collaboration with the local Ministry of the Interior Relations and BHAMK
<ul style="list-style-type: none"> <li>▪ Air emissions:                             <ul style="list-style-type: none"> <li>- exhaust gasses;</li> <li>- dust generation</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ High quality fossil fuels (with low percentage of sulphur and lead) need to be used for construction machinery and equipment;</li> <li>▪ All machines and vehicles to be used in construction/ reconstruction/ rehabilitation activities must have use permit;</li> <li>▪ Vehicles need to be regularly maintained ;</li> <li>▪ Equipment with installed filters to reduce soot emission needs to be used;</li> </ul>	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	
	<ul style="list-style-type: none"> <li>▪ When not in use the equipment and machinery need to be shut down;</li> <li>▪ Maximum speed of the vehicle on unpaved roads should be restricted to 20 km/h;</li> <li>▪ Moistening/ wetting the site to prevent dust occurrence (in areas with dry soils or where activities generate dust);</li> <li>▪ Sand and gravel materials need to be transported in covered trucks.</li> </ul>					
<ul style="list-style-type: none"> <li>▪ Increased level of noise and vibration:</li> <li>- noise emission and noise disturbance;</li> <li>- vibration</li> </ul>	<ul style="list-style-type: none"> <li>▪ In the case of noise complaints by local residents, simultaneous use of machines that generate noise over 70 dB needs to be limited;</li> <li>▪ In the case of noise complaints by local residents, number of trucks per day visiting the site needs to be reduced;</li> <li>▪ All machines and vehicles to be used in construction/ reconstruction/ rehabilitation activities must have use permit;</li> <li>▪ When not in use the equipment and machinery need to be shut down;</li> <li>▪ Maximum speed of the vehicle on unpaved roads should be restricted to 20 km/h.</li> </ul>	Included in construction works	Included in supervision	Contractor	Supervisory body*	
<ul style="list-style-type: none"> <li>▪ Emissions into groundwater:</li> <li>- possible contamination of groundwater</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ensure there is an emergency plan to contain all leaks and spills that result from an accident.</li> <li>▪ Prevent any repairs, handling of machinery, fuels or lubricants in areas that are not designated for such use.</li> <li>▪ Proper waste disposal and separation of hazardous waste is required, as well as the engagement of</li> </ul>	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	
	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.					
▪ Soil degradation and emissions to soil: - soil erosion; - soil contamination by oils, fuels and other hazardous substances; - occurrence of rockfall.	▪ Control during earthworks to prevent degradation of terrain stability is required; ▪ Proper waste disposal; separation of hazardous waste; engagement of authorized companies for final waste disposal; ▪ Oil and fuel collection systems to be fitted to prevent leakage	Included in construction works	Included in supervision	Contractor	Supervisory body*	
▪ Conversion of the area and conversion of present land use: - changes in land use; - deforestation;	▪ 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 preventing land disturbance. ▪ Oil and fuel collection systems to be designed to prevent leakage; ▪ Rehabilitate deforested areas after completion of works. ▪ Replacement afforestation activities for the areas where forest/trees will be removed to compensate for the third lane; ▪ All trees will be removed in cooperation with the	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	
	responsible authorities who will manage the lumber.					
<ul style="list-style-type: none"> <li>▪ Removal of vegetation cover and topsoil, degradation of biological and ecological resources at the construction site;</li> <li>▪ Decrease in the current aesthetic value of the landscape (construction site);</li> <li>▪ removal of vegetative cover.</li> </ul>	<ul style="list-style-type: none"> <li>▪ Prevent and control oil, fuel, and chemical spillages that can find their way to the ground water;</li> <li>▪ Topsoil must be returned and re-vegetated after construction activities are done;</li> <li>▪ Planting ligneous plants around roads and adjacent areas can help to support local flora and fauna;</li> <li>▪ All trenches up to 0,5 m of depth must be sloped or have ramps in case of necessity for animals' exit. All trenches shall be checked whether there are any animals before covering them with soil;</li> <li>▪ Seeding, planting and re-vegetation with autochthonous species should cover areas affected by the Project;</li> <li>▪ The land intended for the Project needs 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.</li> </ul>	Included in construction works	Included in supervision	Contractor	Supervisory body*	
<ul style="list-style-type: none"> <li>▪ Inadequate waste handling</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implementation of WMP that shall ensure environmentally sound collection of waste, its storage, transport and final disposal, and primarily reuse / recycling.</li> <li>▪ No clandestine waste disposal will be allowed on site, including open burning of wastes.</li> <li>▪ The waste should be stored for a short period of time and should be removed as soon as possible.</li> <li>▪ The waste should be primarily recycled or reused where</li> </ul>	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	
	<p>possible and then finally disposed</p> <ul style="list-style-type: none"> <li>▪ No open burning of wastes is allowed on site</li> <li>▪ All 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).</li> <li>▪ Disposal sites of construction material will be determined by the municipality and should be handled in the most appropriate environmental manner.</li> </ul>					
<ul style="list-style-type: none"> <li>▪ Inadequate workers safety</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implementation of work safety measures:                             <ul style="list-style-type: none"> <li>- 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</li> <li>- Provide personal protective equipment,</li> <li>- Respect safety procedures,</li> <li>- Provide portable toilets,</li> <li>- Provide drinking water</li> </ul> </li> </ul>	Included in construction works	Included in supervision	Contractor	Supervisory body*	
<ul style="list-style-type: none"> <li>▪ Accidental situations i.e. spills, leakage of oils, fats, fuels and similar hazardous materials</li> </ul>	<ul style="list-style-type: none"> <li>▪ Implementation of Environmental Management Plan which includes:                             <ul style="list-style-type: none"> <li>- Spill Response Plan,</li> <li>- Emergency Preparedness and Response Plan.</li> </ul> </li> <li>▪ Implementation of Management Plan of Fire and Explosion</li> </ul>	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"> <li>Materials supply and transport</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of CSOP to ensure materials are transported in covered vehicles to reduce impacts on environment</li> </ul>	Included in construction works	Included in supervision	Contractor	Supervisory body**	
<b>CHANCE-FIND PROCEDURES DURING CONSTRUCTION PHASE</b>						
<ul style="list-style-type: none"> <li>Impacts on cultural heritage</li> </ul>	<ul style="list-style-type: none"> <li>If archaeological findings or other chance finds appear on or near construction site immediate work suspension and local authorities notification is required;</li> </ul>	Included in construction works	Included in supervision	Contractor	Supervisory body*	In case of finding cultural heritage, supervision is implemented by the competent institution
<b>OPERATION PHASE</b>						
<ul style="list-style-type: none"> <li>Problems due to lack of maintenance</li> </ul>	<ul style="list-style-type: none"> <li>Regular road maintenance works</li> </ul>	Included in maintenance works	Internal resources	Contractor for maintenance works	PC Roads FBH	
<ul style="list-style-type: none"> <li>Decrease in road safety due to the</li> </ul>	<ul style="list-style-type: none"> <li>Regular maintenance of road safety equipment and signage</li> </ul>	Incl. in maintenance	Internal	Contractor for	PC Roads FBH	

