FEDERATION OF BOSNIA AND HERZEGOVINA
ROAD SECTOR MODERNIZATION PROJECT

DRAFT
Environmental and Social Managament Plan for the Project of Reconstruction of Crossroad of the Major Road M17 and South Junction to the City of Mostar

JP CESTE FEDERACIJE BIH
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ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN FOR THE PROJECT OF RECONSTRUCTION OF CROSSROAD OF THE MAJOR ROAD M17 AND SOUTH JUNCTION TO THE CITY OF MOSTAR (BLACK SPOT)

- DRAFT -

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LIST OF ABBREVIATIONS

BH - Bosnia and Herzegovina
CFD - Central Feedback Desk
CSOP - Construction Site Organization Plan
EIB - European Investment Bank
EIA - Environmental Impact Assessment
EMP - Environmental Monitoring Program
ESMF - Environmental Social Management Framework
ESMP - Environmental and Social Management Plan
EP - Environmental Permit
FBH - Federation of Bosnia and Herzegovina
FMoET - Federal Ministry of Environment and Tourism
HNC - Herzegovina-Neretva 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
PC Roads FBH - 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

1. INTRODUCTION

This Environmental and Social Management Plan (ESMP) was developed within the Environmental and Social Management Framework (ESMF) for FBH Road Sector Modernization Project, as one of the three site-specific examples.

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. Reconstruction of roads, this component includes:
   - 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.

Reconstruction of Crossroad of the Major road M17 and South junction to the City of Mostar (the Project) for which this ESMP is developed within the ESMF, is a 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

Reconstruction of Crossroad on the Major road M17 and Southern junction to the City of Mostar is characterized as a category B project according to the Operational Policies (OP) 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 an environmental assessment nor an environmental permit - whether federal or cantonal[1]. 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 an acceptable 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.

3 . LOCATION DESCRIPTION

The Project is situated at the intersection of the major road M17 and southern junction of the City of Mostar. The Crossroad is positioned nearby and on the important traffic ways for Mostar and BH. The major road M17 that passes through crossroad is part of the south European route E73 that connects Central Europe i.e. Hungary and eastern Croatia to BH and the Adriatic sea in the area of the port of Ploče, and it is one the most important roads in the country.

About 5 km south of the crossroad is the reserved area for the connecting loop for the planned motorway on the corridor Vc. Corridor Vc connects Kiev (Ukraine) with Adriatic sea through Lvov and Budapest (Hungary). It is consisted out of three parts and Vc is the part that follows European lane from Budapest (Hungary) to Ploče (Croatia), over Osijek (Croatia) and Sarajevo (BH). The longest part of the corridor Vc - 335 km passes through the territory

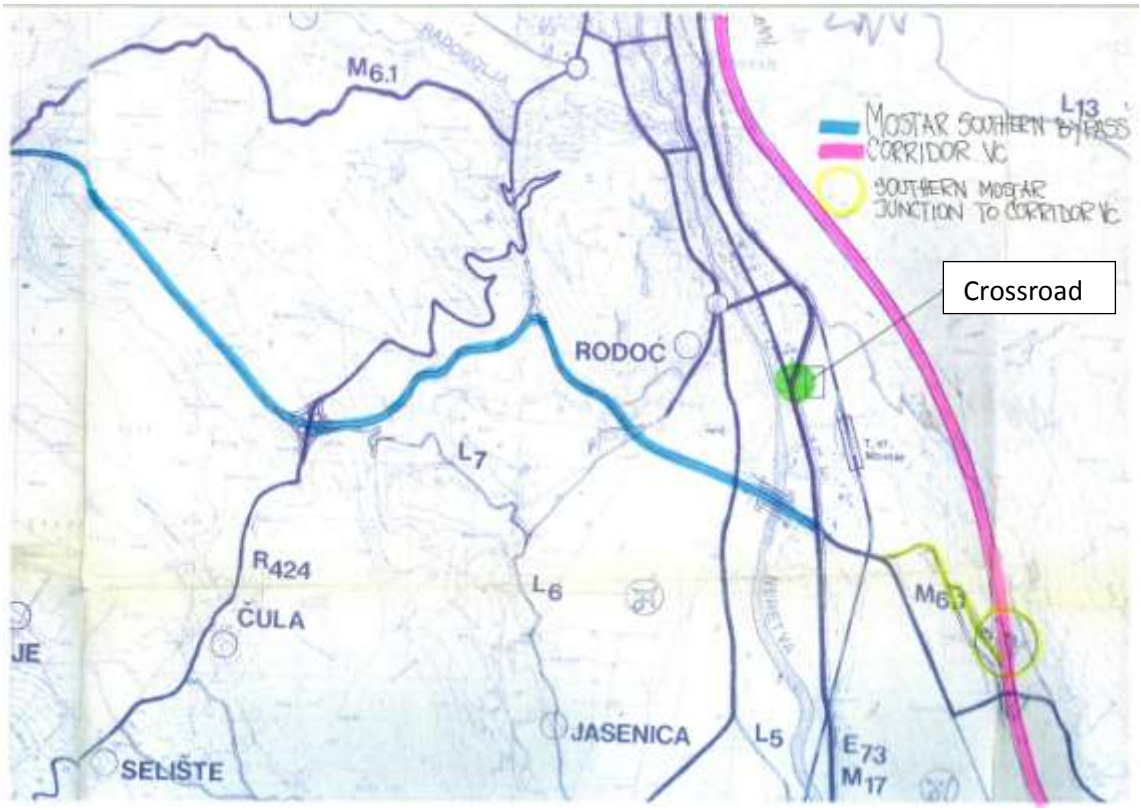
[1] *In FBH investments requiring EIA are identified by the Regulation on Plants and Facilities Subject to Obligatory Environmental Impact Assessment, and Facilities Which May be Constructed and Commissioned Only if Granted Environmental Permit (Official Gazette of FBH No. 19/04). In Herzegovina-Neretvian 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 HNC, No. 10/12). Reconstruction of a crossroad is not a subject to neither a Federal nor a Cantonal EP.*

of BH and it is laid on the most populated and most developed territory (over 50% of the BH population lives in 40 km range of the corridor Vc and earns over 60% GDP of the BH).

The other important planned road infrastructure in the area is the Mostar southern bypass. Connection of the bypass with major road M 17 is situated about 1,5 km south of the Project crossroad. Mostar southern bypass is in fact relocation of the major road M 6.1 Široki Brijeg - Mostar, and a bypass for the transit traffic going along the M6.1 road and the regional road R424 directly into the city and over city's local roads. Relocation of the major road was planned in the Spatial Plan of Mostar back in the year 1982 as shown in *Figure 1*. Main design is developed for the entire route and parts of the bypass are already built.

This planned road infrastructure in the surrounding area is of a major significance to the City of Mostar. This information, with regard to the Project crossroad, is relevant because it is expected that a part of the traffic from the city is going to be redirected to the Corridor Vc and Mostar southern by-pass through the planned crossroad. Additionally, a part of the traffic is going to be redirected from existing road infrastructure to the by-pass going further to the city through Project crossroad. Though it is still uncertain when this infrastructure is going to be realized.

Figure 1: Position of the crossroad on the excerpt map of Spatial Plan of Mostar from 1982.



