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Report No: PAD1648

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN

IN THE AMOUNT OF EUR 58 MILLION

(US$ 64.6 MILLION EQUIVALENT)

TO

BOSNIA AND HERZEGOVINA

FOR THE

FEDERATION ROAD SECTOR MODERNIZATION PROJECT

THE FIRST PHASE OF THE

TRANSPORT SECTOR MODERNIZATION PROGRAM (TSMP)

July 11, 2016

Transport & ICT
EUROPE AND CENTRAL ASIA

CURRENCY EQUIVALENTS
(Exchange Rate Effective May 31, 2016)

Currency Unit	=	EUR
EUR 0.8967	=	US$1.0000
EUR 1.0000	=	US$1.1152

FISCAL YEAR
January 1 – December 31

ABBREVIATIONS AND ACRONYMS

B40	Bottom forty percent of income distribution	MOCT	Ministry of Transport and Communications (entity level)
BAM	BiH Convertible Mark	MFT	Ministry of Finance and Treasury Bosnia and Herzegovina
BFC	Beneficiary Feedback Commission	MFRS	Ministry of Finance of Republika Srpska
BiH	Bosnia and Herzegovina	NCB	National Competitive Bidding
BP	World Bank Procedure	NPV	Net Present Value
CE	Citizen Engagement	OP	Operational Policy
COP21	21st annual Conference of the Parties	PAD	Project Appraisal Document
CFD	Central Feedback Desk	PC Roads FBH	Public Company Roads of Federation of Bosnia and Herzegovina (Javno Preduzeće “Ceste Federacije Bosne i Hercegovine”)
CPF	Country Partnership Framework	PDO	Project Development Objective
EA	Environmental Assessment	PIMT	Project Implementation and Management Team
EBRD	European Bank for Reconstruction and Development	POM	Project Operation Manual
ECA	Europe and Central Asia	QCBS	Quality and Cost-Based Selection
EIB	European Investment Bank	RAMS	Road Asset Management System
EIRR	Economic Internal Rate of Return	RAP	Resettlement Action Plan
EIS	Environmental Impact Study	REBIS	Regional Balkans Infrastructure Study
EMP	Environmental Management Plan	RPC	Railways Public Corporation
ESIA	Environmental and Social Impact Assessment	RPF	Resettlement Policy Framework
ESMF	Environmental and Social Management Framework	RRA	Resettlement Review and Audit
EU	European Union	RRB	Railway Regulatory Body
FBH	Federation of Bosnia and Herzegovina	RS	Republika Srpska

FM	Financial Management	RSMTC	Ministry of Transport and Communications of the Republika Srpska
FMoTC	Federal Ministry of Transport and Communication	RSRD	Republika Srpska Road Directorate ("Public Company Republika Srpska Roads")
FBH RMP	Road Modernization Program of the Federation of Bosnia and Herzegovina	SAA	Stabilization and Association Agreement
FMF	Federal Ministry of Finance	SC	Steering Committee
GDP	Gross Domestic Product	SCD	Systematic Country Diagnostic
GHG	Greenhouse Gas	SEE	South East Europe
HDM-4	Highway Development and Maintenance	SEETO	South East Europe Transport Observatory
ICB	International Competitive Bidding	SOE	Statement of Expenditure
IFI	International Finance Institution	SOP	Series of projects
IFR	Interim Financial Report	TA	Technical Assistance
IFRS	International Financial Reporting Standards	TEN-T	Trans-European Transport Networks
INDC	Intended National Determined Contributions	TSMP	Transport Sector Modernization Program
IPA	Instrument for Pre-Accession Assistance	UNDP	United Nations Development Program
IRAP	International Road Assessment Program	UNFCCC	United Nations Framework Convention on Climate Change
ISA	International Standards on Auditing	USD	United States Dollar
ISP	Implementation Support Plan	VAT	Value-Added Tax
IT	Information Technology	WB	World Bank
km	Kilometer	ZFBH	Željeznice Federacije Bosne i Hercegovine (Railway of the Federation of Bosnia and Herzegovina)
M&E	Monitoring and Evaluation	ZRS	Željeznice Republike Srpske (Railway of the Republic Srpska)
MOCT	Ministry of Communication and Transport Bosnia and Herzegovina (state level)		

Regional Vice President:	Cyril E. Muller
Country Director:	Ellen A. Goldstein
Senior Global Practice Director:	Pierre Guislain
Practice Manager:	Juan Gaviria
Task Team Leader:	Liljana Sekerinska, Evgenia Epaneshnikova

BOSNIA AND HERZEGOVINA
FEDERATION ROAD SECTOR MODERNIZATION PROJECT
First Phase of the Transport Sector Modernization Program

TABLE OF CONTENTS

Page

I. STRATEGIC CONTEXT 1

A. Country Context 1

B. Sectoral and Institutional Context 2

B.1. Road Sector 3

B.2. Railway Sector 6

C. Higher Level Objectives to which the Program and Project Contribute 6

II. PROGRAM AND PROJECT DEVELOPMENT OBJECTIVES 8

A. The Program Objective 8

B. The Project PDO 8

C. Project Beneficiaries 8

D. PDO Level Results Indicators 9

III. PROGRAM AND PROJECT DESCRIPTION 9

A. Project Components 9

B. Project Financing 10

C. Project Cost and Financing 10

D. Series of Program and Project Objective and Phases 11

E. Lessons Learned and Reflected in the Project Design 12

IV. IMPLEMENTATION 12

A. Institutional and Implementation Arrangements 12

B. Results Monitoring and Evaluation 13

C. Sustainability 13

V. KEY RISKS 14

A. Overall Risk Rating and Explanation of Key Risks 14

VI. APPRAISAL SUMMARY 14

A. Economic and Financial Analysis 14

B. Technical 15

C. Financial Management 15
D. Procurement 16
E. Social (including Safeguards) 16
F. Environment (including Safeguards) 18
G. World Bank Grievance Redress 19

Annex 1: Results Framework and Monitoring 20

Annex 2: Detailed Project Description and Map of Project 28

Annex 3: Implementation Arrangements 34

Annex 4: Implementation Support Plan 45

Annex 5: Economic Analysis 48

Annex 6: Streamlining Climate Resilience in the Project 62

Annex 7: Principles of Collaboration between the IBRD and EIB (draft of April) 66

PAD DATA SHEET

Bosnia and Herzegovina

Federation Road Sector Modernization Project (P152406)

PROJECT APPRAISAL DOCUMENT

EUROPE AND CENTRAL ASIA

0000009382

Report No.: PAD1648

Basic Information		
Project ID P152406	EA Category A - Full Assessment	Team Leader(s) Liljana Sekerinska,Evgenia Epaneshnikova
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ] Financial Intermediaries [ ] Series of Projects [X]	
Project Implementation Start Date 03-Aug-2016	Project Implementation End Date 31-Dec-2021	
Expected Effectiveness Date 01-Mar-2017	Expected Closing Date 31-Dec-2021	
Joint IFC No		

Practice Manager/Manager	Senior Global Practice Director	Country Director	Regional Vice President
Juan Gaviria	Pierre Guislain	Ellen A. Goldstein	Cyril E Muller

Borrower: Bosnia and Herzegovina	
Responsible Agency: Public Company Roads of Federation of Bosnia and Herzegovina	
Contact:	Title:
Telephone No.:	Email:

Project Financing Data(in USD Million)					
[X]	Loan	[ ]	IDA Grant	[ ]	Guarantee
[ ]	Credit	[ ]	Grant	[ ]	Other

Total Project Cost:	101.30	Total Bank Financing:	64.60
Financing Gap:	0.00		

Financing Source	Amount
Borrower	0.00
International Bank for Reconstruction and Development	64.60
EC European Investment Bank	36.70
Total	101.30

Expected Disbursements (in USD Million)

Fiscal Year	2017	2018	2019	2020	2021	2022	0000	0000	0000	0000
Annual	1.70	7.80	11.40	13.50	15.60	14.60	0.00	0.00	0.00	0.00
Cumulative	1.70	9.50	20.90	34.40	50.00	64.60	0.00	0.00	0.00	0.00

Institutional Data

Practice Area (Lead)

Transport & ICT

Contributing Practice Areas

Proposed Development Objective(s)

The Program Development Objective of the Transport Sector Modernization Program (TSMP) is to upgrade transport infrastructure along priority transport links and to strengthen capacity for sustainable transport asset management.

The Project Development Objectives of the First Phase of the TSMP (the Federation Road Sector Modernization Project) are to improve road connectivity and safety for road users along project roads and to strengthen capacity for sustainable management of the main road network in the Federation of Bosnia and Herzegovina.

Components

Component Name	Cost (USD Millions)
Road Upgrade and Modernization	87.20
Road Safety Interventions	3.10
Improving Main Road Network Management	3.30
Project Management and Implementation	7.70
Contingency for Disaster Risk Response	0.00

Systematic Operations Risk- Rating Tool (SORT)

Risk Category	Rating
1. Political and Governance	Moderate
2. Macroeconomic	Moderate

3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Moderate
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Substantial
7. Environment and Social	Moderate
8. Stakeholders	Moderate
9. Other	Moderate
OVERALL	Moderate

Compliance

Policy

Does the project depart from the CAS in content or in other significant respects?	Yes [ ] No [X]
Does the project require any waivers of Bank policies?	Yes [ ] No [X]
Have these been approved by Bank management?	Yes [ ] No [X]
Is approval for any policy waiver sought from the Board?	Yes [ ] No [X]
Does the project meet the Regional criteria for readiness for implementation?	Yes [X] No [ ]

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

Legal Covenants

Name	Recurrent	Due Date	Frequency
PC Roads FBH Financial Management Software/FM Information System Upgrade		02-May-2017	

Description of Covenant

The Borrower shall cause the Federation through PC Roads FBH to, by no later than 3 months from the Effective Date, (a) renew PC Roads FBH's financial management software license or (b) upgrade the existing financial management system, all in a manner satisfactory to the Bank.