\* 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	
increase of traffic and speed		works	resources	maintenanc e works		

## **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.



October 2017

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
<b>PRE-CONSTRUCTION PHASE</b>								
▪ Job creation and impacts on local businesses	<ul style="list-style-type: none"> <li>▪ Number of employed persons from local communities</li> <li>▪ Timely informing the local communities</li> </ul>	Wider area of construction	Inspection	Prior to construction	Included in performance	Included in performance	Contractor	Contractor
▪ Expropriation and involuntary resettlement	<ul style="list-style-type: none"> <li>▪ Implementation of ARAP provisions</li> </ul>	PC Roads of FBH	Monthly and quarterly internal reports	Prior to construction	/	25000	PC Roads of FBH+ Supervisory body	PC Roads of FBH+ Supervisory body
▪ 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"> <li>▪ Implementation of RPF and ARAP provisions</li> </ul>	Construction site	Visual inspection and inspection	Prior to construction and during construction when necessary	Included in construction contract	Included in construction contract	Contractor	Contractor
<b>CONSTRUCTION PHASE</b>								
▪ Access restrictions	<ul style="list-style-type: none"> <li>▪ TMP in place,</li> <li>▪ Implementation of RPF, provisions on compensation procedures for businesses</li> </ul>	Construction site	Visual inspection	Random checks at least once a week during the construction	Included in supervision	Included in supervision	Supervisory body + PC Roads	Supervisory body + PC Roads

