

Bosnia and Herzegovina
Federation Road Sector Modernization Project (P152406)
Terms of Reference
FOR SITE-SPECIFIC ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN
INCLUDING MONITORING
SECTION NEUM-STOLAC

1. INTRODUCTION

Main roads network in FBH is 2,024 km long with the density of 7.77 km/100 sq. km, or 0.867 km/1,000 inhabitants and it can be classified as low - developed networks in Europe. The most of the main road network in FBH was built between 1968 - 1975 for the transport needs of that time with the modest elements (inadequate width of carriage-way and roadbed, high grades, sharp curves, inadequate depth of the carriage-way structure, steep and unprotected slopes etc.). After the war, investments have been mainly for rehabilitation/improvement of the existing main roads and road structures which comprised overlaying, rehabilitation of asphalt carriage-ways, drainage works and road safety upgrading. The average age of the bridges on the main roads in FBH is around 45 and tunnels 40 years.

Road infrastructure in Bosnia and Herzegovina, such as in Federation of Bosnia and Herzegovina cannot completely meet requirements for modern transportation. Modernization of the road network has high priority in terms of raising the level of services, adjustment with the socio-economic development and improvement of the road safety.

JP Ceste Federacije BH (JP Ceste FBH) has launched an overarching program for the modernization of the main roads on the territory of the Federation of Bosnia and Herzegovina (FBH) to ensure adequate road infrastructure by 2020. For this purpose, it has requested the Government of FBH to ensure credit funds from International Financial Institutions (IFIs).

In the framework of the mentioned umbrella Program, JP Ceste FBH, a limited liability company wholly owned by the Government of FBH, has initiated the FBH Road Sector Modernization Project (the Project). For this purpose, it has requested the Government of FBH to ensure credit funds from International Financial Institutions (IFIs). The Government of FBH has supported the initiative to ensure credit resources from IFIs in the amount of up to €150 million for the Program "Modernization of the Main Roads in FBH" (the Program), including EUR 103.38 million from the World Bank (WB) and the European Investment Bank (EIB) for the Project.

The Project comprises several small and mid-sized investment schemes including:

- Construction of new sections of roads
- Improvement of road elements within the existing corridor
- Construction of third lanes to be used by slow vehicles.
- Reconstruction of carriage-way structure, axis corrections

- Elimination of road safety black spots and dangerous locations
- Improvement of bridges and tunnels.

The Project is expected to facilitate trade, enable developing tourism, promote regional and national economic growth and contribute to economic and social cohesion in the region. Additionally, the Project is expected to reduce the number of road accidents, local pollution and vehicle operating costs, thus having general positive effects at the economic macro-level in the short and medium term. The beneficiaries of the Project are road users and communities neighboring the selected sub- projects across FBH who will benefit from improved connectivity and road safety.

Construction of the main road M 17.3 Buna - Neum, section Neum - Stolac is mid-size investment scheme within the Project. Construction of this road section will open up the coast and the area leading to the coast and enable the development of a promising area with great possibilities for agriculture and tourism. Opening up this part of the country for easier tourist access would also create development opportunities.

Construction of the main road M 17.3 section Neum - Stolac is a subject of Environmental Assessment in accordance with Environmental Law („Official Gazette F BiH“ no.33/03, 38/09). Environmental impact assessment for the planned main road M-17.3 Buna - Neum, section Neum - Stolac has been analyzed as part of a special study document (Feasibility Study), at the level of Previous Environmental Impact Assessment and Environmental Impact Study. The Environmental Impact Study for this project was prepared in July 2009 by consultant Roughton Int. in cooperation with Energoinvest d.d Sarajevo and formally accepted by the Federal Ministry of Environment and Tourism as reflected in the Environmental Permit issued in May 2010.

Due to the involvement of the World Bank as one of the financiers, in March 2016 the Environmental Impact Study has been revised by consultant Ecoplan Ltd. Mostar to reflect the existing situation, address specific gaps (e.g. social aspects, gender issue) and also to meet the World Bank criteria for Category A projects, including a generic Environmental and Social Management Plan (ESMP).

A two-step consultation process has already been conducted for the ESIA package in November 2015 and March 2016.