Conditions

Source Of Fund	Name	Type
IBRD	Adoption of a Project Operational Manual	Effectiveness

Description of Condition

The Borrower has caused the Federation through PC Roads FBH to prepare and adopt a Project Operational Manual satisfactory to the Bank.

Source Of Fund	Name	Type
IBRD	Subsidiary Agreement	Effectiveness

Description of Condition

The Subsidiary Agreement has been executed on behalf of the Borrower and the Federation under terms and conditions satisfactory to the Bank.

Source Of Fund	Name	Type
IBRD	Co-financing Agreement	Effectiveness

Description of Condition

The Co-financing Agreement has been executed and delivered and all conditions precedent to its effectiveness or to the right of the Borrower to make withdrawals under it (other than the effectiveness of the IBRD Agreement) have been fulfilled.

Source Of Fund	Name	Type
	Retroactive Financing	Disbursement

Description of Condition

No payments shall be made prior to the date of the IBRD Agreement, except that withdrawals up to an aggregate amount not to exceed Euro eleven million six hundred thousand (â‚¬11,600,000) may be made for payments made prior to this date but on or after March 31, 2016, for Eligible Expenditures under the Project

Source Of Fund	Name	Type
IBRD	Sub-Agreement	Effectiveness

Description of Condition

The Sub-Agreement has been executed on behalf of the Federation and PC Roads FBH under terms and conditions satisfactory to the Bank.

Team Composition

Bank Staff

Name	Role	Title	Specialization	Unit
Liljana Sekerinska	Team Leader (ADM Responsible)	Sr Transport. Spec.	Transport	GTI03

Evgenia Epaneshnikova	Team Leader	Transport Specialist	Transport	GTI03
Elena Corman	Procurement Specialist (ADM Responsible)	Procurement Specialist	Procurement	GGO03
Lamija Marijanovic	Financial Management Specialist	Financial Management Specialist	Financial Management	GGO21
Esma Kreso	Safeguards Specialist	Senior Environmental Specialist	Environment safeguards	GEN03
Eva Rossi	Safeguards Specialist	Consultant	Resettlement	CEAAS
Ifeta Smajic	Safeguards Specialist	Jr Professional Officer	Social Safeguards	GSU03
Jose C. Janeiro	Team Member	Senior Finance Officer	Finance Officer	WFALA
Moustafa Baher El-Hefnawy	Team Member	Lead Transport Economist	Transport	GTI03
Nightingale Rukuba-Ngaiza	Counsel	Senior Counsel	Legal	LEGLE
Nikola Ille	Safeguards Specialist	Senior Environmental Specialist	Environment safeguards	GEN03
Ruxandra Maria Floroiu	Safeguards Specialist	Lead Environmental Specialist	Environment safeguards	GEN03
Senad Sacic	Team Member	Program Assistant		ECCBM

Extended Team

Name	Title	Office Phone	Location
Marinos Skempas	Senior Geotechnical Engineer		Athens

Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Bosnia and Herzegovina	Federation of Bosnia and Herzegovina	Stolac	X		

Consultants (Will be disclosed in the Monthly Operational Summary)

Consultants Required ? No consultants are required

I. STRATEGIC CONTEXT

A. Country Context

1. Bosnia and Herzegovina (BiH) is a state with a complex governance arrangement. The Dayton Peace Agreement which ended the war in the country, established a governance structure comprising two entities, each with a high degree of autonomy: the Federation of Bosnia and Herzegovina (FBH) and Republika Srpska (RS). The district of Brčko was added to the structure in 1999. Between the two entities, governance structures and budgetary arrangements are asymmetric. While the RS is subdivided only into municipalities (62 in total), FBH is subdivided into 10 cantons[1], each with its own executive, legislative, and judicial branches of authority. Each canton is further subdivided into municipalities.

2. BiH is a small, middle-income country of close to 3.8 million people, which is yet to create a foundation for sustainable economic growth after a period of successful post-conflict recovery. Whereas its economy remains smaller than before the war, the improved capture of the informal economy through tighter tax enforcement suggests that progress is being made towards restoring the economic activity to pre-conflict levels. After years of relatively strong economic growth, averaging 5.5 percent of GDP during 2005-2008, BiH's economy proved vulnerable to external shocks and the economic growth slowed significantly at the outset of the global financial crisis. Following a double-dip contraction of the economy between 2008 and 2012, the country experienced the beginning of a moderate economic recovery in 2013 when growth reached 2.4 percent. This was interrupted by floods in May 2014. In 2015, BiH showed progress in reaching consensus on priorities for structural reforms, which also helped the country to draw closer to the European Union (EU). According to first estimates, real growth in 2015 was 3.2 percent and mainly driven by agriculture, manufacturing and services.

3. The progress on poverty reduction remains slow. The poverty headcount at the national level in BiH in 2011 stood at 15 percent of the population; the poverty rate was stable during the 2007-2011 period. While poverty incidence in 2011 is similar at the subnational levels, it is much higher in rural areas, at 19 percent, compared to 9 percent in urban areas. Unlike poverty, for which there is little difference between the FBH and the RS, the bottom forty percent income group (B40) is more prevalent in the RS than in the FBH. These patterns were generally stable during the 2007-2011 period. While some of the higher incidence of the B40 group in the RS is due to its smaller share of urban population, it is also the case that the urban population in the FBH has higher welfare on average compared with the urban population in the RS – 27 percent of the FBH urban population were in the (nationally defined) B40 group, compared with 36 percent of the urban population in the RS[2].

4. Although the country's complex governance system poses significant challenges in developing coherent sectoral policies and efficiently confronting emerging development priorities, authorities in BiH have been pursuing a jointly authored medium term Reform Agenda which represents a broad consensus among all levels of government on the key priorities of economic

[1] Canton is a unit, which consist the cities and municipalities. The cantons are formed taking into account the ethnic, economic and functional, natural-geographic and communication principles.

[2] World Bank, BHAS, FBO and RSIS. 2015. "Poverty and inequality in Bosnia and Herzegovina 2007-2011". Report No. 97643, Washington DC: The World Bank.

and social development that would take BiH to a more sustainable growth trajectory. The Reform Agenda implementation progress will underpin the country's application for EU membership. With the public sector spending close to 50 percent of GDP, ensuring efficiency of public expenditures is critical. The choices made by public institutions can therefore significantly influence economic growth. These choices are important to ensure efficient use of public resources toward faster economic growth, poverty alleviation and shared prosperity.

5. BiH's transport infrastructure is rated as the poorest among Southeast Europe (SEE) and European Union-Central Eastern Europe (EU-CEE) countries by the World Economic Forum (WEF). In 2015-16, BiH scored 2.2 out of seven on the WEF's Global Competitiveness Indicator (GCI) for quality of infrastructure, lower than the SEE-average of 2.9, the EU-CEE's average of 4.5. The Logistics Performance Index similarly rates BiH as having below SEE-average infrastructure (2.55 out of 5 compared with a regional average of 2.65) and standards significantly below those of the EU-CEE. Transport infrastructure improvements are necessary for the country to take advantage of its geographical position next to the world's largest market, and increase exports and export-related employment.

6. Climate change impacts are becoming increasingly important in infrastructure planning to minimize the occurrence of expansive repairs following extreme weather events. In the case of BiH, climate change risks particularly include increased precipitation and greater variability and intensity of rain events. These events and their recurrence may become more common and increased rainfall already exacerbates landslides on the transport network, highlighting the importance of determining its vulnerabilities to plan preventive investments.

B. Sectoral and Institutional Context

7. The transport sector institutional structure is complex. The sector is administered at the state level by the Ministry of Communications and Transport (MOCT)[3], and at the entity level, by separate Ministries of Transport and Communications (MOTC). Public companies are established in each entity and entrusted with the management of the road and railway assets and operations. BiH has no national transport strategy[4]. Each entity produced a number of different strategies, but these have had their limitations[5].

8. The key challenges in the transport sector are how to ensure that sparsely available resources are put in network enhancements which would provide uninterrupted, safe and cost-effective transport of goods and people. This calls for a focus on: (1) sustainable asset management and preservation; (2) adequate provision of safety; and (3) preemptive actions to ensure the network's resilience to extreme climatic events. These are the central elements of the Bank-

[3] The 2003 Law on Ministries established the MOCT and assigned to it responsibility for: (i) international and inter-entity transport links; (ii) the drafting of contracts, agreements and other acts that fall within the sphere of international and inter-entity transport; (iii) relations with international organizations whose functioning fall within international and inter-entity transport; (iv) the drafting and development of strategic planning documents that fall within international and inter-entity communications, transport, infrastructure and information technologies; and (v) issues of control for unimpeded transport in international transport, civil aviation and air-traffic control.

[4] The Government is currently in the process of adopting a national transport strategy.

[5] These documents generally amount to statements of broad policy objectives, followed by lists of prospective projects along particular corridors, routes, or for particular modes. What is generally lacking is a strategic attempt to identify future investment needs based on a robust assessment of current and future demand over an appropriate timeframe. Equally, there is usually no assessment of the synergistic impact of projects across the sector more generally, or more seriously, any prioritization of the proposed investment projects that is reflective of the fiscal resources available, from different potential sources, public and private, internal and external.

supported Transport Sector Modernization Program and its first phase project. Activities on road asset management and climate change will provide detailed knowledge about infrastructure needs and network vulnerabilities from extreme climate events and also better investment planning tools, thereby allowing data-driven and more efficient public spending. Even though the Reform Agenda does not have explicit transport sector goals, the improvement of public spending and performance of public enterprises is at its center.