October 2017

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
	affected by access restrictions						FBH	FBH
<ul style="list-style-type: none"> <li>▪ Restrictions on land use and damage to the private property (agricultural plots, horizontal infrastructure, fences and railings) due to disposal of construction waste, work camps and parks of heavy machinery</li> </ul>	<ul style="list-style-type: none"> <li>▪ CSOP in place,</li> <li>▪ Disposal of construction and maintenance materials,</li> <li>▪ Implementation of RPF provisions on compensation procedures in case occasional land use cannot be avoided, compensation will be provided to affected owners/users</li> <li>▪ grievances</li> </ul>	Construction site	Visual inspection	Prior to construction and 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
<ul style="list-style-type: none"> <li>▪ 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)</li> </ul>	<ul style="list-style-type: none"> <li>▪ TMP in place</li> <li>▪ Traffic patterns,</li> <li>▪ Timely information to the citizens</li> </ul>	On construction site and nearby	Visual inspection and inspection	random checks during the week	Included in supervision	Included in supervision	Supervisory body	Supervisory body
<ul style="list-style-type: none"> <li>▪ Air emissions:                             <ul style="list-style-type: none"> <li>- exhaust gasses;</li> <li>- dust generation</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>▪ Level of dust (amount of particles of sediment and floating particles)</li> <li>▪ Emissions of exhaust gases from vehicles and equipment</li> <li>▪ (SO<sub>2</sub>, NO<sub>2</sub>, dim and PM<sub>10</sub>)</li> </ul>	Construction site	Measuring devices	As a baseline and during construction when needed and upon complaints by the citizens	-	500 USD/measuring	Contractor	Authorized laboratory

October 2017

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"> <li>Increased level of noise and vibration:                             <ul style="list-style-type: none"> <li>- noise levels</li> <li>- vibration</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Level of noise</li> </ul>	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
Soil pollution	<ul style="list-style-type: none"> <li>Soil quality, including, PH, heavy metals, phosphorus, nitrogen, Na, Ca, salts, PAHs hydrocarbons</li> </ul>	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
<ul style="list-style-type: none"> <li>Emissions into groundwater and soil due to improper waste handling</li> </ul>	<ul style="list-style-type: none"> <li>CSOP in place,</li> <li>WMP in place</li> </ul>	Construction site	Visual inspection, disposal records or receipts from landfills	Daily	Included in performance	Included in performance	Contractor + Supervision	Contractor
<ul style="list-style-type: none"> <li>Soil degradation:                             <ul style="list-style-type: none"> <li>- soil erosion;</li> <li>- occurrence of landslide and rockfall.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Implementation of CSOP;</li> <li>Implementation of WMP.</li> </ul>	Construction site	Visual inspection	Regularly during construction	Included in performance	Included in performance	Contractor + Supervision	Contractor
<ul style="list-style-type: none"> <li>Conversion of the area and conversion of present land use:</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of CSOP</li> </ul>	Construction site	Visual inspection	Regularly during construction, as appropriate.	Included in performance	Included in performance	Contractor + Supervision	

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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
- changes in land use; - deforestation;								
▪ Removal of vegetation cover.	▪ Number and type of planted vegetation and analysis of vegetation cover prior to the beginning and upon completion of works.	Construction site	Visual inspection and record-taking	Prior to beginning (baseline) and upon completion of works	Included in performance	Included in performance	Contractor + Supervision	Contractor
▪ Degradation of biological and ecological resources	▪ All trenches up to 0,5 m of depth must be tilted or have ramps in case of necessity for animals' exit. All trenches shall be checked whether there any animals in the prior to covering them with soil.	Construction site	Visual inspection	Regularly during construction, as appropriate.	Included in performance	Included in performance	Contractor + Supervision	Contractor
▪ Waste management	▪ 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
▪ Accidental situations i.e. spills, leakage	▪ Implementation of EMP which includes: - Spill Response Plan,	Construction site	Visual inspection	Daily	Included in performance	Included in performance	Contractor +	Contractor

October 2017

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
	- Emergency Preparedness and - Response Plan						Supervision	
▪ Materials supply	▪ Implementation of CSOP (the origin of material, material approvals etc.)	Construction site	Reports	Daily	Included in performance	Included in performance	Contractor + Supervision	Contractor
▪ 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.) ▪ Implementation of World Bank Occupational Health and Safety Guidelines	Construction site	Visual inspection	Daily	Included in performance	Included in performance	Contractor + Supervision	Contractor

*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 the entire period of 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 investor. 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 structures' management and maintenance. Regular and timely monitoring 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 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), 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.