1.1 Description of the main road M 17.3 section Neum-Stolac

The Buna - Neum road commences as a minor road branching off the main E73 at Buna some 11 kilometers south of Mostar and runs roughly southeast to Stolac and from there south and southwest to Drenovac, Brocanac, Kisevo and finally down to the coast at Neum.

The existing main road M 17.3 Buna – Stolac - Neum provides the only connection of Bosnia and Herzegovina to the seaside. Due to the poor condition of this road, the preferred access to the seaside of B&H and the town of Neum was through the territory of Republic of

Croatia which involved two border crossings. Traffic on the old road without border crossings has increased significantly after Republic of Croatia joined the EU.

Main features of the existing road section Neum - Stolac are:

- the route is laid over the limestone plateau with very favorable geological conditions;
- the road does not lie across the active flows;
- road width from Stari Neum to Cerovica is 4 m ;
- there is a slip road on the left, approx. 500 m away from Cerovica – a connection to the major road M17.5 Capljina – Dracevo – Border with the Republic of Croatia;
- asphalted road from Cerovica to Drenovac is approx. 3m width; this road is very important for the local area as it connects following settlements: Vinine, Crnoglav, Udara and Kadica Dubrava;
- there are many serpentine at the route;
- there are many connection roads to farms, outbuilding and housing estates;
- there are many blind curves with minimal radius of the horizontal curves and large route bending;
- longitudinal slopes are greater than 7% at lengths over 1000 m;
- the Stari Neum - Kisevo subsection, having the length of 3km, is constructed; and
- 5 km from Drenovac to Stolac is existing major road .

In the period 2009 - 2013 on the existing road section Neum - Stolac happened 104 road accidents, among which 2 with fatalities, 16 with injured.

The above given features of the existing road demonstrate that is urgent construction the road in the same corridor in order to satisfy requirements for modern road communication.

The new road will be a single carriageway road, each lane 3,5 m wide with two hard shoulders of 1,5 m each making a new road corridor of 10,0 m. As new alignment mostly passes through rocky terrain, this provides the building in good material. Construction of modern pavement structure, application of adequate drainage, as well as other technical solutions, would result with the road that will represent the traffic link between the continental and coastal part of Bosnia and Herzegovina for a long period.

Increasing traffic flow on this route will allow the economic benefits of seaside tourism in Neum to reach a wider population in the south – west regions of B&H. In particular, the towns of Stolac FBH and Ljubinje RS would have easier access to tourism areas and therefore employment. Stolac has one of the most beautiful steccinecropolis (Radimlja) in the region. A new road is expected to facilitate farm to market distribution, benefiting amongst others poor rural communities in the municipalities Neum, Stolac, Capljina, Ljubinje, Berkovici and Nevesinje and would strengthen the integration of the community through growth and economic development.

Population in the Project's Area of influence (2013 Census)

Municipality	Total Number of Persons	Total Number of Households	Total Number of Dwellings
Neum (FBH)	4.960	1.392	4.023
Stolac (FBH)	14.889	3.911	4.893
Ljubinje (RS)	3.756	1.095	1.791
Berkovici (RS)	2.272	649	1.040
Nevesinje (RS)	13.758	4.065	5.871
Gacko (RS)	9.734	2.770	3.964
Capljina (FBH)	28.122	8.039	10.304

According to the FBH – JP Ceste FBH traffic counts 2013, the selected road improvements are expected to directly benefit roughly 130.000 road users (aggregate number of daily average traffic for all road sections affected by the project).

The new road Neum - Stolac is additionally expected to have positive economic impacts on the two connecting municipalities, Neum and Stolac, and their rural hinterlands. The new road will indirectly benefit the total population of interior B&H by providing a needed national outlet to the Adriatic coast.

Improvement of transport conditions should affect the quality of life which will be manifested through:

- a) savings in travel time for passengers and the transport time for goods compared to the existing road,
- b) reduce the costs of goods and passengers,
- c) evaluation of geo-traffic position of B&H,
- d) cost savings resulting in accidents compared to the existing travel route,
- e) mitigation of negative environmental impact, by directing traffic to a new future road, which does not pass through the center of settlements and
- f) better conditions of transport services would have caused better living and work conditions of the local population.