9. The main trade corridor providing connectivity in BiH is Corridor Vc[6], which connects Budapest to the port of Ploče on the Adriatic Sea in Croatia via Sarajevo and runs 340km in BiH. Corridor Vc in BiH has recently been provisionally incorporated in the Trans European Transport Network's (TEN-T) Mediterranean Corridor, one of the TEN-T's nine Core Corridors. BiH is also traversed by a total of 470km of SEETO Comprehensive[7] Road network.

10. The poor accessibility to the coast significantly impedes the growth potential of the southern parts of BiH, especially tourism development which could potentially be the leading contributor to the local economy and a creator of jobs. BiH is almost landlocked, except for 20km of coastline on the Adriatic Sea, and is dependent on ports located in Croatia, creating constraints in access to markets. Neum is the only coastal city in BiH and although it is unlikely that it would substitute for Croatia's Ploce port as a trade gateway for BiH, it has tourism potential. Neum is accessible through the existing road on the route from Stolac. This road is of a poor standard and traffic bound for the Neum area normally chooses to follow the main road, M17 (E73), into Croatia and from there to Neum. This requires two border crossings for a one way trip and can entail extremely lengthy delays in the summer months for private traffic and at any time for commercial traffic.

B.1. Road Sector

11. The overall BiH road network totals approximately 24,600km. This comprises about 3,800km of main roads, 4,700km of regional roads and 16,100km of local roads. The density and quality of the entire BiH road network is the lowest in SEE[8]. Improvements in road quality are necessary, particularly for bridges and tunnels, due to historically insufficient routine and periodic maintenance, a continued poor enforcement of axle-load limits contributing to the premature decline of pavements, and a significant increase in traffic volumes.

12. The management of motorways and main roads is entrusted to entity companies: in FBH[9], these are: the Public Company Motorways of FBH - for motorways and high speed roads, and the Public Company Roads of FBH (PC Roads FBH) - for main roads. In the RS[10], these are: the Public Company Motorways of RS -for motorways, and the Public Company Roads of RS – for main and regional roads. Regional roads in BiH are managed in two different ways. In FBH, the cantons are responsible and management is entrusted to the cantonal Road Directorates or cantonal

[6] This corridor is part of the South East Europe Transport Observatory (SEETO)'s Comprehensive Network for both roads and rail. Construction of a motorway, several key sections of which have been financed by International Financial Institutions (IFIs), is considered a priority by the government to improve connectivity of BiH with neighboring countries and to enhance its potential for economic development.

[7] These include the coastal routes: Route 1 - Ploče (Croatia)-Neum-Dubrovnik (BiH-Croatia); Route 2a: Okučani (Croatia)-Banja Luka-Lašva; Route 2b: Sarajevo-Podgorica (Montenegro); and Route 3: Sarajevo-Užice (Serbia).

[8] Bosnia and Herzegovina. Systematic Country Diagnostic, 2015, World Bank.

[9] As defined in the Law on Roads in FBH, Official Gazette of FBH, 12/10, 16/10 and 66/13.

[10] As defined in the Law on Public Roads in RS, Official Gazette of RS, 89/13.

ministries. In RS, the Public Company Roads of RS is responsible for regional roads. Lastly, local roads in BiH are managed by municipalities in accordance with their administrative boundaries.

13. Road safety[11] is one of the major social and public health issues in BiH. In relative terms BiH is performing well compared to SEE averages, but the fatality rate (i.e. number of persons killed per capita) is still about 1.3 times higher than the EU average.[12] The authorities at the state and entity levels have pursued several policy and sector reforms to reduce the social and economic burden of road traffic accidents. These include the adoption of the State Law on Road Safety (2006), and the preparation of Strategies of Road Safety for 2008-2013 by both Entities. The drafting of the State Road Safety Strategy is ongoing. The improved legal and institutional framework provides a good basis for a further program of activities to address problems of road safety.

14. In FBH, main roads, relative to other road categories, are in a better condition[13], but due to the higher traffic they carry and also increased motorization[14], are in need of more frequent rehabilitation to ensure their longevity and decrease transport costs for freight and passengers. The road network in FBH spans 2,037km of main roads (managed by the PC Roads FBH), 2,607km of regional roads (managed by the cantons), and local roads managed by municipalities. At present, the revenues allocated to the road sector do not cover the full maintenance requirements of the main and regional network. The existing financial gap for maintenance of the main roads in FBH is about US$11.3 million per year, which is 24 percent of what is required to maintain the network in sustainable condition under the scenario where no new roads are added (more details in Annex 5). A modernization program, such as the one to be supported by the project, which focuses also on introducing a sustainable road financing system in parallel to the establishment of data-based investment planning practices in roads, is an opportunity to reduce this financing gap.

15. The Road Modernization Program (FBH RMP)[15] developed by FBH is an opportunity for a holistic approach to main road improvement as it involves network improvements (road, bridge and tunnel repairs), road safety interventions, and measures to improve the overall main road management. It is envisioned as a four-year €173 million Program to be financed by European Bank of Reconstruction and Development (EBRD) (€65 million), European Investment Bank (EIB) (€50 million), and the World Bank (€58 million). At the center of the program is the upgrade of the Neum-Stolac road, which is a domestic route of national importance for promoting trade and national tourism. This road provides a unique transport link to the coast not only for the communities in FBH, but also many of the communities in RS, as it is the only direct link to the BiH part of the Adriatic coast.

[11] Total number of road casualties (killed and injured) in 2014 was 7,106 (out of about 36,225 of total number of road accidents) down by 4.5% from 2011. The fatality rate in the same year was 7.7 persons killed per 100,000 inhabitants. Source: BIHAMK, Information on traffic accidents, their causes and effects in BiH.

[12] Road Safety Strategy Survey, SEETO, 2014.

[13] The quality of main roads in FBH is overall good – about 91 percent of the roads in sustainable (69 percent good and 22 percent fair) condition. Source PC Roads FBH.

[14] The total number of registered vehicles in FBH increased from 541,573 in 2009 to 554,823 in 2013. During the same period, cargo traffic (total number of tones carried) increased by 30 percent, reaching 4,000 thousand in 2013, while passenger traffic growth rates remained mainly flat around 20,000 thousand per year.

[15] EBRD would use parallel financing in the amount of €80.0 million to implement in two phases a certain proportion of the Program (i.e. flood damaged repair and construction of bypasses). About 40 percent will be jointly co-financed by EIB and the World Bank. EIB will finance the remaining portion using parallel financing. The design and economic viability of the Bank project are not dependent on the EBRD project or on the additional sections financed by EIB.

16. A study[16] commissioned by the PC Roads FBH to inform the preparation of the FBH RMP identified the key problems on the main roads as: inadequate road infrastructure on mountainous roads limiting visibility and safety; poor technical characteristics of roads (insufficient width, small curve radii and long curvature); lack of lanes for heavy vehicles; and complex geological and geotechnical characteristics on some roads leading to landslides. The proposed project not only includes investments to improve road characteristics, but also provides for capacity and knowledge building activities to ensure sustainable road asset management.

17. As part of the RMP, FBH seeks to strengthen the financial sustainability of the sector by improving the quality of public expenditure for carrying out construction, rehabilitation and maintenance of road infrastructure. Currently, the FBH government is considering alternatives for road financing systems that would provide additional resources to PC Roads FBH. PC Roads FBH receives a share of the following sources of revenue: (i) excise tax levy on sales of fuel and oil derivatives; (ii) vehicle registration fees; and (iii) road fees for foreign motor vehicles and trailers, special fees for service "help and information on roads", fees for extraordinary usage of public roads (extraordinary transport), fees payable on excessive use of public roads due to load and frequency of traffic, fees from using road land for advertising purposes and other relevant fees. Financial projections of PC Roads FBH' revenues and costs including debt servicing considered several scenarios out of which the best and worst case are presented in Annex 5 for the purposes of the financial assessment and modelling. On the expenditure side, the project aims to support PC Roads FBH in introducing tools and practices to improve investment planning in the enterprise, enhance spending efficiency and decrease the risks of unplanned repairs.

18. The overall old age[17] of bridges and tunnels necessitates a careful assessment and reconstruction effort, which takes climate change risks into consideration. Increased flood risk requires more resilient infrastructure. This poses challenges in terms of higher design standards and construction costs. Priorities for the bridges and tunnels investment program were identified based on a network wide survey carried out in 2013. The survey indicated that 137 bridges are in satisfactory condition since some were rehabilitated and reconstructed in the recent past, but 68 required urgent investment. Rehabilitation works on bridges in this project include replacing/augmenting the protection at bridge abutments and piers to ensure better climate resilience. Of the tunnels, 19 were found to be in satisfactory condition and seven were in urgent need of investment.

19. RS is also preparing a road modernization program, which is to be completed during the year. Among the planned activities are rehabilitation of about 500km of main and regional roads, including bridges and tunnels and repairs of roads damaged by the May 2014 floods.

20. As a party to the United Nations Framework Convention on Climate Change (UNFCCC), BiH communicated its Intended Nationally Determined Contributions (INDCs) prior to 21st annual Conference of the Parties (COP21). The proposed BiH[18] efforts for decreased generation of Greenhouse Gas (GHG) emissions are centered on energy efficiency and renewable energy and there are no actions verified at this stage on transport. Considering the vulnerabilities of road

[16] Study on road categorization in the Federation of Bosnia and Herzegovina, PC Roads FBH, IPSA, September 2014, page 29.

[17] According to the project documentation for the modernization program prepared by PC Roads FBH, the average ages of the bridges and tunnels on the main roads are 45 and 40 years, respectively (Road Modernization project, November 2014, page 2).

[18] http://www4.unfccc.int/submissions/INDC/Published%20Documents/Bosnia-Herzegovina/1/INDC%20Bosnia%20and%20Herzegovina.pdf

infrastructure experienced during the past events of intensive rainfall, the project includes a focus on climate resilience.