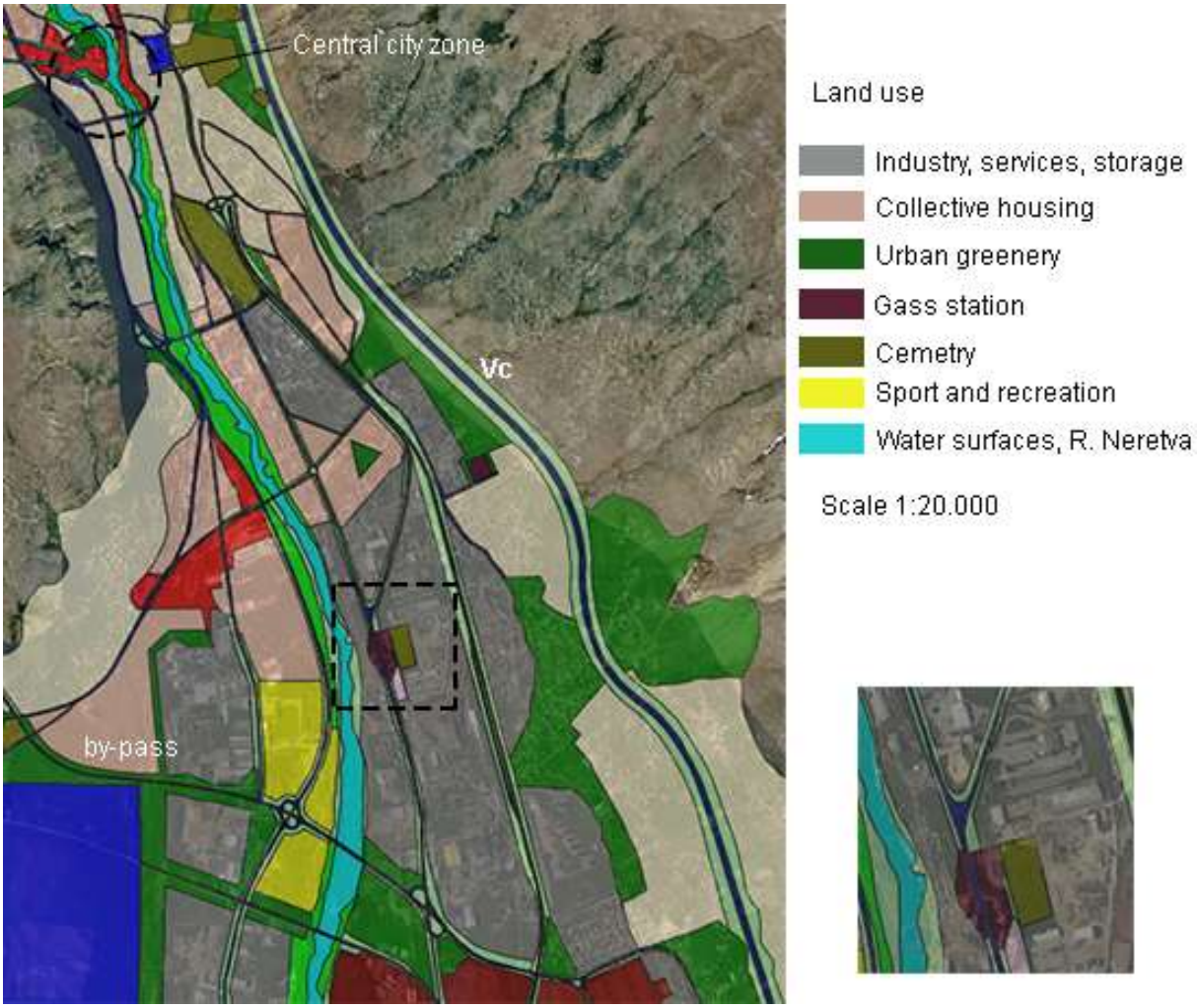
Source: Ecoplan, 2015

The crossroad is situated in the southern industrial zone of the city called „Bišće Polje", about 2 km south from the old city center. The industrial zone is situated between the natural barrier of the Neretva river and the railway Ploče-Mostar-Sarajevo, one of the most important railways in Bosnia and Herzegovina. There is no housing in this zone and the land use is mostly commercial/industrial. The key commercial activities in this zone are sales, storage and services.

In the direct vicinity of the Project crossroad, a part of the land is reserved as a city cemetery, but it is still not in use.

Urban neighborhoods are dominant in the wider area of Southern Mostar. Facilities situated in the southern part of town are mostly public and business oriented. Residential buildings, in the neighboring residential zones, mostly represent buildings and private houses, which are mainly ground floor, one-story and two-story houses. Majority of the facilities are located along the major road M17. Regarding public buildings, there is a hospital in the residential zone, 1 km away from the crossroad.

Figure 2: Excerpt from of Spatial Plan of Mostar from 1982, Land use



Source: Ecoplan, 2015

3.1. ROAD SAFETY AND TRAFFIC DATA

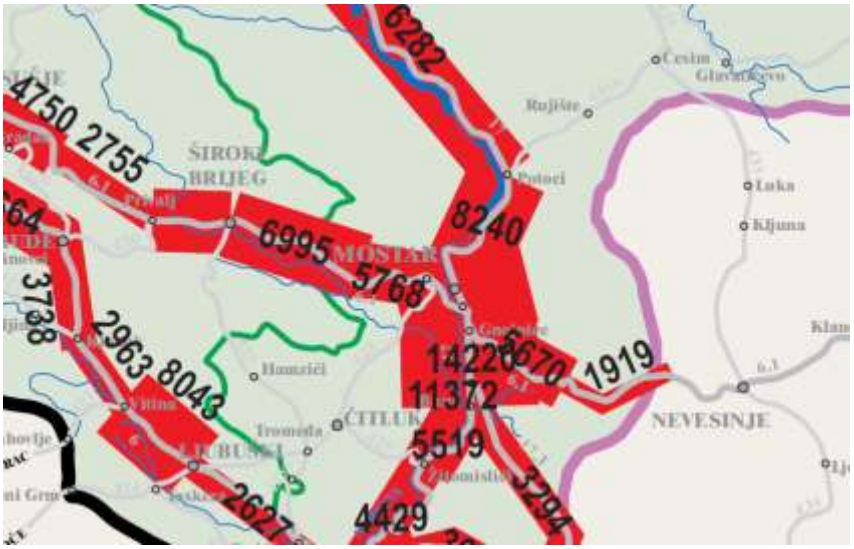
According to PC Roads FBH, in the period between 2009 and 2013, there were 6 road accidents with injuries and 10 with material damage registered at this crossroad.

The existing crossroad is sub-standard with separate turning lanes, which increased the width of the major road in this part, as well as the surface area of the crossroad. The sub-standard crossroad with very sharp angle of crossing does not enable a safe turn of heavy and passenger vehicles and poses a large safety risk for the vehicles joining the road and for

those driving along the major road. Even though pedestrians use this crossroad, there are no pedestrian lanes.

PC Roads FBH have installed automatic traffic counting along the major traffic network throughout FBH. Automatic traffic counting is being done since 2005 and last report[2] is published in 2015 with data for the previous year. Based on this information, the nearest relevant traffic count device is 624-Ortiješ, section Gnojnice-Buna (400 m south from the crossroad) and the data collected from the device shows that, in 2014, 14.220 vehicles were passing daily *(Figure 3)*.

Figure 3: The average amount of vehicles per day in the year 2014



Source: PC Roads Federation of BH

By request of PC Roads FBH, traffic prognosis for the same network were made by IPSA Institute Sarajevo in 2014[3] for the period 2013 to 2040. Analyze of the traffic flow was made for every year applying "equilibrium" procedure. For this particular section, the amount of predicted average daily number of vehicles is shown in *Table 1* below.

Table 1: Traffic prognosis for the M17, section Gnojnice - Buna

Major road	Section name	AADT									
		2016	2018	2020	2022	2023	2025	2030	2035	2037	2040
M 17	Mostar - Gnojnice	20944	21948	23311	24768	25673	27426	31722	35733	37217	39278

Source: PC Roads FBH, 2014

[2] *"Traffic count on major roads in Federation of BH in 2014", PC Roads Federation BH, Sarajevo 2015*

[3] *„Justification study for modernization of major roads in FBH programme", IPSA Institute Sarajevo, 2014*

4 . PROJECT DESCRIPTION

For this Project, a Main design for the Project of Reconstruction of the Crossroad M17 and South Junction to the City of Mostar was prepared by the company Design&QC Ltd, situated in Sarajevo, and contracted by PC Roads FBH in 2013. Project task included finding a solution to the roundabout that would ensure optimal traffic flows and their capacity, and enhance the safety of road users.