Specific Components

The future road alignment Neum - Stolac can be divided into following sub-sections:

1. Section Babin Do (Tunnel Ostrovac) – Brocanac (length = 6.4 km), land acquisition process largely completed.
2. Section Broćanac – Hutovo – Cerovica (length = 11.2 km), and
3. Section Cerovica – Drenovac (length = 15.3 km).

Section Stari Neum – Kisevo – Babin Do (Tunnel Ostrovac) (length = 5.6 km), has already been constructed, missing only the final layer of asphalt.

Map of the Road Modernization Project and Neum – Stolac sections are included in **Annex 1**.

1.2 Environmental baseline conditions

Area, where it is foreseen implementation of the project of the main road M-17.3 Stolac - Neum, represents a stable karst terrain, where alternate Mediterranean and sub-Mediterranean climate, with a large amount of solar insolation. It includes a small amount of precipitation, higher average annual temperature regarding continental regions, long vegetation period, but greater windiness. All this had impact to the development of vegetation specific for this area.

Due to the proximity of Hutovo Blato, many groups of amphibians and insects that are considered very important link in the chain of specific ecosystems represented in the wider area of the proposed project.

Micro region, through which passes the road section considered, is extremely rich with cultural and historical heritage of different type, functional type and chronological determination.

In a wider scope of the alignment, which includes territory related to close geographic-regional and historical- cultural features, there are 35 *national monuments*, and, a large number of *registered* assets of heritage, diverse in character. In this area - which is the subject of our general reviews – we find the assets of architectural, archaeological and sepulchral heritage; registered as *individual monuments* (historic buildings and archaeological monuments), and monumental unities (archaeological areas, architectural, natural and architectural and historical entities). A large number of archaeological and historic areas are multilayer and, to them, there are material remains from several periods.

The project area is also characterized by the karst rock formations, and as such is located above an intricate and complex network of groundwater flows. The area itself is distanced from any minor or major rivers and watercourses.

Corridor of the future main road passes through mostly rural areas of the municipality of Stolac and Neum, except in the area of Stari Neum, which is considerably more urban.

General information on environmental baseline condition are available in the EIS elaborated in July 2009 and in the ESIA elaborated in March 2106. The Consultant shall review the relevance of existing baseline data in the available EIS and ESIA and perform monitoring, testings and a complete survey of the site, in order to supplement the existing, available information, and to present the baseline of the project site in the best possible manner, corresponding to World Bank category A due diligence.

2. OBJECTIVE OF THE ASSIGNMENT

The objective of the assignment is to prepare a site-specific ESMP that shall follow the outline of ESMPs as per World Bank Operational Policies – OP 4.01 on Environmental Assessment and guidelines for Category A projects. The ESMP shall compile and build on the

recommendations and findings of the 2009 EIS and the 2016 ESIA, as well as the relevant issued permits, including environmental and water management permits. The ESMP shall ensure that the relevant provisions included in the project design are sufficient for environmental protection measures called upon in the EIS and ESIA. The ESMP needs to provide monitoring results, values and numbers of testing and a complete survey of the site for any endemic species or other environmental issues that the ESIA document provides only general provisions for. The site-specific ESMP shall be prepared in the manner consistent with the World Bank standards and procedures¹ for category A, EU standards and national environment management authority requirements.

3. THE SCOPE OF THE ASSIGNMENT

The scope of work shall include following, but not necessarily be limited to the:

Preparation of site-specific Environmental and Social Management Plan (ESMP)

Site-specific ESMP needs to provide monitoring results, values and numbers of testing and a complete survey of the site for any endemic species or other environmental issues that the ESIA document provides only general provision for. The ESMP shall, in its final form present a plan of activities that shall be carried out with respect to environmental protection on the project site, providing an adequate baseline and specific measures.

A project's ESMP consists of the set of mitigation, monitoring, and institutional measures to be taken during implementation and operation to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels. The plan also includes the actions needed to implement these measures.¹ Management plans are essential elements of EA reports for Category A projects; for many Category B projects, the EA may result in a management plan only. To prepare a management plan, the borrower and its EA design team (a) identify the set of responses to potentially adverse impacts; (b) determine requirements for ensuring that those responses are made effectively and in a timely manner; and (c) describe the means for meeting those requirements.² More specifically, the ESMP includes the following components.