B.2. Railway Sector

21. The institutional structure of railways in BiH is complex and costly. It includes two vertically integrated railway companies, Željeznice Republike Srpske (Railway of Republic Srpska or ZRS) and Željeznice Federacije Bosne i Hercegovine (Railway of Federation of Bosnia and Herzegovina or ZFBH), a state level Railway Regulatory Body (RRB)[19] and Railways Public Corporation (RPC)[20]. Each of the two railway companies operates as both an infrastructure manager and railway transport operator on a total network of just over 1000km in length in both entities. The financial performance of both companies needs to improve as both incur financial losses annually, despite some financial contribution from the entities. This is a result of steadily growing operating costs (labor costs growing predominantly), low traffic and high rolling stock and infrastructure maintenance costs, and less than commensurate increases in revenues.

22. The railway network in BiH consists of two main strategic lines[21]. Despite the rehabilitation efforts, the overall condition of the railway network in BiH, similar to that in most of the SEE region, needs improvement and operational speeds are low, due to the existence of temporary speed restrictions, poor tunnel, track, and track alignment conditions, and the number and inadequate functioning of the crossings.

23. Both entities have identified the modernization of the railway companies as priority actions to improve the efficiency of public finance and also ensure good quality of railway services. EU accession is an additional driver for modernization: the country needs to strategically reform its railway sector, not only to adhere to the EU transport acquis, but also to prepare its railways for the competitive EU market. The entities are at different stages of the reform process. The BiH Reform Agenda highlights the importance of introducing strategies to address the loss making of state-owned enterprises, enhance their efficiency with a possibility for privatization and ensure public debt sustainability through clearance of existing arrears and not accumulating new ones. The Transport Sector Modernization Program (TSMP) is structured to allow for future support to rail modernization.

C. Higher Level Objectives to which the Program and Project Contribute

24. The TSMP is a right vehicle to support the modernization of the sector to improve the quality of transport services for businesses and citizens. The needs of the transport sector in BiH are large, spanning different modes and geographical areas of the country. Sector modernization and investment are at different stages of design and implementation. The end goal of the TSMP is to develop the strong transport system that BiH needs to reduce the economic distance to markets by expanding opportunities for trade, improving the competitiveness of national locations for production and distribution, and facilitating mobility.

[19] The main function of RRB is to issue licenses for operators and vehicles and safety certificates and establish harmonization with EU legislation.

[20] RPC is established to act as a coordinating body to allow smooth, safe and regular inter-entity and international railway traffic. In practice RPC has a limited role, as it is dependent for both resources and the agreement of the two railways to undertake any function.

[21] i) The North-South Bos.Samac-Doboj-Zenica-Sarajevo-Mostar-Capljina line located on Corridor Vc; and (ii) the West-East Dobrjlin–Bos.Novi-Banja Luka-Doboj-Tuzla-Zvornik line which is the railway line parallel to Corridor X.

25. The Systematic Country Diagnostic (SCD) identified poor transport infrastructure as one of the key constraints to inclusive growth and poverty alleviation, and infrastructure investments were recognized as a priority in the Country Partnership Framework (CPF) for 2016-2019. International comparators show that BiH is lagging in many transport indicators. At the same time, the country has an advantage in its geographic location and proximity to their biggest trade partner, the EU, and efforts to improve transport services could result in better utilization of this proximity. The CPF foresees investments in upgrading transport infrastructure which has the potential to help in alleviating poverty, boosting economic activity and reducing income inequality. In recognition of the negative effect which operations have on transport service quality, the CPF also highlights the need to focus on improving the operational and financial performance of public companies in the transport sector. The envisaged EIB-World Bank partnership for the first phase Project falls under one of the four guiding principles of the CPF, which is to strengthen partnerships with other development partners.

26. TSMP supports the twin goals of increasing shared prosperity and reducing poverty. Improved transport connectivity will facilitate the access to goods and services in domestic and international markets (the Neum-Stolac road from the first phase of the Program is an important route for regional and local connectivity, as it provides a unique access for otherwise more remote communities in both entities; the other project road sections are dispersed across FBH to ensure wider targeting), the creation of local jobs particularly in construction and tourism, efficiency gains in trade and production, development of regional value chains, and tapping into economies of scale.

27. The first phase of the TSMP, Federation Road Sector Modernization Project, supports one of the areas of engagement in the CPF, the improvement of road connectivity, as a precondition for increased competitiveness and better access to employment and commercial opportunities, especially for the poor and B40. A geographically dispersed investment across FBH's main roads is expected to increase competitiveness of cantons through improved access to markets and support to the rural economy.

28. The Federation Road Sector Modernization Project is consistent with regional and national policy objectives. BiH is on its path to EU accession and good progress has been made in meeting EU requirements for the transport sector. During the last 10 years, BiH has been actively involved in the SEETO cooperation, progressing from a pure orientation towards infrastructure development to more ambitious policy reforms. The Project will support BiH and SEETO in implementing some of the main tasks defined in the Regional Balkans Infrastructure Study update[22] and agreed in the Vienna Summit of Prime Ministers and Senior EC officials in August 2015[23]. The Project and the Program will also allow for the gradual development of a country-wide transport program, which could unlock the pre-accession assistance (IPA 2) for the sector. Last, the envisaged support to PC Roads FBH to improve its internal practice and available tools

[22] In an effort to further develop the SEETO Comprehensive Network, integrate it in the European Union's (EU) Trans-European Transport Network (TEN-T) and strengthen underlying transport planning systems, an Update of the Regional Balkans Infrastructure Study (REBIS), carried out first in 2003 was prepared. The report identifies key non-physical and physical transport and trade logistics barriers within the SEETO Comprehensive Network.

[23] Aiming to ensure efficient transport connectivity within the Western Balkans as well as with the EU as a key development goal identified in the joint Western Balkans 6 prime minister/EU conclusions, the Western Balkans Summit Vienna 2015 the EU and Western Balkans countries confirmed the three core network corridors to be extended for the Western Balkans to the TEN-T as well as priority projects along sections of these corridors and on other important sections of the core network for possible EU funding over the next six years.

to enhance network investment planning, means that the project will contribute to increased efficiency in public spending thereby supporting the achievement of the Reform Agenda.

II. PROGRAM AND PROJECT DEVELOPMENT OBJECTIVES

A. The Program Objective

29. The Program Development Objective of the TSMP is to upgrade transport infrastructure along priority transport links and to strengthen capacity for sustainable transport asset management. The Program is multiphase with a first phase including road sector modernization in FBH. Priority transport links to be considered for the program would be identified by each entity as part of their sector modernization programs, considering the expected economic rates of return.

B. The Project PDO

30. The Project Development Objectives of the First Phase of the TSMP (Federation Road Sector Modernization Project) are to improve road connectivity and safety for road users along project roads and to strengthen capacity for sustainable management of the main road network in the Federation of Bosnia and Herzegovina.

C. Project Beneficiaries

31. The primary group of the Project's beneficiaries includes road users. These are roughly estimated at 438,000 road users (of which 223,000 female)[24] who are expected to benefit from improved conditions and safety of the project roads through reduced travel time and vehicle operating costs. 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 benefit the wider population in BiH by providing much improved access to the Adriatic coast in BiH. In the medium to long run, this is expected to benefit all social groups, especially those located in rural areas, where many of the poor and B40 live, by connecting them to jobs, markets and services, including health and education. The Project could also provide a boost to tourism. Consumers and rural businesses will also benefit indirectly from the reduction in transport costs. The improved quality of infrastructure and reduction in transport cost would enhance the ability to export and help firms from BiH place themselves in European supply chains. Also, the project is expected to reduce the number of road crashes along the Project's road sections.

32. A secondary group of the project beneficiaries will include PC Roads FBH and the local construction industry. Through technical assistance PC Roads FBH will enhance its capacity to manage road assets sustainably, including road asset planning, budgeting, and execution and monitoring. The Project is expected to further boost the capacity of the local construction industry for managing and implementing contracts with an increased range of risks transferred to the private sector.

33. The global community also benefits from the expected reduction in GHG emissions due to the improved road condition and optimal speeds.

[24] The expected number of road users is the sum of annual average daily traffic in 2014 for all road sections included in the project.It is assumed that commuting nature of traffic is limited and beneficiaries are not double counted. The breakdown by gender is in accordance with the national average.

D. PDO Level Results Indicators

34. The Project PDO results will be measured through the following indicators: (i) main roads in a good and fair condition as a share of total main roads (improved road connectivity); (ii) vehicle operating costs for heavy vehicles on the Project's sections (improved road connectivity); (iii) number of road crashes with severe consequences along the Project's roads that will be reconstructed to eliminate black spots (improved safety); and (iv) a rolling program of road works prepared yearly by PC Roads FBH based on road asset management system (improved management of the main road network). The results framework will measure results of both the Bank and the EIB investments in this project.

III. PROGRAM AND PROJECT DESCRIPTION

A. Project Components

35. The First Phase of the TSMP supports the implementation of the FBH Road Modernization Program. The components of the Project include the following (a more detailed description of the components is provided in Annex 2):

36. **Component 1. Road Upgrade and Modernization** (total estimated cost including contingencies is €78.21 million jointly co-financed by IBRD and EIB). This component will finance civil works to: (i) complete the upgrade of the new route M17.3 Neum – Stolac road; (ii) construct third lanes for slow traffic on nine selected road sections; (iii) reconstruct/rehabilitate four selected road sections with partial axis correction; (iv) rehabilitate three selected tunnels; and (v) rehabilitate seven selected bridges. The scope of works under this Component covers nine out of ten cantons in FBH. The project roads/tunnels/bridge pavements have been designed for higher axle loads as specified in national design guidelines introduced in 2005.

37. **Component 2. Road Safety Interventions** (total estimated cost including contingencies is €2.76 million jointly co-financed by IBRD and EIB). This component will finance reconstruction of eight locations classified as black spots on main roads.