The type of the designed roundabout has an external radius R=40m and internal radius r=13,5m. The designed width of the traffic lane is 6,5m with an additional lane for heavy vehicles, 3m in width. The minimum entry radius is 15m, and exit radius is 40m. A pedestrian lane,2m wide, is also designed, in direction Mostar center – Čapljina, with a protective green belt, 1,0 m wide.

Fitting into the exiting major road dictated the slope at the beginning, while the existing vertical alignment changed going towards the roundabout due to a better fitting into the terrain. Longitudinal slope of the roundabout is 0,5% for the purpose of better drainage and with crossfall towards the external edge at 2,5%.

Drainage is solved with the closed drainage system made of surface water gullies placed on the outside of driveway, collector pipes and purifier. Surface water is collected with drainage gullies and lead by collectors to purifier. After the treatment the drainage water is released into the natural recipient, the river Neretva.

Figure 4: Disposition and Cross Section of the designed roundabout

Source: Main Design "Project of Reconstruction of the Crossroad M17 and South Junction to the City of Mostar", 2013

5 . BASELINE OF PARTICULAR INTEREST

5.1. GEOGRAPHIC CONDITIONS

This crossroad is located in the valley of the Neretva river, in the flat part of Mostar Field, surrounded by hills.

Geological features of this location are characterized by thick layers of mainly alluvial gravel and at its edges by delluvial-colluvial deposits. Alluvial gravels of Mostar Field lie mostly on neogene marlstones. Their thickness depends of the configuration of paleorelief and ranges from 10 to 30 m. Geological features of this section are characterized by a package of well-gradated and compacted gravel. Gravels in deeper layers and particularly in the parts closer to the Neretva River, where the Project is situated, are partly joined conglomerates, which create stable sub-soils.

The location is situated on layers of alluvial gravel, meaning that there is high water-permeability that must be taken into account during the construction works.

Figure 5: Topographical Map of Wider Area with the Project Location

Source: Ecoplan, 2015

5.2. CLIMATE FEATURES

Physical-chemical features (bare karst with expressive topography) and proximity to the Adriatic Sea have significant impact on climatic characteristic of the area through which the bypass passes. The area of the City of Mostar is located on the periphery of the Mediterranean climatic zone.

The climate is sub Mediterranean with relatively high winter temperatures and small number of days with frost, mild winters and scorching, dry and sunny summers. Winters are predominantly moist, and summers moderately dry and hot.

Precipitation regime of the area is also under the Mediterranean influence with very irregular annual distribution of precipitation. Most precipitation falls in the colder part of the year, and some occur in the warmer period of the year.

5.3. WATER AND WATER QUALITY

Neretva River is the closest surface water flow, approximately 150 m of air distance from the Project location. Waters of the wider area, including river Neretva, belong to the Adriatic Sea watershed. The Neretva River is the longest and biggest river in the Eastern Adriatic Sea drainage basin and the most important river in Herzegovina. Its source is located at the height of 1.095 meters below mountains Zelengora and Lebršnik in BH and it flows in the length of 203 km through this country, while the last 22 km flow through Croatia. From its source to the mouth, Neretva flows from southeast to northwest, creating the northern border of Herzegovina this way. In its upper course Neretva is a canyon river, all the way to Čapljina i.e. including the Project area.

The Neretva River is threatened by human activities, such as industry, agriculture, non-sanitary waste disposal and discharging untreated wastewaters from urban areas (Konjic, Mostar, Čapljina and smaller villages along the River bank).

10 km south from the Project location in Baćevići, regular measurement of the quality of the Neretva river is performed by The Adriatic Sea Watershed Agency[4]. According to the latest results of water monitoring, Neretvian water at the monitoring station Baćevići is classified as Class II, which according to the Ordinance[5] means that those are the waters which in their natural state can be used for citizens' bathing and recreation, for water sports, fish farming, or which can be used for drinking water and in food industry, with ordinary methods of processing.

5.4. AIR QUALITY

Air quality monitoring is carried out at the site of the Hygiene Institute in Mostar. Following pollutants are measured at the monitoring station at the Hygiene Institute address[6]:

- Sulphur dioxide (SO_2),
- Nitrogen dioxide (NO_2) and
- Particulate matter.

The monitoring has been carried out continuously since 1998, and the following can be concluded as a result thereof:

[4] *http://www.jadran.ba/*

[5] *Statue on the Classification of water and water of the coastal sea of Yugoslavia within borders of Social Federal Republic of Yugoslavia (Official Gazette of SFRY no. 18/80)*

[6] *Street Marsal Tito No. 9., Mostar, 3 km north from the Project crossroad*

- Sulphur dioxide (SO_2) at transitions spring-summer and summer-autumn does not appear on many days. During summer, it has approximately constant values and moves within limits 0,038-0,068 mg/m^3. During winter, it varies within limits from 0,054 to 0,146 mg/m^3. It can be concluded for sulphur dioxide (SO_2) that it does not exceed maximum allowed values during the year.
- Values of nitrogen dioxide (NO_2) are constant in summer period and are within limits 0,028-0,046 mg/m^3, and in winter period vary within limits 0,032-0,062 mg/m^3. For the nitrogen dioxide (NO_2) it can be concluded that it exceeds average values only during the winter period (0,060 mg/m^3).

Considering that large number of industrial polluters are out of function, which directly reflects on the air quality, dominant role in air pollution in the City of Mostar is taken over by traffic.

Air quality largely depends on distance from the source of pollution and airflow, as well as on terrain configuration. The configuration is connected with airflow and changes its direction and speed, but also affects the speed of air exchange. In closed valleys or canyons, it can come to a slower air exchange, so polluted air cumulates, while on slopes of the hills or in flatland air exchange is faster, so there is also less pollution. Due to strong northern winds that blow in Mostar during the whole year it is difficult for pollutants to concentrate for a longer period.

5.5. NOISE LEVELS

There was no monitoring of noise levels near the crossroad, 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 subject crossroad, we can find mostly facilities for business purposes (stores) which are exposed to traffic noise and according to the Law on Noise Protection, they fall under the fifth zone, where allowed noise levels are 65 dBA during day and 60 sBA at night.

However, there is one of city's hospitals located at about 1000 m from the Project site, (first zone of noise protection) and the closest residential zone (third zone of noise protection) is about 500 m further. It is not expected that the contraction works will have impacts on these residential areas neither the city hospital.

5.6. LAND AND LAND USE

As mentioned above, the crossroad is situated in a highly urbanized industrial zone with a lot of asphalt and concrete surfaces and occasional undeveloped areas of sparsely distributed vegetation. No agricultural land or land of high importance is located in close vicinity of the site.

5.7. FLORA AND FAUNA

The entire wider and narrower area of the planned project was greatly changed and the balance of natural ecosystems was interrupted by anthropogenic impacts, i.e. the entire area

is urbanized. In the closer Project area there is neither flora nor fauna, neither there is urban greenery which must be taken into account. It is necessary to pay attention during construction works on spilling hazardous matter i.e. possibility that they could reach the Neretva river and its wildlife.

5.8. CULTURAL-HISTORICAL AND NATURAL HERITAGE

There are no recorded archeological findings in the observed area. There are also no protected cultural-historical or natural monuments in the vicinity. The Neretva River is located nearby (cc 150 m from the crossroad), but the intervention will take place outside of the protection zone of the Neretva River. Still the construction works could have indirect impacts on the river.

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

6.1. PRE-CONSTRUCTION IMPACTS

Socio-economic Impacts

Pre-Construction land acquisition: It is expected that it will be necessary to temporarily occupy several privately owned land plots for lodging machines and disposal of materials. The temporary land acquisition shall be carried put in accordance with the Law on Expropriation.

6.2. IMPACTS DURING CONSTRUCTION

Impact on Air Quality

Exhaust gases - The machinery that is used during the construction and delays, i.e. traffic standstills on the road due to works on reconstruction of crossroad will lead to an increased emission of such gasses as SO_2, CO_2, CO, NO_X and Pb.