## **10. PUBLIC DISCUSSION AND INFORMATION DISCLOSURE**

### **10.1. PUBLIC CONSULTATION**

Public consultation of the subject ESMP was organized in Bihać after the WB 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 31.05.2018 and on the website of Bihać City (Radio Bihać) on 05.06.2018. Public consultations were announced on the website PC Roads FBH on 31.05.2018 and on the website of Bihać City (Radio Bihać) on 05.06.2018, and on 04.06.2018. in local newspapers (Dnevni Avaz). The public consultations were held on 19.06.2018. in Bihać, and the Minutes of the Public Discussion on ESMP is an Appendix 3 of this document. Public consultations were attended by 10 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](http://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 reported 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 Bihać 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.jpafbih.ba](http://www.jpafbih.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@jpafbih.ba](mailto:zalbena@jpafbih.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**

### **11.1. Environmental aspects**

The Contractor shall establish all required baseline data before the commencement of works. The Baseline – Monitoring data shall include air quality data, soil quality data, survey and analysis of vegetation cover prior to the beginning and upon completion of works on construction site. 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 acts<sup>7</sup>, 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.

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<sup>7</sup> 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

## **11.2. Social aspects**

- public consultations
- implementing the changes derived from the public consultations (if any) to the ESMP
- Development of ARAP
- Disclosing the ARAP
- Public consultation on ARAP
- Implementation of ARAP, including:
  - Expropriation of 46 Public land plots
  - Expropriation of 37 Private land plots
- Agreement upon payment of compensation with respective owners
- Payment of compensation in accordance to provisions determined in the ARAP

## **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"> <li>• One-time incident/grievance – Date: _____</li> <li>• Happened more than once (How many times?) _____</li> <li>• On-going (currently experiencing problem)</li> </ul>		
What would you like to see happen?		
DATE:	SIGNATURE:	
RETURN THIS FORM TO:	<p><i>CENTRAL FEEDBACK DESK</i></p> <p><i>PC ROADS OF THE FBH</i></p> <p><i>Terezija 54,</i></p> <p><i>71000 Sarajevo</i></p> <p><i>Note: All copies are returned to PIU</i></p>	

**APPENDIX 2. GRIEVANCE REGISTRATION TEMPLATE TABLE**

No.	Date of receipt	Type of grievance	Description of grievance	Complainant		Date of acknowledgement of receipt	Description of actions undertaken	Date of solvation of grievance
				Status	Sex			

## APPENDIX 3. REPORT ON PUBLIC DISCUSSION



JP Ceste Federacije BiH d.o.o. Sarajevo poziva sve zainteresirane subjekte, nevladine organizacije i stanovnike Grada Bihać i naselja koja gravitiraju području namjeravane izgradnje trake za spora vozila na dionici **Ripač – Vrtoče** u Bihaću, da uzmu učešće u

### JAVNOJ RASPRAVI

nacrtu **Plana upravljanja okolišem i društvenim aspektima za projekat izgradnje trake za spora vozila na dionici Ripač – Vrtoče (M5)**

koja će se održati u Bihaću, u **prostorijama Grada Bihać 19.06.2018. godine u 13.00 sati**, s ciljem davanja prijedloga i sugestija javnosti i uključivanja relevantnih pitanja u finalnu verziju dokumenata. Dokumenti su izrađeni za potrebu Programa modernizacije magistralnih cesta u FBiH prema politikama kreditora. Nacrti dokumenata mogu se pronaći na službenoj stranici JP Ceste FBiH na sljedećem linku: <http://jpcfbih.ba/bs/aktivnosti/modernizacija-magistralnih-cesta/38> i na web stranici Grada Bihać.

Svi zainteresirani subjekti koji nisu u mogućnosti da prisustvuju javnoj raspravi mogu svoje sugestije i komentare dostaviti do 19.06.2018. putem e-mail adrese: [pimt@jpcfbih.ba](mailto:pimt@jpcfbih.ba).

#### Dnevni red:

1. Prezentacija Plana upravljanja okolišem i društvenim aspektima za projekat izgradnje trake za spora vozila na dionici Ripač – Vrtoče (M5)
2. Pitanja, diskusija, odgovori i objašnjenja

31.05.2018.

Announcement of Public discussion in the Local Newspaper „Dnevni Avaz“ (04.06.2018.)

**OPŠTI NAČRT ZA PROMJENU DRUŠTVENOG I EKONOMSKOG ŽIVOTA U OKOLINI GRADNE ZONE ZA 2017. I 2018. GODINU**

U okviru ovog dokumenta predloženo je nekoliko ključnih projekata i aktivnosti koje će biti sprovedene u okviru ovog projekta. Dokument sadrži detaljne informacije o svim aspektima projekta, uključujući planove, budžet i vremenski raspored. Dokument je dostupan na internetu na adresi: [www.dnevniavaz.com](http://www.dnevniavaz.com).