38. **Component 3: Improving Main Road Network Management** (total estimated cost €3.0 million 100 percent financed by IBRD). This component will strengthen main road management in FBH with a particular focus on the improving financial sustainability of investments, streamlining climate resilience and enhancing road safety. It will have three sub-components:

(i) **Sub-component 1: Enhancing road asset management system (RAMS):** This includes selective investments in road data collection equipment; upgrades of the current RAMS Information Technology (IT) systems and databases; and building internal practices to ensure a regular and cost-efficient system for road asset data management, including training of staff.

(ii) **Sub-component 2: Enhancing capacity to improve climate resilience of the road network:** This will provide support to understand better the vulnerability of the main road network to extreme climate events and identify technical solutions to improve climate resilience and will include vulnerability assessments, provision of equipment

and training of staff. Such knowledge would further improve asset management by introducing climate resilience measures and decreasing the frequency of unplanned repairs following extreme weather events.

(iii) **Sub-component 3: Strengthening capacity to mainstream road safety in the design and implementation of works:** This will include support to PC Roads FBH in preparation of road safety audit guidelines, carrying out an International Road Assessment Program (IRAP) road network survey, preparation of road safety investment plans, implementation of recommended measures, and training for staff.

39. **Component 4: Project Management and Implementation** (total estimated cost €6.88 million jointly co-financed by IBRD and EIB). This component will finance the supervision of all project civil works and capacity-building of PC Roads FBH through the provision of technical assistance, technical audits, monitoring for the Crnaja tunnel, and project financial audits.

40. **Component 5: Contingency for Disaster Risk Response (€0).** This component will support rapid response to disaster, emergency, and/or catastrophic events, as needed and will entail rehabilitation or reconstruction of roads damaged by a natural disaster and providing supervision support for carrying out said rehabilitation work. The provisional zero cost for this component will allow for rapid reallocation of loan proceeds from other components under streamlined procurement and disbursement procedures[25]. This would entail providing immediate and effective response to an eligible crisis or emergency. The results framework will be revised as part of Level II Restructuring. In addition the component will be monitored using appropriate indicators identified as part of the standard requirements to be in place before the triggering.

B. Project Financing

41. The Project will be jointly co-financed by EIB and the World Bank. The EIB Loan was approved on March 12, 2015, and was signed in February 2016 with ratification by the BiH Presidency expected by September 2016.

42. The World Bank will finance the Project through an IBRD Investment Project Financing Loan with a total amount of €58 million over a 5-year period. The loan will be made available to the BiH Ministry of Finance and Treasury and then made available to the FBH Ministry of Finance and further to PC Roads FBH for project implementation on the same terms and conditions as the BiH shall pay to the IBRD. The Bank will finance about 63.8 percent of the Federation Road Sector Modernization Project (the total cost is €90.855 million or about US$101.30 million[26]), while EIB will contribute €33 million (see Table 1 below). The Front End Fee will be financed out of the IBRD Loan proceeds, thereby making the total Project financing €91 million.

C. Project Cost and Financing

43. The total Project cost (without VAT) is €90.855 million. EIB will provide co-financing of civil works under Components 1 and 2 and supervision under Component 4 in the amount not exceeding €33 million.

[25] PC Roads-FBH will update the Project Operational Manual, upon the occurrence of a disaster, to define the modalities for immediate response to the disaster. In addition, the disbursements under this component will be made after the Borrower has declared a natural disaster in accordance with its relevant law.

[26] Based on a US Dollar-to-€ exchange rate of 0.8967 (May 31, 2016).

44. The joint co-financing of the Project provides PC Roads FBH the possibility to flexibly use proceeds from the EIB and IBRD loans to pay for the activities under the Project. As the IBRD loan disbursement percentage for components 1, 2 and 4 is set "up to 99 percent", PC Roads FBH will have to ensure that funds from each loan are used at least for the payment of one invoice from contracts signed under these components. Therefore co-financing shares could vary by subproject/contract. Component 3 will be fully financed by IBRD loan proceeds. The proceeds of the loan will be exclusive of any Value Added Taxes (VAT) and Customs duties.

Table 1: Project costs

Project Components	Project cost (€ million)	IBRD financing (percent of total)
1. Road Upgrade and Modernization (including contingencies)	78.21	Up to 99
2. Road Safety Interventions (including contingencies)	2.76	Up to 99
3. Improving Main Road Network Management	3.0	100
4. Project Management and Implementation	6.885	Up to 99
5. Contingency for Disaster Risk Response[27]	0	
Total Project Costs	90.855	
Total Project Costs	90.855	
Front-End Fees	0.145	100
Total Financing Required	91.0	63.8

D. Series of Program and Project Objective and Phases

45. This project is designed as the first phase of a series of projects (SOP) supporting BiH's long-term development of transport. The SOP approach allows for different transport modernization programs and interventions in BiH to start at different times when they are ready, through a series of sequential phases. In lieu of a policy document which highlights the BiH long–term transport program, this SOP will provide a framework for additional coordination between the transport sector modernization programs developed by the entities and district.

46. The Road Sector Modernization Project in FBH is the first phase of this program since FBH has demonstrated its readiness and secured EIB co-financing. A fruitful cooperation with RS has been maintained on the entity's plans to for railway modernization and discussions have been held regarding support to a road modernization program similar to that of FBH. The second phase of this SOP could involve interventions in any of these areas. The Public Company Motorways of FBH has also requested the Bank's support in motorway construction. Assuming at least three project phases, the investments are expected to reach about €200 million. Implementation of the first phase is planned for August 2016 to December 2021, and the second and third phases are planned to start in 2017/2018 as best suited to meet the client's demand.

47. The advantage of the SOP instrument is that it allows the Bank to provide support in a flexible manner and it is well-suited to support long-term reforms, with logical sequencing of

[27] Contingency for Disaster Risk Response will be kept zero while the government can utilize project budget for rapid response with agreed conditions subject to reallocation or additional finance later.

activities, when entities are ready for implementation. Each subsequent project in the SOP will be described in a separate Project Appraisal Document (PAD). Under the SOP approach, there is no commitment to the financing of ensuing phases. The focus on modernization will help build synergies between the different transport modes, enhance regional connectivity, and provide tools for more effective policy dialogue in transport overall in BiH.

E. Lessons Learned and Reflected in the Project Design

48. Recognizing the need for flexibility in supporting the transport modernization program, the Bank is taking advantage of the SOP lending instruments to allow for different modernization programs and interventions in BiH to start at different times when they are ready, through a series of sequential phases.

49. "Building back better/climate change adaptation". The road network has suffered substantially from increased rainfall and flooding, especially in May 2014. Considering the exposed vulnerabilities of the network, PC Roads FBH will ensure that proposed designs are informed by resilience considerations - e.g. including necessary activities for strengthening of structures and foundations of existing bridges if required for a higher water flow capacity and a higher number of years of recurring flood events (more details in Annex 6).

50. Safety standards will be directly incorporated in road designs. Bank-wide experience shows that it is not inconceivable for road rehabilitation to have an adverse impact on road safety due to the increased operating speeds on the improved roads. This Project is designed to ensure that road safety considerations are incorporated in road designs and will ultimately be institutionalized in design standards.

IV. IMPLEMENTATION

A. Institutional and Implementation Arrangements

51. FBH will enter into an implementation agreement with PC Roads FBH for purposes of transferring the loan funds and implementing the Project. PC Roads FBH will have the overall responsibility for coordination, planning, procurement, disbursement, auditing, Project level monitoring and evaluation, progress implementation reporting, and use of Project funds, all of which will be detailed in the Project Operational Manual (POM) to be prepared by PC Roads FBH before effectiveness.

52. The implementing agency will be PC Roads FBH, which already has the core members of the Project Implementation and Management Team (PIMT). Capacity of the PIMT in management, planning, monitoring and program administration has continuously been strengthened through earlier projects such as the Road Management and Safety Project (P071347) which closed in 2007 and the Road Infrastructure and Safety Project (P100792) closed in 2012.

53. PC Roads FBH will have the responsibility for the Project implementation and the PIMT will prepare reports to both the EIB and the World Bank on behalf of PC Roads FBH. The capacity of the PIMT will be further strengthened in certain areas (such as environmental management, contract management) as necessary through short term consultancies. During Appraisal, PC Roads FBH agreed to appoint a social safeguards and citizen engagement point person as part of the PIMT. The social safeguards expert will be responsible for the implementation of Resettlement

Policy Framework (RPF)/ Resettlement Action Plans (RAPs), including timely compensation and designing corrective actions when needed. The citizen engagement (CE) point person will oversee the operations of CE mechanisms, ensuring grievances are appropriately logged and timely responses are sent out.

B. Results Monitoring and Evaluation

54. The Project includes a set of monitoring indicators at the Project level. The chosen indicators might be replicated in subsequent phases of the Program if the project design is common to allow the effective measurement of the outcome and results of the project(s) and aggregated to provide results for the Program. The Project indicators together with the monitoring and evaluation arrangements are detailed in Annex 1. The overall responsibility for monitoring and evaluation (M&E) of outcomes of the first phase of TSMP will formally lie with PC Roads FBH.

55. During the preparation, the Bank team confirmed the strong capacity in PC Roads FBH for M&E. The PIMT within PC Roads FBH will prepare progress reports, using data based on their established monitoring practices with contributions from contractors, municipalities and the Beneficiary Feedback Commissions established for the Project. These reports will detail physical progress and progress with respect to the monitoring indicators in the results framework.