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

Impact on Noise Level and Vibrations

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

Impact on Surface Water Quality

Creation of additional water demand - The workers and the construction works will create an increased demand for water in addition to the existing population demand in surrounding area. Water will be mostly used in the creation of aggregates for construction works and for wetting the surfaces, as well for daily water demand of workers.

Possible contamination of water – may occur due to general construction activities and malpractice including inappropriate extraction of resource material, handling of hazardous substances (i.e. asphalt, chemicals and paint), inadequate waste handling, liquid and solid, equipment damage which may lead to leakage of lubricants and fuel (increased blurring, input of fats and oils) etc.

Impact on Soil Quality

- Soil compaction due to heavy 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 Biological and Natural Resources

- Pollution of the Neretva River and soil with hazardous substances (fuel and oils in case of spills) can harm biodiversity of the river and its surrounding area.

Impact on Protected areas

The observed project is not situated in any of the planned protected areas. The closest protected area is the protection belt of watercourse Neretva river. Possible temporary adverse impacts on the protected areas during construction are those referred to water pollution.

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 road section - increased traffic flow, leading to congestion and obstruction is likely to be experienced on major road (M17) during the construction.

Taking into consideration that the crossroad is in the intersection of the major roads (M 17 and the southern entrance into the Mostar city center), there is a considerable amount of traffic in the area. Construction works are expected to decrease the traffic flow.

Trenches are likely to be made during implementation of construction activities, including earthworks and temporary storage of construction material.

Socio-Economic Impacts

Prohibition of land use and damage to private property: It is expected that it will be necessary to temporarily occupy several privately owned land plots for lodging machines and disposal of materials. Construction activities may cause damage to land plots, fences and railings due to disposal of construction waste and heavy machinery parks.

Reconstruction also may lead to interruption of 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.

Access restrictions: Impacts related to road access restrictions are expected to be temporary and are associated with limited access due to heavy machinery parks and disposal of construction waste.

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.

Impact on living conditions of local communities

Following adverse impacts during construction are expected:

- Traffic disruptions,
- Noise increase,
- Inappropriate disposal of construction waste,
- Disruptions to water and electricity supply, telephone and Internet connections, waste collection, regular public transport, delivery of mail,
- Potential hazards form the proximity of construction activities.

6.3. IMPACTS DURING OPERATION AND MAINTENANCE

Since this crossroad is an already existing object no new negative environmental impacts, nor detoriation of existing negative impacts, during operation and maintenance are expected. On the contrary, an improvement of the environmental and social aspects is expected.

Socio-Economic Impacts

Impact on traffic: According to the Traffic prognosis and having in mind the importance of the project as the connection point to the corridor Vc, an increase to the number of vehicles is expected during the operational phase.

6.4. POSITIVE IMPACTS

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

- More efficient and safer traffic system: by decreasing the time of travelling, lower number of traffic accidents, lower costs of maintenance and management;
- Improvement of transport system and accessibility;
- Developed road structure with improved access to and out of the project area;
- Benefits to vehicle users and users of public transportation due to improved traffic connections and capacity;
- Lowering traffic congestions by increasing traffic flow;
- Improved pedestrian safety due to construction of separate pedestrian lane along the crossroad;
- Increased travel speed and travel quality;
- Lower adverse impact during operation on river Neretva due to the construction of the closed drainage system and installment of the grease separator;
- Direct employment and service opportunities: according to the Public Procurement Act in BH, the tender will be of international character and for this reason it will be difficult to predict where the contractor will come from;

nevertheless, the practice in construction in BH suggests that hiring local contractors will be expected.

6.5. ENHANCEMENT MEASURES

Table 2: Enhancement Measures

Impact	Enhancement Measures	Cost Assessment (US$)		Institutional Responsibility	
		Operative	Implementation	Operative	Implementation
▪ Traffic	▪ Better traffic flow due to increasing travel speed; ▪ Reduction in time travel and cost by enhancing road surface and building a roundabout; ▪ Improved road and travel safety by improving intersection of city entrance with major road M 17; ▪ Increased pedestrian safety by designing separate lane for pedestrians.	-	-	Contractor	PC Roads FBH
▪ Socio-economic	▪ New job and business opportunities for local construction workers and firms; ▪ Improvement of connections of the city of Mostar with commercial and trading centers such as Sarajevo and port Ploče;	-	-	Contractor	PC Roads FBH
▪ Water	▪ Improvement of the protection of the nearby river Neretva due to construction of new road surface drainage system with a grease separator;	Included in construction works	Included in supervision	Contractor	PC Roads FBH
▪ Visual aesthetic and landscape	▪ Improving visual aspects of the surrounding area with seeding, planting and re-vegetation with species that can tolerate the roadside environment;	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 5*. 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.

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[7]:

(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) Elaborate on environmental protection during construction [that shall include among other a detailed Waste Management Plan (WMP)].

Additional requirement 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).

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. The RPF also serves as a guide for preparation of site-specific Resettlement Action Plans (RAPs). In this project at this moment, no land acquisition is expected.

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

7.1. MITIGATION MEASURES IN PRE-CONSTRUCTION PHASE

7.1.1. Contractor Management

PC Roads FBH will ensure that the construction intervention 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 forming part of the tendering documents 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.

The following contractual conditions shall apply to the Contractor 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 shall 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 of any complaints or grievances received and of any corrective actions identified and implemented. The Contractor shall inform the complainant of the Grievance redress mechanism.

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;
- Be responsible for all activities undertaken by his sub-contractors;
- Maintain regular effective two-way communication with all workers, sharing information and assisting in dealing with any unforeseen problems promptly.

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 Contract and as such it must be addressed to the Contractor and carried out as required.

7.2. MITIGATION MEASURES DURING 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 of FBH.

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 form 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.

7.2.1.1. Construction Site Organization

- The Contractor shall be responsible for ensuring that order, discipline and professional responsibility of all employees on the construction sites are maintained at all times. Work must be restricted exclusively to the construction site, and damage to private property, land and crops must be avoided.
- The timing of construction activities should, if possible, be planned at the time of the year when the advantages of dry soil conditions can be utilized, i.e. when compacting and degradation through use is at minimum level. Additionally, it is recommended that machines only operate in the period 07-20 h in all sections of the route whose distance from nearest residential houses is less than 60 m.
- The Contractor is responsible for establishing temporary disposal sites for construction materials, area for washing and cleaning machinery (on site or off-site) and vehicles in accordance with CSOP. Temporary disposal sites for excavation material (topsoil) are to be reduced to maximum 2 m height, in order to prevent compaction caused by weight of the soil.
- The Contractor is responsible for ensuring that all construction equipment is licensed and approved in accordance with local regulations, and certified in compliance with EU standards. This includes use of modern machines and vehicles that fulfill environmental

standards in terms of emission of harmful gases (complete combustion) and those that have enclosed sources of noise (engines, exhaust system).

- The Contractor is responsible for ensuring that machines and vehicles parking places and worker's residence containers (if used during the course of the Project implementation) do not affect the watercourse.
- The Contractor is obliged to reinstate the construction area in accordance with the planned land use. and to restore species preserved in topsoil and supplement them by adequate material if needed.

7.2.1.2. Raw Material Sourcing and Supply

The Contractor shall identify borrow site in collaboration with PC Roads FBH.

The Contractor should assess borrow sites and quarry locations before use to ensure avoidance of impacts on surface drainage patterns.

- Borrow material can originate from:
    - Licensed borrow sites and quarries;
    - Material acquired during excavations for other projects;
- The Contractor shall rehabilitate the borrow site after the completion of works, as follows:
    - Stabilize the slopes of the borrow site by compacting the soil and by using the cover layer of soil;
- Return the stocks of cover to the borrow site and stabilize all work areas by new vegetation, by using appropriate and similar plants as in the surrounding area. The Contractor shall rehabilitate borrow pits and quarries as soon as possible after use, before the end of the contract i.e. before final payment and will landscape them to best fit into the existing environment.
- The Contractor is responsible for buying construction material from suppliers that operate in accordance with valid operation permits, environmental permits and national and EU environmental standards.