**1. Osnovni podaci o projektu**

1.1. Naziv projekta: Promjena društvenog i ekonomskog života u okolini gradske zone.

1.2. Cilj projekta: Poboljšanje kvalitete života stanovnika u okolini gradske zone.

1.3. Odnosnik: [info@opn.hr](mailto:info@opn.hr)

**2. Opis projekta**

2.1. Opis projekta: Projekt se sastoji od nekoliko ključnih aktivnosti, uključujući izradu plana, budžet i vremenski raspored.

2.2. Cilj projekta: Poboljšanje kvalitete života stanovnika u okolini gradske zone.

2.3. Odnosnik: [info@opn.hr](mailto:info@opn.hr)

**3. Budžet projekta**

3.1. Ukupni budžet: 100.000,00 eura.

3.2. Izvor sredstava: Gradsko proračunsko sredstvo.

3.3. Vremenski raspored: Projekt će biti sproveden u okviru ovog projekta.

**4. Vremenski raspored**

4.1. Osnovni podaci: Projekt će biti sproveden u okviru ovog projekta.

4.2. Detaljni podaci: Projekt će biti sproveden u okviru ovog projekta.

**5. Zaključak**

5.1. Projekt će biti sproveden u okviru ovog projekta.

5.2. Projekt će biti sproveden u okviru ovog projekta.

5.3. Projekt će biti sproveden u okviru ovog projekta.

**22** Dnevni Avaz (Dnevni Avaz) 4. JUNI 2018. kiosk

**VELIKA BRITANIJA** Otkrivena crna strana uposlenih r

# Rade od jutra do mra im pasoše, nemaju s

Trenutno se gradi više od 500 superluksuznih jahti u  
• Nesreće, povrede i smrti su sastavni

**The Guardian**

Ako katim stalištem njegove najpoznatije osobe, Britanac Dirk Cimerman (35), leti na superjachtu, sjeda u helikopter i leti u portu gdje se nalazi njegova jahta. Kako kaže, mnogo je puta putovala i letela u portu gdje se nalazi njegova jahta. Kako kaže, mnogo je puta putovala i letela u portu gdje se nalazi njegova jahta.

**Novi milijarderi**

Sukobio se s najbogatijim milijarderni na svijetu, a sada su potrošili, ali i osvojili helikopter u pomoć za hitnu pomoć. Kako kaže, mnogo je puta putovala i letela u portu gdje se nalazi njegova jahta.



Često se žali da u okolini gradske zone...

**Teška povreda mozga**

Jakov Nikol (Jakov Nikol, 44) je Korošec koji je preživio tešku povredu mozga. Dvije godine prije je u sudaru s autobusom pretrpio tešku povredu mozga. Kako kaže, mnogo je puta putovala i letela u portu gdje se nalazi njegova jahta.

**Čuvana plaža iscrpljena turizmom**

Dobiva četiri mjeseca 'odmora' od posjetilaca. U ovom dijelu talijanskog zaljeva sniman film 'Plaža'.

Plaža je iscrpljena turizmom...

**YAHOO! NEWS**

Nekadašnja talijanska plaža koja je postala poznata zbog filma 'Plaža' s Leonardo DiCaprio, uzajamno se razvijaju i razvijaju.

Svi se žele vratiti na plažu, ali plaža je iscrpljena turizmom. Kako kaže, mnogo je puta putovala i letela u portu gdje se nalazi njegova jahta.

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Plaža je iscrpljena turizmom...

**JP CESTE FEDERACIJE BIH**

**JAVNOJ RASPRAVI**

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1.3. Odnosnik: [info@opn.hr](mailto:info@opn.hr)

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3.3. Vremenski raspored: Projekt će biti sproveden u okviru ovog projekta.