C. Sustainability

56. The Project is designed to support efforts to improve financial sustainability of the sector by improving the capacity of PC Roads FBH in investment planning and monitoring through an advanced road asset management system. In BiH, as in many other countries, with higher rates of economic growth, the demand for public expenditures for roads increases. This poses a significant challenge on how to ensure the efficient use of resources and obtain the desired benefits at the least life-cycle cost. Addressing this challenge requires further strengthening of the technical and managerial capacity of the respective road agencies in planning public expenditures for road construction and maintenance. The integrated road asset management system would allow for building-up strategies according to road class, condition, traffic and economic efficiency.

57. Cognizant of the potential risks to transport infrastructure from extreme climate events, a key element of Project preparation was to have sufficient attention paid to climate resilience considerations in the proposed works. The Project preparation included reviews to ensure that the designs (even though prepared following existing standards) include technical additions necessary for climate resilience (see Annex 6). The review was informed by the experience from the Damages and Losses Assessment carried out jointly by the EC, United Nations Development Program (UNDP) and World Bank (WB) following the May 2014 floods to define among other things the common deficiencies in design. Consequently, particular emphasis has been placed on: sufficient drainage; adequate slope protection measures (e.g. steel nets, gabion walls, etc.) where the widening of roads will take place into existing hill slopes with unfavorable geology, to prevent potential localized landslides and rock falls; in the tunnels – structural capacity increase of the existing lining with anchoring and various types of grouting (e.g. consolidation, contact, etc.); waterproofing of the tunnel structure; efficient water drainage of the rock mass around the tunnel; construction of secondary fibre-reinforced shotcrete lining; and construction of new pavement on concrete slab with side drainage and lighting works.

58. Looking forward, the Project will provide support to PC Roads FBH to better understand the vulnerability of the main road network to extreme climate events and identify technical solutions to improve climate resilience. Such knowledge would further improve asset management by introducing climate resilience measures and decreasing the frequency of unplanned repairs following extreme weather events.

V. KEY RISKS

A. Overall Risk Rating and Explanation of Key Risks

59. The overall risk for the Project is rated as moderate. The rating of political, governance and macroeconomic risks was made following the EU's announcement of its readiness to activate the Stabilization and Association Agreement (SAA) for BiH. There could be some delays if there are changes in the government, however, the risk of opposition to FBH Road Modernization Program is very low. The fiduciary risk is rated Substantial. The high number of works contracts and risk of cost underestimates and variations could result in delays in approvals and implementation. This risk is mitigated by conducting detailed technical reviews of the design for complex works. No specific difficulties have been identified for the road reconstruction and road safety improvement components. The detailed designs have been completed for almost all road sections; however there might be some implementation delays for the sections that still require completion of land acquisition and resettlement. As an extreme weather risk due to climate change is assessed as moderate, the Project included the contingency component five to support rapid response to disaster, emergency, and/or catastrophic events.

60. As an Environmental category A project, all safeguards due diligence documents have been prepared satisfactory to OP 4.01 on Environmental Assessment, including an Environmental and Social Management Framework (ESMF) for the overall program and an Environmental and Social Impact Assessment (ESIA) for the Neum-Stolac road section. All documents have been adequately consulted on and the final version of ESIA was disclosed both to the general public and the Board of Executive Directors on April 1, 2016, while for the overall Project, the final version of ESMF was disclosed on March 15, 2016.

VI. APPRAISAL SUMMARY

A. Economic and Financial Analysis

61. The economic analysis was carried out for all civil works to be financed under the Project, using the Highway Development and Management Model (HDM-4) (see Annex 5 for more details). The evaluation period is 20 years and discount rate is 10 percent. The overall Economic Internal Rate of Return (EIRR) of the Project is 24.6 percent and the total Net Present Value (NPV), at 10 percent discount rate, is €140.9 million. Sensitivity analysis shows that if construction costs were increased by 15 percent and road user benefits were decreased by 15 percent, an overall Project EIRR would be 22.0 percent, which confirms the satisfactory economic justification of the Project and the robustness of its results.

62. The estimation of carbon dioxide (CO2) emissions with and without the Project was incorporated into the economic analysis. Although the GHG emissions will be increasing over time, with and without the Project as the normal traffic will grow (excluding generated and induced

traffic), the improved road conditions will allow for a net reduction of CO2 emissions over the evaluation period. The results demonstrate that over the evaluation period, the total CO2 emissions will decrease from 1.32 million tons without the Project to 1.22 million tons with the Project (7.3 percent decrease) due to the improved ride quality and increase in vehicle speeds.

B. Technical

63. The design for the new Neum-Stolac road is found to be satisfactory. The current road, whilst the pavement is in good condition, has an extremely torturous horizontal alignment with a radius less than the absolute minimum for a road of this standard. It is a two way road 3.0 m wide thus allowing only one way movement of traffic. This necessitates the off line solution currently being developed by FBH. 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. The new pavement will consist of three layers of asphalt totaling 170 mm and two crushed stone layers of smaller and larger aggregate sizes totaling 630 mm. Design speed is 80 km per hour with a minimum horizontal radius of 220m and maximum vertical gradient of 5 percent and 2.5 percent cross fall. The total length of the road is approximately 24.8 km, and it includes various underpasses, intersections and one 975 m long tunnel.

64. Standard repair works are planned for rehabilitation of bridges and tunnels. The design reviews suggest to pay particular attention to strengthening the foundation of bridge abutments against scouring by the rivers water. Additionally, the designs for tunnels require sufficient prior investigation and monitoring for the sections that might be prone to landslides in order to ensure a long-term technical solution which secures safety of traffic.

C. Financial Management

65. An assessment of the financial management (FM) capacity was carried out by the World Bank in October 2015, during pre-appraisal mission and thereafter updated in March 2016. The assessment concluded that FM arrangements within the PIMT established under the PC Roads FBH are acceptable to the Bank and that the overall financial management risk is moderate with the application of the mitigation measures.

66. The PIMT will maintain a financial management system acceptable to the World Bank. The Project financial statements and PC Roads FBH Financial Statements, will be audited by independent auditors acceptable to the Bank and on terms of reference acceptable to the World Bank. The annual audited financial statements and the audit reports will be provided to the World Bank within six months of the end of each fiscal year. The PIMT shall also prepare and furnish to the World Bank not later than forty five (45) days after the end of each calendar quarter, interim unaudited financial reports for the Project covering the quarter, in form and substance satisfactory to the Bank. However in order to improve the existing financial management arrangements an action plan was agreed with the PIMT. The following action plan is proposed.

Action	Deadline	Responsible
Renewal of FM software license or upgrade of the existing FM Information System	3 months from the Project effectiveness	PC Roads FBH

D. Procurement

67. It has been agreed that in order to speed up the procurement processes the Bank will be responsible for the supervision of the Borrower's administration of procurement and will act as the coordinator for all matters related to procurement. Bank procedures will be followed for components jointly co-financed by the Bank and the EIB. All the relevant procurement processes will use the Bank's Standard Bidding Documents or, as the case may be, national bidding documents acceptable to the Bank, including without limitation, the fraud and corruption provisions incorporated in said Bidding Documents. The World Bank will be responsible, for prior- reviewing procurement documents for all those contracts as so identified in the Procurement Plan, and post reviewing on yearly basis a sample of those contracts subject to the World Bank's post-review as set forth in the Procurement Plan. The arrangement for the World Bank's procurement review role for the entire Project was defined between EIB and the World Bank and will be made official through the signing of Principles of Collaboration between the World Bank and the EIB. The agreement is currently in final review and available in Annex 7.

68. Each procurement activity will be prepared, tendered and administered by a group of experts (staff of PC Roads FBH) from different divisions. However, the lead coordinating role will be that of the PIMT.

69. Procurement under the proposed Project will be carried out in accordance with the Bank "Guidelines: Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" published in January 2011, revised in July 2014 (Procurement Guidelines) and "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" published in January 2011, revised in July 2014 (Consultant Guidelines) and with the latest Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits.

70. An assessment of the capacity of PC Roads FBH to implement procurement activities was carried out in October 2015. The team assessed the risks that may negatively affect the ability of the PC Roads FBH to carry out procurement processes. The assessment also revealed the organizational structure to implement this Project. The findings of this assessment, the risks, and the proposed mitigation measures are described in Annex 3.

71. Although the PC Roads FBH have extensive experience in implementing Bank-funded and other donor-funded projects, given the risks identified, the sector and the country dynamics, as well as the complexity and nature of the Project, the overall risk for procurement is considered "Substantial".

E. Social (including Safeguards)

72. The Project's social impacts are expected to be largely positive. The Project is expected to have a particularly positive impact on the population of Neum and Stolac and municipalities in FBH and the RS close to these towns. The improved connectivity will facilitate closer access to jobs, services and stimulate trade, tourism and linked services. The elimination of blackspots on selected roads will reduce the severity of traffic accidents.

73. The Social Assessment (part of the ESIA) is gender informed and the Project includes actions to encourage equal distribution of Project benefits between men and women. The ESIA showed that local unemployment figures have low gender disparity (slightly higher male

unemployment in Neum and vice versa in Stolac). Interventions aimed at promoting local hire (e.g., local information campaigns and obliging contractor to prepare a staff engagement plan) will be designed to ensure that both women and men are aware of Project related employment opportunities and principles of non-discrimination are followed during recruitment. The project specific RPF outlines steps to be taken to ensure that expropriation activities are sensitive to women's needs by recording women's status (in regards to ownership especially), ensuring women's participation in consultations, gender-disaggregating grievances and integrating gender impacts in RAP monitoring. Both genders and vulnerable groups will be actively encouraged to participate in the consultations during Project preparation and implementation to ensure that their needs are reflected in the Project design.