7.2.1.3. Management of Hazardeous Materials and Substances

Materials, which are used for the reconstruction of the crossroad, are potential sources of pollution. Inappropriate storage and handling of oils, lubricants, chemicals and hazardous substances on construction site and potential spills of those substances may harm the environment or health of employees working on road rehabilitation. In order to mitigate that, the Contractor is obliged to:

- Prepare the procedure of spills control and submit the plan to PC Roads FBH for approval.
- Train relevant construction works staff for handling fuels and procedure of spills control.

- Storage the hazardous substances in fenced areas in sealed plastic foil far from watercourse.
- Allow fueling only inside the fenced area.
- Ensure absorbing and retaining material (for example, absorbing covering), where the staff will be appropriately trained regarding safe handling practices, use and storage.
- Provide protective clothes, safety booths, helmets, masks, gloves, glasses, staff for promoting construction works, material appropriate for use.
- Check whether all containers, drums and cisterns used at storage are in good condition and with a designation of expiry date. Each container, tank or drum, which is indented, cracked or rusty may cause leakage. The leakage needs to be checked regularly in order to identify potential problems in time.
- Containers and drums must be placed at temporary storage in clearly designated areas where they will not be ran over by vehicles or heavy machinery. Storage must be on a slope or with drainage for safe collection of fluids in case of spill.
- Take all precaution measures on handling and storing fuels and lubricants, while avoiding environmental pollution.
- Avoid the use of material with a higher possibility of pollution, by replacing them with more eco-friendly materials.
- Ensure special storage area for fuels/oils and/or other hazardous substances used during construction.
- All storage areas should be equipped with an appropriate spill kit.
- The staff that uses the hazardous material should be appropriately trained regarding safe handling practices and emergency response procedure.
- All workers need to be provided with appropriate personal protective equipment from harmful effects of hazardous substances.
- Ensure that hazardous waste i.e. waste oils are managed and disposed of by specialized licensed operators for hazardous waste management.
- Identify and register hazardous substances by marking in details place and amount of hazardous substances, including storage, use and disposal.
- Where absorbents, (e.g. sand, oil pads or booms) have been used to absorb a leak or contain a spill, the contaminated waste absorbent is to be disposed of as hazardous waste on a special area inside the construction site before the licensed operator takes over the waste and dispose it permanently.
- Train the staff and implement a safe work practice for minimizing the risk of spill.
- Establish the cause of pollution if it appears and control the area of pollution. The impact can be controlled by isolating the source of pollution or by implementing control of the affected area.
- Rehabilitate contaminated soil by using the most appropriate available method.

7.2.1.4. Waste Management

Following measures shall be implemented:

- Waste generation, where practicable, will be minimized through the adoption of efficient designs, reduction of materials required, construction method selections and reuse and recycling where practicable. The Contractor is responsible for ensuring that all waste is disposed of by licensed operators for waste management at appropriate waste management facilities.

Due to inappropriate waste management and construction waste pollution of soil and water is possible (the Neretva river). Therefore, the Contractor is obliged to:

- Create a Waste Management Plan (WMP) for various types of waste (for example, usable waste, flammable waste, construction waste, food waste ect.).
- Organize waste disposal in eco-friendly manner, which was created during works on road rehabilitation. That will include consideration of nature and landfill, in order to reduce the environmental impact to the lowest level possible.
- Reduce creation of waste by the following approach: reduce, recycle, reuse.
- Wherever possible separate the entire waste and reuse or recycle it.
- Prohibit waste incineration.
- Collection and transport of non-hazardous waste in all approved landfills. Vehicles for transport of solid waste must be covered with tarpaulin or nets to prevent dissipation of waste on the road.
- Provide containers on construction site.
- To request from supplies fewer packaging material, wherever possible.
- Maintain construction site clean, tidy and safe, and provide and maintain appropriate facilities as temporary storage of the entire waste prior to transport and final disposal.
- Collect chemical waste in 200 liter drums (or similar sealed container), appropriately labeled for safe transport to an approved chemical waste depot.
- Store, transport and handle all chemicals avoiding potential environmental pollution.
- Store all hazardous waste appropriately in fenced areas away from watercourses.
- Collect hydrocarbon waste, including lube oils, for safe transport off-site for reuse.
- Ensure proper collection and disposal of solid waste within the construction camp.
- Locate the garbage pit/waste disposals item at least 500 m away from the residential areas so that people are not disturbed with the odor likely to be produced from anaerobic decomposition of waste at the waste dumping places. Enclose the waste dumping place by fencing and tree plantation to prevent children to enter and play.
- Do not establish site-specific landfill sites. All solid waste will be collected and removed from the work camps and disposed in approval waste disposal sites.

7.2.1.5. Road Transport and Road Traffic Management

Dust generation on construction sites, stocks of materials and access roads poses disturbance to the surroundings and may be harmful to health. In order to prevent this adverse impact, the Contractor shall:

- Prevent dust emissions by transporting asphalt, gravel, stone, earth and other material in covered trucks. The speed of transport vehicles should not exceed 30 km/h and 20 km/h on unpaved sections.
- Define control measures for dust generated through handling of equipment and/or during rehabilitation works. The Contractor must submit the plan in which the above proposed paths for transport of material have been listed (Technological scheme and TMP), and is also required to provide statements about proposed method of dust control in places where transport through settlements may not be avoided.
- To water the stocks of material, access roads and bare soil in order to reduce the possibility of disturbing the surrounding due to dust. Increase frequency of irrigation during high risk periods of time (for example, high winds). Stock materials such as gravel and sand must be covered and closed in order to prevent dissipation by wind.
- Decrease range and period of exposure of bare surfaces.
- Postpone the activities of earthworks or cleaning of vegetation if it is necessary for avoidance of the periods of high wind or if dust is seen outside the construction site.
- Rehabilitate the disrupted area as soon as possible by planting greenery or grass.
- Establish appropriate areas for storage, mixing and load of construction material in the way that dispersion of dust is prevented due to such operations.

In order to ensure proper traffic management, the Contractor is obliged to do as follows:

- To create TMP as part of CSOP in accordance with ESMP.
- Implement adequate traffic control measures, in accordance with national legislation and such measures must first be approved by the Supervision Engineer.
- Traffic safety management measures need to include temporary lighting and adequate signalization during excavation and rehabilitation/construction works.
- Appoint permanent staff that will be engaged on traffic safety issues, and would be responsible for implementation of traffic safety measures and implementation of traffic measures as prescribed by national legislation, which would include: (i) inspection of the condition and position of equipment for traffic control in use; (ii) design review – part related to traffic control equipment necessary to provide safe and efficient traffic flow; (iii) correction of all traffic deficiencies where applicable; (iv) inspection of work areas, handling of equipment and storage, handling of material and storage related to traffic safety.

7.2.1.6. Environmental Impacts Management

Air Quality, Noise Levels and Vibrations

The contractor shall:

- Ensure that high quality fossil fuels (with low percentage of sulphur and lead) are used for construction machinery and equipment;
- The Contractor needs to ensure that all construction machines are operated during normal working hours (07 - 20 h);
- Avoid unnecessary operation of construction machinery and vehicles;
- Maintain all vehicles in order to keep them in good working order in accordance with manufactures maintenance procedures
- Make sure all drivers comply with the traffic codes concerning maximum speed limit, driving hours, etc.
- Organize the loading and unloading of trucks, and handling operations for the purpose of minimizing construction noise on the work site,
- Appropriately site all noise generating activities to avoid noise pollution to local residents,
- Use the quietest available plant and equipment,
- Modify equipment to reduce noise (for example, noise control kits),
- Install acoustic enclosures around generators to reduce noise levels,
- Fit high efficiency mufflers to appropriate construction equipment,
- Avoid the unnecessary use of alarms, horns and sirens,
- Notify adjacent landholders prior any typical noise events outside of daylight hours,
- Educate the operators of construction equipment on potential noise problems and the techniques to minimize noise emissions,
- Employ best available work practices on-site to minimize occupational noise levels,
- Install temporary noise control barriers where appropriate,
- Plan activities on site and deliveries to and from site to minimize impact,
- Monitor and analyze noise and vibration results and adjust road rehabilitation practices as required,
- Avoid undertaking the noisiest activities, where possible, when working at night near residential areas.