Mitigation

The ESMP identifies feasible and cost-effective measures that may reduce potentially significant adverse environmental and social impacts to acceptable levels. The plan includes compensatory measures if mitigation measures are not feasible, cost-effective, or sufficient. Specifically, the ESMP:

(a) identifies and summarizes all anticipated significant adverse social and environmental impacts (including those involving involuntary resettlement);

(b) describes--with technical details--each mitigation measure, including the type of impact to which it relates and the conditions under which it is required (e.g., continuously or in the event of

¹Available at <http://web.worldbank.org/WBSITE/EXTERNAL/PROJECTS/EXTPOLICIES/EXTSAFEPOL/0,,menuPK:584441~pagePK:64168427~piPK:64168435~theSitePK:584435,00.html>

contingencies), together with designs, equipment descriptions, and operating procedures, as appropriate;

(c) estimates any potential environmental impacts of these measures; and

(d) provides linkage with any other mitigation plans (e.g., for involuntary resettlement, or cultural property) required for the project.

Monitoring

Monitoring during project implementation provides information about key environmental and social aspects of the project, particularly the environmental and social impacts of the project and the effectiveness of mitigation measures. Such information enables the borrower and the Bank to evaluate the success of mitigation as part of project supervision, and allows corrective action to be taken when needed. Therefore, the ESMP identifies monitoring objectives and specifies the type of monitoring, with linkages to the impacts assessed in the EA report and the mitigation measures described in the ESMP. Specifically, the monitoring section of the ESMP provides (a) a specific description, and technical details, of monitoring measures, including the parameters to be measured, methods to be used, sampling locations, frequency of measurements, detection limits (where appropriate), and definition of thresholds that will signal the need for corrective actions; and (b) monitoring and reporting procedures to (i) ensure early detection of conditions that necessitate particular mitigation measures, and (ii) furnish information on the progress and results of mitigation.

Capacity Development and Training

To support timely and effective implementation of environmental project components and mitigation measures, the ESMP draws on the EA's assessment of the existence, role, and capability of environmental units on site or at the agency and ministry level.³ If necessary, the ESMP recommends the establishment or expansion of such units, and the training of staff, to allow implementation of EA recommendations. Specifically, the EMP provides a specific description of institutional arrangements--who is responsible for carrying out the mitigatory and monitoring measures (e.g., for operation, supervision, enforcement, monitoring of implementation, remedial action, financing, reporting, and staff training). To strengthen environmental management capability in the agencies responsible for implementation, most EMPs cover one or more of the following additional topics: (a) technical assistance programs, (b) procurement of equipment and supplies, and (c) organizational changes.

Implementation Schedule and Cost Estimates

For all three aspects (mitigation, monitoring, and capacity development), the ESMP provides (a) an implementation schedule for measures that must be carried out as part of the project, showing phasing and coordination with overall project implementation plans; and (b) the capital and recurrent cost estimates and sources of funds for implementing the ESMP. These figures are also integrated into the total project cost tables.

Integration of ESMP with Project

The borrower's decision to proceed with a project, and the Bank's decision to support it, are predicated in part on the expectation that the ESMP will be executed effectively. Consequently,

the Bank expects the plan to be specific in its description of the individual mitigation and monitoring measures and its assignment of institutional responsibilities, and ESMP must be finalized prior to start of works.

Baseline data – Monitoring

Monitoring shall include following:

- Air quality
- Surface and groundwater quality
- Soil quality
- Noise levels
- Survey of the site for any endemic species and other environmental issues (see table below)

Parameter	Location	Number of samples
Surface and groundwater quality	Water source Blace (according to Preliminary water consent define zero state and monitoring plan) According to instruction and collaboration with specialized institutions for monitoring of water quality, define organization of monitoring and a network of monitoring points	5
Air quality	Along road route near settlements and agricultural land According to instruction and collaboration with specialized institutions for monitoring of air quality, define organization of monitoring and a network of monitoring points	10
Soil quality	According to instruction and collaboration with specialized institutions for monitoring of soil quality, define organization of monitoring and a network of monitoring points	32
Noise levels	Along road route near settlements According to instruction and collaboration with specialized institutions for monitoring of noise levels, define organization of monitoring and a network of monitoring points	10
Survey of the site for any endangered and endemic species;	In zone of corridors of direct and indirect impacts	Field recording and creation of reports