74. The Project triggers Bank's Involuntary Resettlement policy OP 4.12 because the construction of a new road Neum-Stolac, additions of new slow lanes along certain sections, changes of alignment and axis corrections, and reconstruction of black spots will result in land acquisition and minor resettlement activities related to construction works. Since the new Neum-Stolac road is being built parallel to an existing road, no access limitations for residents is expected during construction. To address potential adverse impacts of expropriation, two RAPs and a Project-specific RPF were prepared and disclosed in-country (March 14, 2016), and at InfoShop (March 21, 2016). The first RAP covers the new Neum-Stolac road and concludes that required land acquisition mainly affects privately owned land. For the construction of the Neum-Stolac road, 356[28] landowners and users will be affected by permanent land acquisition. The second integrated RAP covers 9 sub-sections with completed project design and available land ownership data. The integrated RAP concludes that on 9 sub-sections 189 people (owners and users) will be affected by permanent land acquisition and access restrictions, 6 households will be affected by physical displacement and 2 businesses will need to be moved. Another 17 businesses will likely experience access restrictions. The RPF covers sub-sections without complete project designs in compliance with the OP 4.12. Once remaining detailed designs are available, the client will also prepare RAPs in accordance with the RPF for any section requiring land acquisition/resettlement.

75. Expropriation was already completed for sections of Neum-Stolac. PC Roads FBH prepared a Resettlement Review and Audit (RRA) to determine compliance with World Bank requirements for expropriations that were already undertaken. The RRA concluded that the completed expropriation process had been conducted entirely in line with the relevant local legislation (i.e., Law on Expropriation of FBH) and no serious or major gaps in terms of OP 4.12 compliance were identified. No retroactive measures will be necessary.

76. *Citizen engagement*. The Project will develop two complementary and coordinated beneficiary feedback mechanisms, which will be in place during implementation and will consist of: 1) the Central Feedback Desk (CFD) - a project level mechanism which collects grievances related to all sub-projects managed at the level of the implementing agency FBH-Roads and; and 2) Beneficiary Feedback Commissions (BFC) – an additional mechanism available only for municipalities with high levels of expropriation (Neum and Stolac). The CFD will respond to grievances related to all project sub-sections received through various channels (e.g. contractor, email, phone, etc.), and will keep a central grievance log, which include monitoring data on grievances managed by the BFC. The BFC is an additional contract point for addressing grievances only related to the Neum-Stolac sub-project. The BFC will provide on-site visits for claims related

[28] There is a high average number of owners per land plot due to the fact that the land registry in FBH has not been updated for a long period of time.

to expropriation and civil works as needed. It will consist of community representatives, local government and implementing agency staff. The implementing agency will develop a short guide to ensure coordination among the two grievance mechanisms and brochures are being distributed in Neum and Stolac to inform about the availability and function of the BFC.

77. To ensure that the issues raised are appropriately addressed and closed-out, the results of BFCs (i.e. the number and type of comments/grievances received and beneficiaries' level of satisfaction with responses given) will be made available to the public. The effectiveness of the beneficiary feedback mechanisms to provide timely response will be monitored at the Project level, see BF indicator incorporated into the Project M&E framework (see Annex 1).

F. Environment (including Safeguards)

78. The environmental aspects of the Project are addressed through two series of due diligence documents. The first series is associated with the overall Project targeting reconstruction of tunnels, bridges, and junctions or road sections with black spots, and widening of roads to add a third lane - to be implemented throughout the FBH, and as such the environmental impacts will vary based on local conditions of the project site. At this point in time, majority of the identified environmental impacts (dust and noise generation, clearing of vegetation, waste management, construction site organization, traffic management, etc) can easily be mitigated through application of sound construction practices, while the major emphasis is placed on the management of excavated material and borrow pits, that need to be remediated upon their closure, in line with all environmentally sound considerations. The second issue related to the environment is the road leading from Neum to Stolac, which is located in the karst southern part of the country. The karst itself presents specific geological formations and although there are no major environmental impacts anticipated strong supervision on the ground needs to be in place for issues that may occur during works - chance finds including archeological sites and UXO, excavated material from the Zaba tunnel that will almost entirely be used for embankments. Considerations are also to be made to the relative proximity of the Hutovo blato nature reserve and Ramsar site (at the road section closest to the park, this is some 1.7 km distance from Cerovica), although the ESIA does not envisage any impacts to the nature reserve.

79. The Project is categorized as Environmental category A, due to the nature of works and triggering of OP 4.01 on Environmental Assessment and OP 4.04 on Natural Habitats. The overall Project comprises a number of interventions on rehabilitation and reconstruction of roads (axis correction, widening, road safety interventions, etc.) and road structures (bridges and tunnels), but also on new construction of the Neum-Stolac road. A number of environmental impacts related to rehabilitation and reconstruction (i.e. dust, noise, waste management, worker safety, traffic management, etc.) are included in the ESMF that has been prepared for the overall Project, and disclosed on February 25, 2016 with public consultations on March 7, 2016 in Sarajevo. The final ESMF has been disclosed by the Borrower on March 15, 2016. The ESMF is in place since not all sections would have been identified by Project Appraisal. The ESMF also includes three template ESMPs for representative works rehabilitation of the bridge, adding a third/slow lane and construction of a roundabout at an existing junction.

80. For the works related to new construction of Neum-Stolac section under Component 1, an Environmental Impact Study (EIS) has been already prepared by independent consultants and approved by FBH Government. However, the EIS has some specific gaps (e.g. on social aspects)

and also requires a general update, as the document was prepared in 2009. The revisions are reflected in a newly prepared ESIA that has been disclosed on February 18, 2016 on PC Roads FBH website and in local communities, with public consultations held on March 02, 2016 in the village of Hutovo which is located half-way between Stolac and Neum. The complete package of the Project documents has been disclosed by the Borrower on April 01, 2016 and through the World Bank Infoshop on the same date. The Executive Summary of the ESIA for Neum-Stolac has been submitted to the World Bank Board of Directors on the same date.

81. During the preparation of three template ESMPs it was noted that there is an overall lack of site specific data included in the ESMP to adequately reflect environmental conditions and potential risks at a given site. A similar issue was registered in the preparation of the Neum-Stolac ESIA, where the data available was not of sufficient quality to be included in a site-specific ESMP satisfactory to the World Bank. As such, the site-specific ESMP will build on the findings and recommendations of the EIS and ESIA, while including site-specific details. This ESMP, to be cleared by the World Bank team, shall be developed and serve as a condition to the start of works, while preferably it should be completed prior to the development of the Bidding Documents for the actual works, therefore creating a contractual obligation for the contractor to implement the ESMP.

82. The safeguards arrangement (both social and environmental) described above will be applicable to all activities jointly co-financed by the Bank and EIB regardless the size of co-financing shares.

G. World Bank Grievance Redress

83. Communities and individuals who believe that they are adversely affected by a WB supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate Grievance Redress Service (GRS), please visit http://www.worldbank.org/GRS. For information on how to submit complaints to the World Bank Inspection Panel, please visit www.inspectionpanel.org.

Annex 1: Results Framework and Monitoring

Country: Bosnia and Herzegovina

Project Name: Federation Road Sector Modernization Project (P152406)

Results Framework

Project Development Objectives

PDO Statement

The Program Development Objective of the Transport Sector Modernization Program (TSMP) is to upgrade transport infrastructure along priority transport links and to strengthen capacity for sustainable transport asset management.

The Project Development Objectives of the First Phase of the TSMP (the Federation Road Sector Modernization Project) are to improve road connectivity and safety for road users along project roads and to strengthen capacity for sustainable management of the main road network in the Federation of Bosnia and Herzegovina.

These results are at	Project Level

Project Development Objective Indicators

		Cumulative Target Values					
Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target
Roads in good and fair condition as a share of total classified roads (Percentage) - (Core)	91.00	91.00	92.00	93.00	93.00	93.00	93.00

Size of the total classified network[29] (Kilometers - Sub-Type: Supplemental) - (Core)	2037.00	2037.00	2037.00	2037.00	2037.00	2037.00	2037.00
Vehicle operating costs for heavy vehicles along the Project's sections, in Euro per vehicle-km (Number)	1.54	1.54	1.51	1.50	1.48	1.46	1.46
Road crashes with severe consequences (Number)	28.00	28.00	28.00	20.00	16.00	14.00	14.00
Rolling program of road works prepared yearly based on RAMS information (Yes/No)	No	No	No	Yes	Yes	Yes	Yes

Intermediate Results Indicators

		Cumulative Target Values					
Indicator Name	Baseline	YR1	YR2	YR3	YR4	YR5	End Target

[29] While the project does not have activities that would affect the total length of the main road network, the indicator 'Size of the total classified network' was added to the result framework automatically as a supplemental core indicator to have a reference point for monitoring the achievement of the core indicator 'Roads in good and fair condition as a share of total classified roads'.