Surface Water Quality

- The Contractor will ensure that maintenance, filling and cleaning of machines must be carried out off the site and outside of the area with surface water.
- Wastewater from workers toilets should not be discharged on land or in water resources.

During reconstruction of the crossroad, quality of surface area might deteriorate due to activities on construction sites. Works on reconstruction of the crossroad may lead to an increased outflow rate of residue and polluted sediments into surface water and thus affect fish habitats and the rest of aquaculture. Therefore, the Contractor shall:

- Install temporary drainage works (channels and bunds) required for sediment and erosion control and around storage areas for road rehabilitation materials,
- Install temporary sediment basins, where appropriate, to capture sediment-laden run-off from site,
- Divert runoff from undisturbed areas around the construction site,
- Place stockpile materials away from drainage lines,
- Prevent all solid and liquid waste entering waterways by collecting solid waste, oils, chemicals, bitumen spray waste and wastewaters from brick, concrete and asphalt cutting where possible and transport them an approved waste disposal site or recycling depot.
- Wash out ready-mix concrete agitators and concrete handling equipment at washing facilities off site or into approved fenced areas on site.
- Ensure that tires of construction vehicles are cleaned in the washing bay (constructed at the entrance of the construction site) to remove the mud from the wheels. This should be done in every exit of each vehicle to ensure the local roads are kept clean.
- Sediment-laden run-off prior to the final disposal should be directed so as to leak into the deeper layer of soil or discharge it into lagoon.
- Restore and protect clean areas as soon as possible.
- Dust from storage materials will increase residue and contaminated deposits on surface water bodies. In order to reduce pollution, the Contractor shall perform as follows:
    - Ensure that the roads used by construction vehicles are regularly cleaned, for the purpose of removing residue;
    - To water the stocks of material, access roads and bare soil in order to reduce the possibility of disturbing the surrounding due to dust. To increase frequency of irrigation during high risk periods of time (for example, high winds).

In order to mitigate spillage of hazardous and poisonous chemicals polluting the soil, the Contractor shall:

- Strictly implement the WMP;
- Construct appropriate contents for drainage of pollution for all areas of fuel storage;
- Establish and maintain hazardous substances by marking place and amount of harmful substances in detail, including storage, usage and disposal;
- Train the staff and implement a safe work practice to minimize the risk of spill;

- Determine the cause of pollution if it appears, and control the area of pollution. The impact can be controlled be isolating the resource or by implementing control of affected terrain.
- Rehabilitate contaminated soil by using the most appropriate available method.

Land use

- The Contractor shall ensure that construction-related activities are performed strictly and in enclosed construction area;
- The Contractor shall ensure that the natural conditions of the surroundings of the construction site are reinstated after completion of works.

Biological and Ecological Sources

- The Contractor shall ensure that removal of vegetation is minimally limited to the marked construction area.

7.2.2. Health and Safety

Works on the reconstruction may pose health and safety risks for construction workers and visitors to the construction site, which may cause severe injuries or death. Population near the construction site and construction workers will be exposed to a large number of: biophysical health risk factors, (e.g. noise, dust, chemicals, construction material, solid waste, waste water, 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 in addition to complying with the national standards of the FBH[8],
- 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.

[8] *- 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

- Appoint an environment, health and safety manager to look after the health and safety of the workers.
- The contractor should provide portable toilets at the construction sites. 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.

7.2.2.1. 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 of 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.

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 of industry;
- 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 in city urban area and alongside roads.

7.2.3. Traffic and Road safety

The Contractor shall ensure traffic and road safety during performance of works.

The Contractor shall develop the CSOP which includes preparation and organization of construction site during and after construction, including roads on the construction site ie. 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 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 crossroad, 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 crossroad, on roads which will be used during reconstruction works, which will clearly indicate the following data in a local language:
    - Location: station label and settlement name
    - Duration of construction
    - Period of the proposed bypass/alternative road
    - Map of the proposed bypass

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

TMP should include details about the following:

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

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

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

7.2.4. Construction Site Safety

The Contractor shall secure the construction site. The area should be fences in order to prevent entry of unauthorized persons. 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

There will be smaller acquisition of state-owned land for the needs of the Project and there will be no involuntary resettlement nor economic displacement.

The Contractor shall comply CSOP with the City and use protection zones of the roads for disposal of construction material and material used for maintenance purposes. In case that occasional use of other land cannot be avoided, compensation will be provided to the affected owner/beneficiary in accordance with provisions determined in the RPF. Land acquisition can only proceed when there's a site-specific Resettlement Action Plan (RAP) in place for this Project. If the Contractor can negotiate voluntary temporary land use, no RAP is needed.

7.3. MITIGATION MEASURES IN OPERATION PHASE

It is required from PC Roads FBH to undertake regular maintenance measures[9], such as:

- Regular inspection of road integrity and constant maintenance of roads;
- Regular maintenance of vegetation along the crossroad and road, ensuring appropriate visibility and passability of roads;
- Cleaning of roads (removal of waste, debris caused by erosion, snow, etc.) and road signalization and lighting equipment;
- Ensuring all absorption substances used for absorption of spills on roads are treated as hazardous waste and handed over to authorized operators of hazardous waste;
- Regular cleanup of the grease separator;Regular maintainance of the road safety equipment and signage

PC Roads FBH shall hire a Contractor for maintenance works.

[9] *In accordance with the Regulation on Maintenance of Public Roads (Official Gazette of the FBH no.* 48/03).

7.4. SUMMARY OF MITIGATION MEASURES

Table 3: Environmental and Social Impacts Management Plan

Impact/Problem	Mitigation Measures	Cost Assessment (US$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
PRE-CONSTRUCTION PHASE						
▪ Restricted access.	▪ Development of the TMP.	Included in the bid	Internal resources	Contractor	PC Roads FBH	
▪ Impacts on living conditions.	▪ Informing the local communities on the extent of works and duration prior to the commencement of construction works.	Internal resources	Internal resources	PC Roads FBH	PC Roads FBH	
▪ Compliance with national legislation.	▪ Obtaining all necessary permits for Project implementation.	Internal resources	Internal resources	PC Roads FBH + Project designer	Competent body for issuing the permit	
▪ Restrictions on land use and damages on private property and businesses.	▪ Avoid private properties where possible; ▪ The Contractor will organization the construction site in collaboration and agreement with City of Mostar; ▪ In case occasional land use cannot be avoided, compensation will be provided to affected owners/users (application of RPF and RAP), as well as compensation for loss of the possibility to continue to use land and businesses as intended.	Internal resources	Internal resources	Contractor + PC Roads FBH	PC Roads FBH	
▪ Job creation and impacts on local business.	▪ 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.	Internal resources	Internal resources	PC Roads FBH	Contractor + PC Roads FBH	Applicable if the Contractor needs new workforce.