Forest and forest land: frequency and type of forest systems, character of forest communities and their commercial categories, zones of sensitivity to harmful impacts from mechanical damage and damage caused by contamination, soil analysis for agricultural land;	In zone of corridors of direct and indirect impacts According to instruction and collaboration with specialized institutions for monitoring soil quality, define organization of monitoring and a network of monitoring points	Field recording and creation of reports
Migration routes of large and small wild game	In zone of corridors of direct and indirect impacts	Field recording and creation of reports
Cultural-historical heritage objects in zone of conflict with the road	In zone of corridors of direct and indirect impacts	Field recording, conservation recording of the current state

Data should be relevant to decisions about project location, design, operation, or mitigation measures, and should generally be consistent with the provisions of the environmental permit. In cases of different requests by the permit and the World Bank, the more stringent rules will apply.

The Consultant should particularly avoid compiling irrelevant data, and include only the baseline data directly related to the significant anticipated environmental and social impacts of the project. For the study areas, the mitigation measures dealing with the following should be addressed:

- (a) *Physical environment*: geology; topography; soils; climate and meteorology; ambient air quality; surface and ground-water hydrology; existing sources of air emissions; existing water pollution discharges; and receiving water quality.
- (b) *Biological environment*: flora; fauna; rare or endangered species; sensitive habitats, including parks or preserves, significant natural sites, cultural heritage sites, etc.; species of commercial importance; and species with potential to become a public health nuisance or a risk for vector-transmitted diseases.
- (c) *Socio-economic environment*: socio-cultural, institutional, historical and political context, demography (including gender, age, health and mortality, education, marital status,

household size etc.), economy & employment, land & livelihood, poverty and vulnerability, community characteristics (e.g., number of displaced persons) and social diversity, infrastructure (including health care services, power, water etc.), sites of cultural heritage interest, stakeholder identification and analysis.

The ESMP monitoring table shall follow a well-defined format as required by the World Bank guidelines, and as attached in Annex 2 of this Terms of Reference.

The Consultant will present a cost estimate for the implementation of the ESMP. Such cost should be an integral part of the ESMP and should reflect all associated cost whether related to human and other resources needed to monitor the plan, needed capacity building and training, and/or any consultancy assignments which may be required to assist in the performance of specific and highly technical duties over the construction and also maintenance of the road segment.

4. IMPLEMENTATION TIME SCHEDULE

The consultancy services shall be undertaken and completed within a period of five (5) weeks.

5. SERVICES AND FACILITIES TO BE PROVIDED BY JP CESTE FBH

5.1 Documentation

JP Ceste FBH shall provide the Consultant with access to, or copies of all, relevant information and documents, all or most in local language, such as previous feasibility studies reports, environmental assessments, operational data, etc., that may be required for the performance of the services. The Consultant will make a detailed review of this information, either in the local language, or by translating the information into English. The Consultant will bear the cost of any necessary translations.

6. REPORTING REQUIREMENTS

JP Ceste FBH considers of utmost importance the timely elaboration and submission of pertinent reports and briefings during the course of the work. Therefore, apart from submitting the reports, the Consultant shall be expected to hold updates/briefings with JP Ceste FBH on works in progress and problems encountered.

The Consultant will submit the following reports in English and local language to JP Ceste FBH:

(1.a.i) **Draft ESMP Report:** The guidance for the report content provided in **Chapter 3** may be used to structure the report but the Consultant is expected to use their professional experience to determine the final contents.

(1.a.ii) **Final ESMP Report** addressing the various comments of the JP Ceste FBH and the World Bank, including sufficient revisions that would ensure the document is of acceptable quality to the World Bank, as required for a Category A project. After incorporating the necessary modifications to the drafts the edited technical reports shall be submitted to JP Ceste FBH. Final ESMP needs to include monitoring results, values and numbers of testing.