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**5. Zaključak**

5.1. Projekt će biti sproveden u okviru ovog projekta.

5.2. Projekt će biti sproveden u okviru ovog projekta.

5.3. Projekt će biti sproveden u okviru ovog projekta.





JP Ceste Federacije BiH d.o.o. Sarajevo poziva sve zainteresirane subjekte, nevladine organizacije i stanovnike Grada Bihća i naselja koja gravitiraju području namjeravane rekonstrukcije crne tačke, kružni tok Kamenica i području namjeravane izgradnje trake za spora vozila na dionici Ripač – Vrtoče u Bihću, da uzmu učešće u

**JAVNOJ RASPRAVI**

o nacrtu Plana upravljanja okolišem i društvenim aspektima za projekat rekonstrukcije crne tačke, kružni tok Kamenica u Bihću

i

nacrtu Plana upravljanja okolišem i društvenim aspektima za projekat izgradnje trake za spora vozila na dionici Ripač – Vrtoče (M5)

koja će se održati u Bihću, u prostorijama Grada Bihća 19.06.2018. godine u 13.00 sati, s ciljem davanja prijedloga i sugestija javnosti i uključivanja relevantnih pitanja u finalnu verziju dokumenata. Dokumenti su izrađeni za potrebu Programa modernizacije magistralnih cesta u FBiH prema politikama kreditora. Nacrti dokumenata mogu se pronaći na službenoj stranici JP Ceste FBiH na sljedećem linku: <http://jpcfbih.ba/bs/aktivnosti/modernizacija-magistralnih-cesta/38> i na web stranici Grada Bihća.

Svi zainteresirani subjekti koji nisu u mogućnosti da prisustvuju javnoj raspravi mogu svoje sugestije i komentare dostaviti do 19.06.2018. putem e-mail adrese: [pimr@jpcfbih.ba](mailto:pimr@jpcfbih.ba).

**Dnevni red:**

1. Prezentacija Plana upravljanja okolišem i društvenim aspektima za projekat rekonstrukcije crne tačke, kružni tok Kamenica u Bihću
2. Prezentacija Plana upravljanja okolišem i društvenim aspektima za projekat izgradnje trake za spora vozila na dionici Ripač – Vrtoče (M5)
3. Pitanja, diskusija, 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 (published on May 31, 2018)

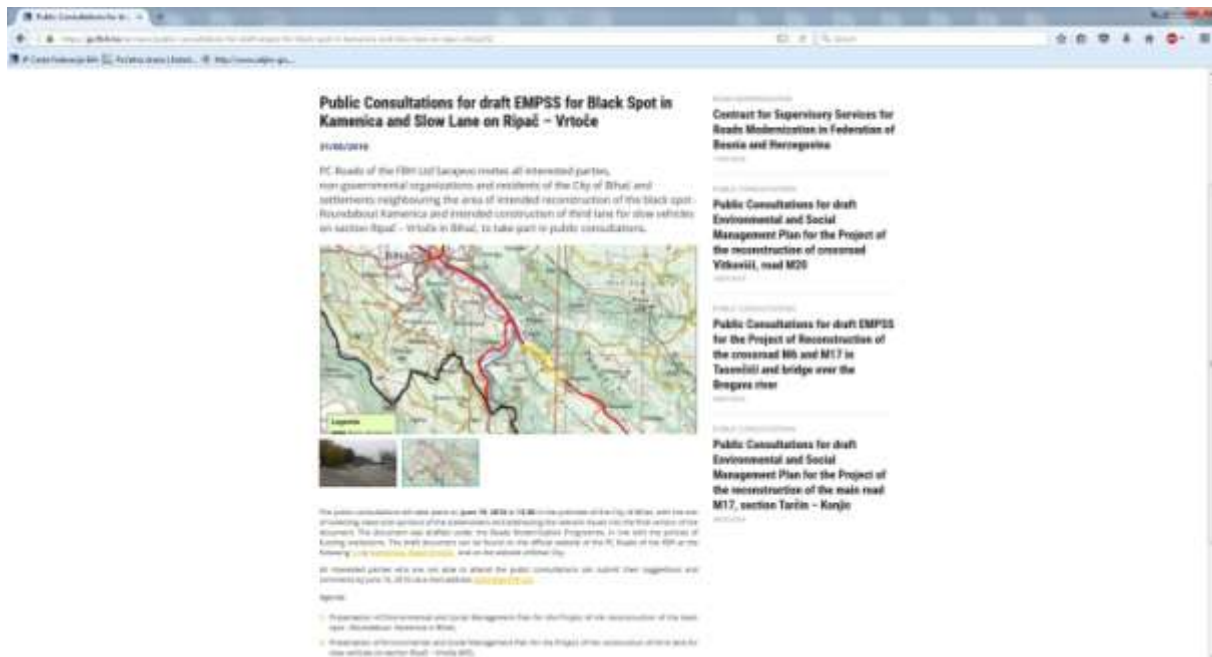
<https://jpcfbih.ba/bs/novosti/javne-rasprave-o-nacrtima-planova-upravljanja-okolisem-za-projekte-rekonstrukcije-crne-tacke-kamenica-i-izgradnje-trake-za-spora-vozila-na-dionici-ripac-vrtoce/52> - Announcement of the Public discussion (B/H/S language)

<http://jpcfbih.ba/bs/aktivnosti/modernizacija-magistralnih-cesta/38> - Document (B/H/S language)

<https://jpcfbih.ba/bs/novosti/obavijest-o-odgadanju-javne-rasprave/53> (06.06.2018.)