Impact/Problem	Mitigation Measures	Cost Assessment (US$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
CONSTRUCTION PHASE						
▪ Access restriction.	▪ Implementation of the provisions on providing timely information to citizens about upcoming construction works, expected duration of the works, alternative routes, etc.; ▪ Ensuring safe and continuous access to all adjacent office facilities, shops and residences during construction; ▪ Implementation of TMP.	Included in construction works	Included in supervision	Contractor	Supervisory body*	Supervisory body is appointed by investor PC Roads FBH
▪ Impacts on living conditions of local community;	▪ Providing timely information to the citizens on any type of disruption and inconvenience; ▪ Implementation of TMP; ▪ Implementation of CSOP; ▪ Implementation of ESMP provisions.	Included in construction works	Included in supervision	PC Roads FBH + Contractor	Supervisory body*	
▪ Impacts on local traffic: ▪ increase of local traffic, including heavy machinery and trucks; ▪ closing one of the traffic lanes for construction purposes causing traffic delays and limited access.	▪ Implementation of TMP; ▪ Introduction of appropriate signalization and warning signs; ▪ Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours; ▪ Traffic management system and staff training, especially for site access and near-site heavy traffic; ▪ Provision of safe passages and crossings for pedestrians where traffic interferes.	Included in construction works	Included in supervision	Contractor	Supervisory body*	In collaboration with the local Ministry of the Interior

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

Impact/Problem	Mitigation Measures	Cost Assessment (US$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
▪ Temporary occupation of privately owned land plots for the purpose of construction of access roads and placement of staff, machines and material.	▪ Avoidance of temporary occupation of privately owned plots; ▪ Implementation of RPF and RAP provisions.	Internal resources	Internal resources	PC Roads FBH	PC Roads FBH*	
▪ Air emissions: - exhaust gasses; - dust generation.	▪ High quality fossil fuels (with low percentage of sulphur and lead) need to be used for construction machinery and equipment; ▪ All machines and vehicles to be used in construction/ reconstruction/ rehabilitation activities must have use permit; ▪ Vehicles need to be regularly maintained ; ▪ Equipment with installed filters to reduce soot emission needs to be used; ▪ When not in use the equipment and machinery need to be shut down; ▪ Maximum speed of the vehicle on unpaved roads should be restricted to 20 km/h; ▪ Moistening/ wetting the site to prevent dust occurrence (in areas with dry soils or where activities generate dust); ▪ Sand and gravel materials need to be transported in covered trucks.	Included in construction works	Included in supervision	Contractor	Supervisory body*	
▪ Increased level of noise and vibration:	▪ Restriction of works to period of day only (period of day: 06:00 to 22:00, period of night: 22:00-06:00)	Included in construction	Included in supervision	Contractor	Supervisory body*	

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

Impact/Problem	Mitigation Measures	Cost Assessment (US$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
- noise emission and noise disturbance; - vibration.	▪ In the case of noise complaints by local residents, simultaneous use of machines that generate noise over 70 dB needs to be limited; ▪ In the case of noise complaints by local residents, number of trucks per day visiting the site needs to be reduced; ▪ All machines and vehicles to be used in construction/ reconstruction/ rehabilitation activities must have use permit; ▪ When not in use the equipment and machinery need to be shut down; ▪ Maximum speed of the vehicle on unpaved roads should be restricted to 20 km/h.	works				
▪ Water consumption and emissions into water: - creation of additional water demand, - possible contamination of surface water.	▪ Monitoring water consumption; ▪ Monitoring of water quality; ▪ Proper waste disposal and separation of hazardous waste is required, as well as the engagement of authorized companies for final waste disposal; ▪ Oil and fuel collection systems to be fitted to prevent leakage; ▪ Vehicles and machines need to be regularly maintained to prevent leakage. ▪ Installation of oil separators in accordance with EN ISO 858-1 and 858-2.	Included in construction works	Included in supervision	Contractor	Supervisory body*	
▪ Soil degradation and emissions to soil:	▪ Topsoil from borrow pit areas should be saved and reused in re-vegetating the pits; ▪ Control during earthworks to prevent degradation of	Included in construction works	Included in supervision	Contractor	Supervisory body*	

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

Impact/Problem	Mitigation Measures	Cost Assessment (US$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
- soil erosion; - borrow pit excavation; - soil contamination by oils, fuels and other hazardous substances.	terrain stability is required; ▪ Borrow pit areas will be graded to ensure drainage and visual uniformity; ▪ Installation of drainage structures for proper drainage of water from construction site 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.					
▪ Decrease in the aesthetic value of the landscape due to construction site organization.	▪ The land determined for use by the Project can only be used for the construction activities and no other land is available for i.e. storage of building material, parking of the heavy machinery etc. in terms of soil disruption;	Included in construction works	Included in supervision	Contractor	Supervisory body*	
▪ Inadequate traffic management during construction: - traffic congestion and obstructions on road sections;	▪ Implementation of EMP which includes the: - Design and implementation of the TMP, - Placement of adequate traffic signalization.	Included in construction works	Included in supervision	Contractor	Supervisory body*	
▪ Inadequate waste handling.	▪ Implementation of WMP that will enable environmentally acceptable waste collection, its storage, transport and final disposal, or recycle/reuse. ▪ No hidden waste disposal at the site is allowed, nor its incineration.	Included in construction works	Included in supervision	Contractor	Supervisory body*	+ local waste management operator
▪ Inadequate organization of construction site.	▪ Implementation of CSOP	Included in construction	Included in supervision	Contractor	Supervisory body*	

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

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

Impact/Problem	Mitigation Measures	Cost Assessment (US$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
		works				
▪ Inadequate workers safety.	▪ Implementation of work safety measures: - Provide workers with a safe and healthy work environment, - Provide personal protective equipment, - Respect safety procedures, - Provide portable toilets, - Provide drinking water	Included in construction works	Included in supervision	Contractor	Supervisory body*	
▪ Accidental situations i.e. spills, leakage of oils, fats, fuels and similar hazardous materials.	▪ Implementation of MPCA which includes: - Spill Response Plan, - Emergency Preparedness and Response Plan. ▪ Implementation of Elaborate on protection from fires and explosions	Included in construction works	Included in supervision	Contractor	Supervisory body*	
▪ Materials supply and transport.	▪ Implementation of CSOP to ensure materials are transported in covered vehicles to reduce impacts on environment and Management Plan on Safety at Work to ensure materials are used in accordance with Bill of Quantities	Included in construction works	Included in supervision	Contractor	Supervisory body*	
CHANCE-FIND PROCEDURES DURING CONSTRUCTION PHASE						

Impact/Problem	Mitigation Measures	Cost Assessment (US$)		Institutional Responsibility		Comments
		Operative	Implementation	Operative	Implementation	
▪ Impacts on cultural heritage.	▪ If archeological findings appear on or near construction site immediate work suspension and local authorities notification is required; ▪ Implementation of CSOP.	Included in construction works	Included in supervision	Contractor	Supervisory body*	In case of finding cultural heritage, supervision is implemented by the competent institution
OPERATION PHASE						
▪ Regular occurrences during road operation	▪ Regular road maintenance	Incl. in maintenance works	Internal resources	Contractor for maintenance works	PC Roads FBH	
▪ Contamination of river Neretva due to lack of maintenance of the grease separator	▪ Regular grease separator maintenance	Incl. in maintenance works	Internal resources	Contractor for maintenance works	PC Roads FBH	
▪ Decrease in road safety due to the increase of traffic	▪ Regular maintenance of road safety equipment and signage	Incl. in maintenance works	Internal resources	Contractor for maintenance works	PC Roads FBH	

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

8 . ENVIRONMENTAL MONITORING PROGRAM

The table below presents summary of potential impacts in connection with the project, along with monitoring measures necessary as information for construction site – development of a certain plan during project implementation and connection of mitigation measures to avoid or reduce their impact.

The main components of the Monitoring Plan are as follows:

- Parameters to be monitored,
- Location of monitoring parameters,
- The way how monitoring will be performed,
- When monitoring will be performed,
- Costs of monitoring activities,
- Responsibility for monitoring activities.

The Contractor shall create Environmental Monitoring Programs (EMP), prior to commencement of works, in accordance with requirements of this ESMP, which will include a minimum of monitoring requirements, described in table below, without limitation to these requirements. PC Roads FBH will be responsible for reviewing the state of the EMP prepared by the Contractor and for ensuring that these monitoring programs are in accordance with this document.

The list for monitoring in the field will be prepared on the basis of the ESMP. The list for monitoring in the field will be used by Supervision Engineers of PC Roads FBH. These signed lists will be forwarded to PC Roads FBH, who will be responsible for monitoring and reporting about the compliance.