The Consultant shall prepare and submit reports to JP Ceste FBH in one [1] electronic copy on CD ROM in Microsoft Word and PDF for text, Microsoft Excel for tables/graphs and spreadsheets and AutoCAD for drawings. Number of the hard copies is specified in the Table below.

Summary of the Expected Deliverables

No.	Report description	Number of the hard copies	Due date (weeks from Commencement date)
1.	Draft site-specific Environmental and Social Management Plan	6 (3 in English and 3 in local language)	2 weeks
2.	Final Environmental and Social Management Plan (including monitoring results)	6 (3 in English and 3 in local language)	5 weeks

7. THE RESOURCES FOR THE ASSIGNMENTS

7.1 Consulting company

Consulting company needs to be in on the list of the Federal Ministry of Environment and Tourism for carrying out the Environmental Impact Studies, experience in work with international financial institutions, specifically World Bank, including experience on work with similar assignments in the past three years. Experience with Category A Environmental Impact Assessments as per World Bank OP 4.01 is an advantage.

Consulting company needs to possess a laboratory and/or equipment to carry out prescribed analysis, or a valid contract with the authorized laboratory or institution that has a laboratory.

Minimum of the mobile equipment is:

- The values of the air quality of following parameters: the concentration of gases (SO₂, NO_x, NO₂, CO and O₃), carbon black, dust, and microclimate parameters (wind speed and direction, temperature, humidity, pressure),
- Automatic instrument for measurement of air emissions,

- The equipment for measuring temperature, pH, electrical conductivity and O2 in water,
- Equipment for taking samples for testing the quality of soil or contamination of soil,
- Instrument to measure noise levels.

The equipment must be calibrated according to applicable regulations.

7.2 Consultant's Team-Key experts: qualification and experience

A suggested composition of the ESMP team is as follows (key team members, to be complemented as appropriate):

7.2.1 Team Leader: shall have at minimum a MSc. degree in Environmental Engineering with experience in managing ESMPs and E&S due diligence, environmental management of road construction. Experience in or familiarity with social impact assessments is required. The Team Leader should have at least 10 years of experience in managing complex projects of multi disciplinary nature and involving several stakeholders. Excellent communication skills and knowledge of English language

7.2.2 Environmental specialist with at least 5 years of experience in conducting environmental impact studies and E&S due diligence assessments for infrastructure and road projects. Knowledge and experience with World Bank OP 4.01 Environment Safeguard Policy is required.

7.2.3 Social Sciences specialist(s): shall have at least 5 years of experience in conducting social impact studies in the construction and road projects in the host country, including public consultation in the local context, gender expertise, and/or resettlement expertise, as required.