<https://jpcfbih.ba/en/news/public-consultations-for-draft-empss-for-black-spot-in-kamenica-and-slow-lane-on-ripac-vrtoce/52> - Announcement of the Public discussion (English language)

<http://jpcfbih.ba/en/activities/modernization-of-main-roads/38> - Document (English language)





## 2. Website of Radio Bihac (City of Bihac) (published on June 5, 2018)

<http://www.radiobihac.com/vijest/izgradnja-trake-za-spora-vozila-na-dionici-ripac-vrtoce-i-kruznog-toka-u-kamenici/934>

<http://www.radiobihac.com/vijest/javna-rasprava-o-izgradnji-kruznog-toka-u-kamenici-se-odgoda/941>



## MINUTES

### **of Public Discussion on the Draft Environmental and Social Management Plan for the Project of Construction of a Third Lane on the Section Ripač-Vrtoče (main road M5)**

A public discussion on the Draft Environmental and Social Management Plan for the Project of Construction of a Third Lane on the Section Ripač-Vrtoče was held on June 19, 2018 in the premises of the City of Bihać at 1PM.

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

- **Anis Bašić** – substitute for the Project Manager for the Project of Construction of a Third Lane on the Section Gornje Bravsko-Ključ
- **Selma Ljubijankić** - member of the PIT in charge of social aspects under the Road Sector Modernization Program
- **Haris Zejnić** – PIT assistant for environmental monitoring under the Roads Modernization Program.

A list of all participants is enclosed to these minutes.

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

After the introduction, **Haris Zejnić** presented the Draft Environmental and Social Management Plan for the Project of Construction of a Third Lane on the Section Ripač-Vrtoče. 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.

After that, **Anis Bašić** presented the technical features of the project. He pointed out that the length of the section on which the third lane is planned is 5.2 km. Furthermore, he noted that the design of the third lane envisages the adding of the lane on the side of the slope. The calculation speed used when designing the project documentation is 60 km/h. Complete replacement of the pavement is foreseen. An open drainage system remains. The protection of slopes with nets is foreseen on certain spots along the section.

**Jasmina Ibrahimpašić:** What is the deadline for construction works?

**Anis Bašić:** The deadline for construction works is 6 month from the commencement date because of the big amount of asphalt needed (around 18000 tons)

**Jasmina Ibrahimpašić:** Is it possible for the City to get the scrapped asphalt?

**Anis Bašić:** Yes. Following the standard procedure after a formal request has been made.

**Nedžad Dervišević:** Why is the designed speed the same as the current speed (60 km/h)?

**Anis Bašić:** Given that the existing road route remains the same, it was not possible to increase the designed speed. However, the designed third lane significantly improves the road conditions because it allows heavy duty vehicles to drive on it which is particularly important during the winter period.

**Jasmina Ibrahimpašić:** Will there be a lot of blasting during the construction works?

**Anis Bašić:** Knowing the rock mass in the given location, I predict more excavations and less blasting. Blasting may occur in a smaller amount.

**Jasmina Ibrahimpašić:** In what stage is the preparation of Requests for Building Permits?

**Anis Bašić:** We are planning to start the tendering procedure by the end of this year, which means that the contract signing with the Contractor could be expected in early 2019. Until then, as things stand now, we should have the Building Permit.

**Zlatan Čizmić:** What is the amount of secured funds for the respective project?

**Anis Bašić:** 2,5 million EUR (without VAT).

**Zlatan Čizmić:** Is the City of Bihać financially responsible for the return of the loan?

**Selma Ljubijankić:** The Government of Federation of Bosnia and Herzegovina signed the Loan Agreement with the World Bank and the European Investment Bank.

**Anis Bašić:** PC Roads of FBH will be responsible for returning the loan.

**Jasmin Stambolija:** We can expect the commencement day to be in March or April, 2019?

**Anis Bašić:** Yes. It is planned for the procurement procedure to be finished in this year. Unfortunately the project has been significantly delayed by the misidentification of the plots which as result slowed down the expropriation process.