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

Table 4: Environmental Monitoring Program

Potential impact	Which parameter is to be monitored?	Where will the monitoring be performed?	How will the monitoring be performed?	When will the monitoring be performed?	Cost assessment (US$)		Responsibility	
					Implementation	Operative	Implementation	Operative
PRE-CONSTRUCTION PHASE								
▪ Job creation and impacts on local businesses.	▪ Number of employed persons from local communities; ▪ Timely informing the local communities about the forthcoming works.	Wider area of construction	Inspection	Prior to construction	Included in performance	Included in performance	Contractor	Contractor
▪ Temporary occupation of privately owned land plots for the purpose of construction of access roads and placement of staff, machines and material.	▪ Implementation of RPF provisions	Construction site	Visual inspection and inspection	Prior to construction and during construction when necessary	Included in supervision	Included in supervision	Supervisory body + PC Roads FBH	Supervisory body + PC Roads FBH
CONSTRUCTION PHASE								
▪ Access restrictions.	▪ Provided alternative access, ▪ TMP in place, ▪ Implementation of RPF provisions on compensation procedures for businesses affected by access restrictions and livelihood restoration.	Construction site	Visual inspection	Random checks at least once a week during the construction	Included in supervision + Included in RPF (RAP)	Included in supervision + Included in RPF (RAP)	Supervisory body + PC Roads FBH	Supervisory body + PC Roads FBH
▪ Restrictions on land use and damage to the private property (agricultural plots, horizontal	▪ CSOP in place; ▪ Disposal of construction and maintenance materials; ▪ Position of work camps and	Construction site	Visual inspection	Prior to construction and random checks at least	Included in supervision + Included in	Included in supervision + included RPF	Supervisory body + PC Roads	Supervisory body + PC Roads

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
infrastructure, fences and railings) due to disposal of construction waste, work camps and parks of heavy machinery	heavy machinery parks; ▪ Implementation of RPF provisions on compensation procedures in case occasional land use cannot be avoided, compensation will be provided to affected owners/users and livelihood restoration assistance.			once a week during the construction	RPF (RAP)	(RAP)	FBH	FBH
▪ Impacts on local traffic (increase of local traffic, including heavy machinery and trucks, operation of roads with only one lane causing traffic delays and limited access)	▪ TMP in place; ▪ Traffic patterns; ▪ Timely information to the citizens.	On construction site and nearby	Visual inspection and inspection	random checks during the week	Included in supervision	Included in supervision	Supervisory body	Supervisory body
▪ Air emissions: - exhaust gasses; - dust generation	▪ Level of dust (amount of particles of sediment and floating particles); ▪ Emissions of exhaust gases from vehicles and equipment; ▪ (SO_2, NO_2, dim and PM_{10}).	Construction site	Measuring devices	During construction when needed and upon complaints by the citizens	-	500 USD/measuring	Contractor + Supervision	Authorized laboratory
▪ Increased level of noise and vibration: - noise emission, - vibration.	▪ Level of noise.	In populated places near the construction site	Measuring devices	Upon order by supervisory organ or upon complaints by the citizens	-	500 USD /measuring	Contractor + Supervision	Authorized laboratory
▪ Emissions into water: ▪ possible contamination of	▪ Analysis of parameters of surface water quality:	In watercourse near	Standard laboratory equipment	Upon order by supervisory organ or upon	-	1000 USD /measuring	Contractor +	Authorized laboratory

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
surface water and groundwater	- Chemical analysis (PH, turbidity, conductivity, temperature, suspended particles, KPK, BPK_5, ingredients with nitrogen); - Standard bacteriological analyses.	construction site (Neretva River) downstream	and methods of water quality monitoring	complaints by the citizens			Supervision	
▪ Pollution of surface watercourses.	▪ Presence of oil film in surface watercourses.	In watercourse near construction site (Neretva River) downstream	Visual inspection + Standard laboratory equipment and methods of water quality monitoring	Upon order by supervisory organ or upon complaints by the citizens	-	500 USD /measuring	Contractor + Supervision	Authorized laboratory
▪ Increased water consumption.	▪ Amount of affected water.	Construction site	Water meter, record-taking	Daily	Included in performance	Included in performance	Contractor + Supervision	Contractor
▪ Emissions into water and soil due to improper waste handling.	▪ CSOP in place, ▪ Waste generation and management.	Construction site	Visual inspection, disposal records or receipts from landfills	Daily	Included in performance	Included in performance	Contractor + Supervision	Contractor
▪ Soil degradation: - soil erosion; - borrow pit excavation;	▪ Implementation of CSOP, ▪ Implementation of WMP.	Construction site	Visual inspection	Regularly during construction	Included in performance	Included in performance	Contractor + Supervision	Contractor

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
▪ 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 and upon completion of works	Included in performance	Included in performance	Contractor + Supervision	Contractor
▪ Degradation of biological and ecological resources	▪ All excavated trenches over 0.5 min depth will be sloped or have escape ramps installed which are suitable for the escape of animals. All trenches shall be inspected for wildlife prior to backfilling.	Construction site	Visual inspection	Regularly during Construction.	Included in performance	Included in performance	Contractor + Supervision	Contractor
▪ Waste management.	▪ Implementation of CSOP and WMP.	Construction site	Visual inspection, disposal records or receipts from landfills	Regularly during construction. 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 MPCA which includes: - Spill Response Plan,	Construction site	Visual inspection	Daily	Included in performance	Included in performance	Contractor + Supervision	Contractor

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.							
▪ 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.).	Construction site	Visual inspection	Daily	Included in performance	Included in performance	Contractor + Supervision	Contractor
OPERATION PHASE								
▪ Water emissions	▪ Analysis of the water quality parameters: - Chemical analysis (PH, turbidity, conductivity, temperature, suspended particles, KPK, BPK_5, ingredients with nitrogen, total fats and oils, mineral oils);	At the grease separator outlet	Sampling	Once a year	Internal resources	1000 USD/sample	PC Roads FBH	Licensed laboratory

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 shall be responsible for the implementation and compliance of the Project in line with the ESMP.

Application of all identified social and environmental mitigation measures and the ESMP will be provided. The Contractor will be responsible for the implementation of the environmental mitigation measures during construction and will employ environmental experts to supervise the implementation of Contractor's responsibilities and will be in communication with the investor and with the FMoET. 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 ESMF. During project implementation, PC Roads FBH will supervise compliance of the Contractor with provisions and ESMP.

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

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

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.

If there shall be any accidental situations or jeopardizing the environment and society the reporting process must be immediate. The Contractor is obliged to inform the PC Roads FBH and local community immediately after any accidental situations that happened over the phone +387 33 250 370 or via email form at the PC Roads FBH website: http://www.jpcfbih.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 FMoET and 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 WB for review.

PC Roads FBH shall prepare and submit monthly progress reports to WB.

PC Roads FBH has the responsibility of preparing and submitting to the Federal Ministry of Environment and Tourism (FMoET) the reports which will include:

- status of implementation of mitigation measures,
- needs for possible additional mitigation measures,
- description of cases of non-compliance with environmental requirements,
- received grievances by local population and other participants, and the way how the grievances were resolved.

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

10. PUBLIC DISCUSSION AND INFORMATION DISCLOSURE

10.1. PUBLIC CONSULTATION

Public consultation of the subject ESMP will be organized after the WB and PC Roads FBH approve the draft of the ESMP in Mostar.

Minimum 10 day before the public consultation the document shall be published and made accessible to the public.

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 shall be disclosed again.

10.2. INFORMATION DISCLOSURE

ESMP draft will be available on the website of PC Roads of the (www.jpcfbih.ba) in a local language and on the website of the WB in English. During the process of public consultation the interested public will obtain all information regarding the project, including anticipated social and environmental impacts. The findings of the assessment will be presented in a simple way.

During construction period, 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).

10.3. 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 City of Mostar.

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 city administration and shall be available for download on the website of JP Roads FBH (www.jpcfbih.ba).

The grievance can be logged in writing within PC Roads FBH, with the Contractor, by phone, by fax, and by e-mailing it to the designated e-mail address zalbena@jpcfbih.ba, or by mail to the address Terezija 54, 71000 Sarajevo.

Further information on Grievances can be found in the ESMF and RPF for the FBH Road Sector Modernization Project.

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

APPENDIX 2. REPORT ON PUBLIC DISCUSSION