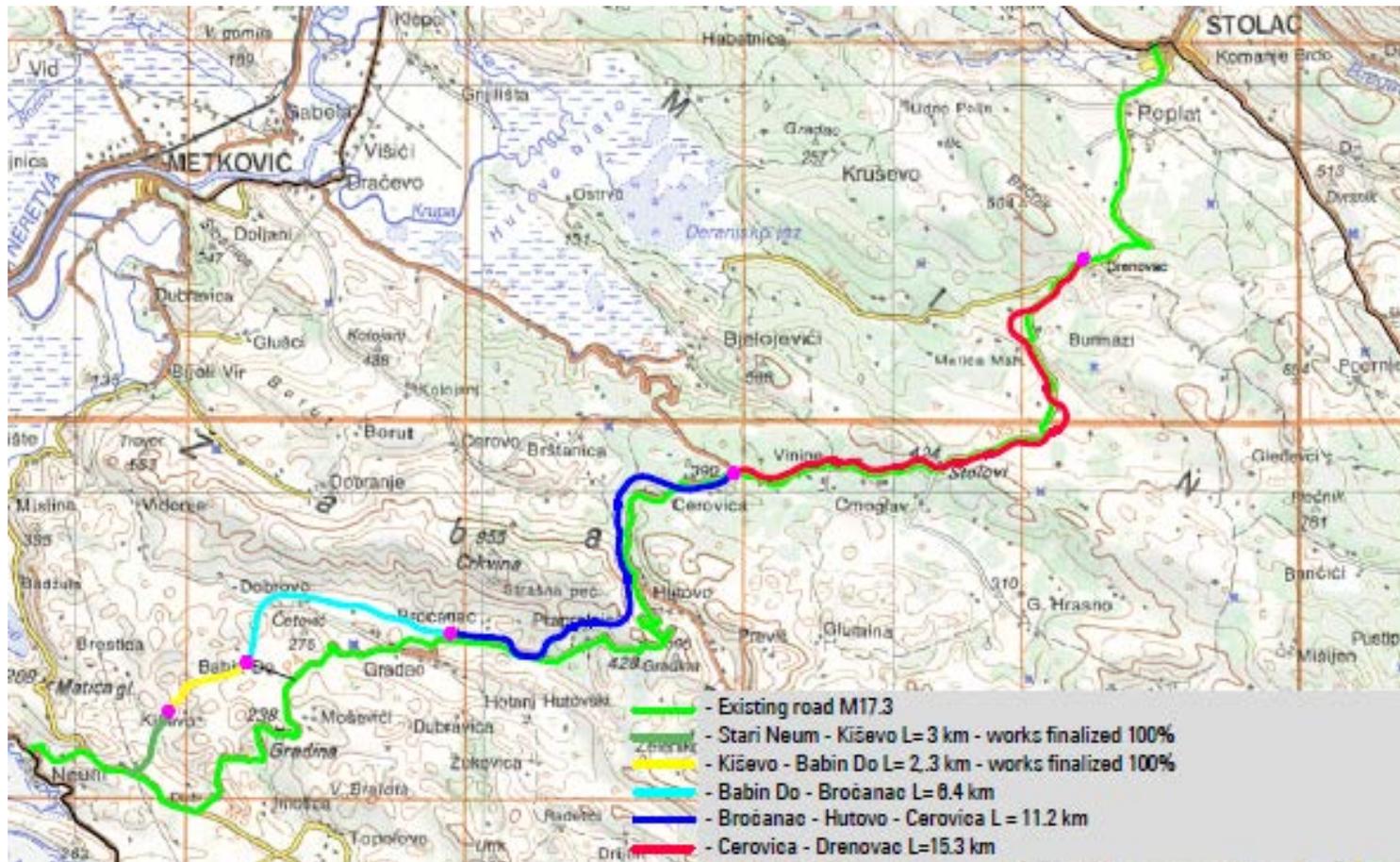
7.2.4 Civil Engineer: shall have a degree in Civil Engineering with at least 10 years of experience in designing roads and public works infrastructure.

7.2.5 Other Key Experts: the consulting team shall also include other key experts, including a Biologist and a Cultural Heritage Expert that may not need to be part of the core team, but will be included in site surveys and development of the ESMP.

The Team shall have knowledge of the current national environmental legislation and procedures as well as the World Bank ESMP requirements.

The specialists are expected to work together on analyzing potential interconnected and cumulative environmental and social impacts and risks of the projects.

Annex 1: Neum – Stolac Sections



Annex 2: ESMP tables format

Table 1: Environmental and Social Management Plan Format

Phase	Issue	Mitigating Measure	Estimated Cost (US\$)		Institutional Responsibility		Comments (e.g. secondary impacts)
			Install	Operate	Install	Operate	
Design							
Construction							
Operation							
Decommissioning							

Table 2: Environmental and Social Monitoring Plan Format

Phase	What <i>parameter is to be monitored?</i>	Where <i>is the parameter to be monitored?</i>	How <i>is the parameter to be monitored/ type of monitoring equipment?</i>	When <i>is the parameter to be monitored- frequency of measurement or continuous?</i>	Why <i>Is the parameter to be monitored (optional)?</i>	Estimated Cost (US\$)		Responsibility	
						Install	Operate	Install	Operate
Baseline									
Construction									
Operation									

Phase	What parameter is to be monitored ?	Where is the parameter to be monitored ?	How is the parameter to be monitored/ type of monitoring equipment?	When is the parameter to be monitored- frequency of measurement or continuous?	Why Is the parameter to be monitored (optional) ?	Estimated Cost (US\$)		Responsibility	
						Install	Operate	Install	Operate
Decommission									