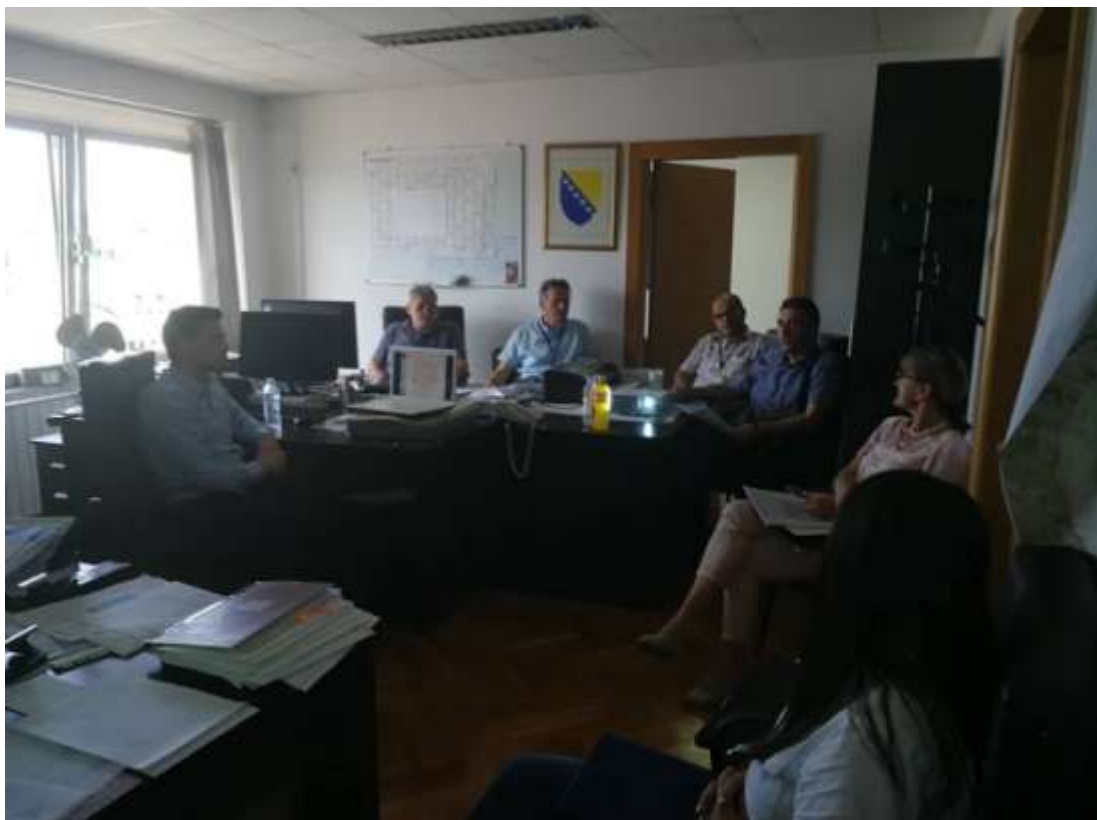
**Jasmina Ibrahimpašić:** Who developed the Expropriation Study?

**Sanja Pašalić:** The expropriation Study was developed by the firm Geofeld, on behalf of which I attend this Public Discussion. The first identification of the affected plots was obtained from the Cadastral Service of the City of Bihać. During the development of the Expropriation it was noticed that the road to Martin Brod has been identified, instead of the project site, Ripački Klanac. As a result of this the development of the Expropriation Study was slowed down.

**Anis Bašić:** There was also a problem because it was necessary to obtain again approvals from utility facilities. However, we managed to make an agreement with the respective institutions (as the project itself remained the same and formal mistake occurred) that we do not have to obtain again already obtained approvals.

The public consultation ended at 2 PM.

Photographs of participants in the Public Consultations in Bihać (business premises of Bihać  
City)







List of Participants in the Public Consultations



Javna rasprava o nacrtu Plana upravljanja okolišem i društvenim aspektima za projekat izgradnje trake za spora vozila na dionici Ripač – Vrtoče (M5), u Bihacu 19. Juna 2018.g.

LISTA SUDIONIKA / LIST OF PARTICIPANTS

R.b. No.	Ime i prezime / Name and surname	Institucija/Institution	Tel.	E-mail	Potpis/Signature
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9	Azra Đurđević	Geo FELD	037-229-677		
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11					
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