Roads constructed, non-rural (Kilometers) - (Core)	0.00	0.00	6.00	25.00	33.00	33.00	33.00
Roads rehabilitated, Non-rural (Kilometers) - (Core)	0.00	10.00	50.00	80.00	100.00	178.00	178.00
Reconstructed black spots on the main road network (Number)	0.00	0.00	0.00	4.00	6.00	8.00	8.00
Main roads for which condition data is annually collected for RAMS (Kilometers)	0.00	0.00	0.00	2037.00	2037.00	2037.00	2037.00
iRAP completed on main roads in FBH (Yes/No)	No	No	No	Yes	Yes	Yes	Yes
Climate resilience practices applied in road management (Text)	Climate resilient system for RAMS is not developed	Climate resilient system for RAMS is not developed	Climate resilient system for RAMS is not developed	Climate resilient system for RAMS is developed	Climate resilient system for RAMS is developed and operational	Climate resilient system for RAMS is developed and operational	Climate resilient system for RAMS is developed and operational
Direct project beneficiaries	437,709	454,342	471,607	489,528	508,130	527,000	527,000

(Number)							
of which female (Percentage - Sub-Type: Breakdown)	51	51	51	51	51	51	51
Responsiveness rate to grievances and comments from citizens (Percentage)	0.00	100.00	100.00	100.00	100.00	100.00	100.00
Local jobs created (Number)	0.00	20.00	20.00	20.00	20.00	20.00	100.00

Indicator Description

Project Development Objective Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Roads in good and fair condition as a share of total classified roads	Percentage of the total classified road network in the project area that is in good and fair condition depending on the road surface and the level of roughness. Classified roads are the roads that have been included in the roads legislation as public roads. Please note that this indicator requires supplemental information Supplemental Value: Total classified network in the project area (KM). The Supplemental value is the total classified network in the Project area. Classified roads are the roads that have been included in the roads legislation as public roads. The indicators calculates the percentage of the main roads managed by FBH-Roads in good and fair condition. The target value is achieved as a result of Project interventions, excluding the construction of third lanes (component 1.2).	Annually	PC Roads FBH annual reports	PC Roads FBH
Size of the total classified network	Classified roads are the roads that have been included in the roads legislation as public roads.	NA	PC Roads FBH annual reports	PC Roads FBH
Vehicle operating costs for truckers along the Project's	This indicator measures road user costs (vehicle operating costs) along the roads to be constructed under the Project. Vehicle	at Project completion	Project Progress Report	PC Roads FBH

sections, in Euro per vehicle-km	operating costs are expressed in Euro per vehicle-kilometer. This indicator will be measured at the end of the Project and will be monitored annually for roads reconstructed under the Project.			
Road crashes with severe consequences	This indicator measures the number of road crashes on Project roads that involved a serious injury or fatality. This indicators counts only accidents on the Project roads that will be reconstructed to eliminate black spots (component 2)	Annually	PC Roads FBH annual reports	PC Roads FBH
Rolling program of road works prepared yearly based on RAMS information	This indicator measures if the Rolling program of road works for PC Roads FBH has been prepared based on RAMS information.	Annually	Project Report	PC Roads FBH

Intermediate Results Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Roads constructed, non-rural	Kilometers of non-rural roads constructed under the Project. Non-rural roads are roads functionally classified in various countries as Trunk or Primary, Secondary or Link roads, or sometimes Tertiary roads. Typically, non-rural roads connect urban centers/towns/settlements of more than 5,000 inhabitants to each other or to higher classes of road, market towns and urban centers. Urban roads are included in non-rural roads.	Annually	Project Report	PC Roads FBH

Roads rehabilitated, Non-rural	Kilometers of all non-rural roads reopened to motorized traffic, rehabilitated, or upgraded under the Project. Non-rural roads are roads functionally classified in various countries as Trunk or Primary, Secondary or Link roads, or sometimes Tertiary roads. Typically, non-rural roads connect urban centers/towns/settlements of more than 5,000 inhabitants to each other or to higher classes of road, market towns and urban centers. Urban roads are included in non-rural roads.	Annually	Project Report	PC Roads FBH
Reconstructed black spots on the main road network	This indicator measures how many blackspot were reconstructed on the main road network.	Annually	Project report	PC Roads FBH
Main roads for which condition data is annually collected for RAMS	Length (km) of main roads for which condition data is annually collected and entered in RAMS.	Annually	Project report	PC Roads FBH
iRAP completed on main roads in FBH	iRAP completed on main roads in FBH.	Annually	Project report	PC Roads FBH
Climate resilience practices applied in road management	Includes vulnerability assessment completed, implementation of selected priority climate resilience measures on road network.	Annually	Project report	PC Roads FBH
Direct project beneficiaries (number), of which female (percentage)	This indicator measures the number of direct project beneficiaries and among them, percentage of female beneficiaries.	Annually	Project report	PC Roads FBH
Responsiveness rate to grievances and comments from citizens	Grievances and comments registered by Central Feedback Desk related to Project activities that are addressed within the announced time-frame (%).	Quarterly	Central Feedback Desk log	PC Roads FBH

Local jobs created	Number of jobs created for men and women during Project planning and construction (to measure direct job opportunities).	Quarterly	Data collected by contractors and municipality	PC Roads FBH

Annex 2: Detailed Project Description and Map of Project

COUNTRY: Bosnia and Herzegovina

1. The Project Development Objectives of the First Phase of the TSMP (Federation Road Sector Modernization Project) are to: improve road connectivity and safety for road users along project roads and to strengthen capacity for sustainable management of the main road network in the Federation of Bosnia and Herzegovina.

2. The Project will support the Government of FBH in the implementation of its Road Modernization Program. The proposed Project will finance the construction of a new route Neum - Stolac, rehabilitation of tunnels and bridges, construction of third lanes and road safety interventions in FBH. It will also strengthen the road asset management capacity of PC Roads FBH with a view to ensure improved efficiency of spending (through better planning, preventive investments) and consideration of road safety. The components of the Project include the following:

3. **Component 1. Road Upgrade and Modernization** (total estimated cost including contingencies is €78.21 million to be jointly co-financed by IBRD and EIB). This component will finance civil works to:

(a) To complete the upgrade of M17.3 Neum – Stolac road (estimated cost about €40.86 million). The improvement of the road between Neum and Stolac has the overall objective of improving the access between Neum on the Adriatic coast of BiH and the rest of the country. The component will finance civil works and structures to upgrade a part of the existing road with the change of its alignment as well as technical parameters (i.e. road class, design speed, lane width). There are several underpasses on the project road section that requires improvement, including short tunnel Oštrovac with length of 190 meters and tunnel Žaba with length of 900 meters. The construction of the road will be implemented in three stages: (i) Stari Neum- Broćanac 11.3 km length of which approximately 5.3 km has already been constructed and require only the top asphalt layer. The remaining 6 km will be tendered shortly (Babin Do-Brocanac). The detailed design is completed for this section so the procurement of works can be started in May/June 2016; (ii) Broćanac - Hutovo – Cerovica about 12 km length, and (iii) Cerovica – Drenovac about 13 km length. The detailed design for the remaining two sections is currently being finalized.

(b) To construct additional lanes for slow traffic on selected road sections (estimated cost about €18.77 million). The Project will finance civil works to construct additional third lanes for the movement of slow vehicles. The following sections were selected for financing under this sub-component:

(i) Ripač - Vrtoče 2, M5 (length 5.2 km)

(ii) Gornje Bravsko – Ključ, M5 (length 4.8 km)

(iii) Donji Vakuf 1 – Turbe, M5 (length 5.0 km)

(iv) Posušje - Široki Brijeg, M6.1 (length 17.0 km)

(v) Bos.Petrovac – Pasjak, M14.2 (length 19.3 km)

(vi) Pasjak – Resanovci, M14.2 (length 38.2 km)

(vii) Priboj 2 - Simin Han 1, M18 (length 2.0 km)

(viii) Livno - Šuica – Kupres, M15 (length 9.3 km)

(ix) Gromiljak – Blažuj, M5 (length 5.0 km)

Out of the total nine sections, detailed design is completed for the first 6 sections, and for the rest – the design preparation is ongoing.

(c) To reconstruct/rehabilitate selected road sections with partial axis correction (estimated cost about €6.27 million). The Project envisages the improvement of pavement quality and road capacity on the following sections:

(i) Bihać 4 – Ripač, M5. The scope of works includes the construction of missing 820 m long section of main road M5 at the entrance to city Bihać for rerouting of traffic, especially heavy vehicles from city streets, thereby enhancing safety and capacity. Prerequisite for the sub-project is completion of expropriation process. The section length is 1.0 km.

(ii) Jajce jug – Donji Vakuf 1, M5. The project section is in need of axis correction along its 8 km stretch as well as pavement improvements. Additionally, it is planned to implement reconstruction of tunnel Skela with length of 107 m, construction of tunnel Vrba with length of 210 m and construction of tunnel Torlakovac with length of 140 m located along the project section. The section length is 32.0 km.

(iii) Vitalj – Vlasenica, M19.2. The project section is in poor condition and requires rehabilitation of pavement and drainage. The section length is 12.0 km.

(iv) Ustikolina – Goražde 8, M20. The scope of works include rehabilitation of pavement, reconstruction of intersection at the entrance to industrial city Vitkovici, reconstruction of pedestrian path in Goražde and rehabilitation of drainage system. The section length is 22.1 km.

A detailed design is ready only for the first road section. The preparedness of other sections is either at the stage of preliminarily design or concept.

(d) To rehabilitate selected tunnels (estimated cost about €10.2 million). The project scope includes rehabilitation of tunnels lining and pavement, reconstruction of drainage and strengthening of waterproofing on the following tunnels: (i) Pelagićevo - Srebrenik (Ormanica, 16+210, build in 1968); (ii) Topčić polje - Lašva (Vranduk II, 7+416, build in 1973) and (iii) Konjic - Jablanica 1 (Crnaja, 15+082, build in 1953). Detailed design is completed for Vranduk and Crnaja tunnels and is ongoing for Ormanica tunnel. Due to the complexity of the Crnaja tunnel and need for additional investigations, this design will be further worked on.

(e) To rehabilitate selected bridges (estimated cost about €2.11 million). The project scope includes rehabilitation of the seven selected bridges:

(i) Bridge over Sana River, Ključ. The bridge is located at the exit of the town of Ključ. Its length is 69.00 m. It is planned to repair the bridge structure, replace the bridge equipment and improve the embankment around its abutments.

(ii) Bridge over Pliva River, Jajce. The Project will finance the repair of the composite steel bridge structure, replacement of the bridge equipment and the improvement of the embankment around its abutments.

(iii) Bridge Komar. The bridge is located at the slope of the mountain Komar. Its length is 50.00 m. It is planned to reinforce and protect the bridge span structure, replace the bridge equipment and improve the embankment around its abutments.

(iv) Bridge over Vrbas River, Bugojno. The bridge is located in the town of Bugojno. Its length is 68.8 m. The Project will finance the construction of a new part of the bridge span structure, including piers and abutments in order to increase the width of bridge from 6.9 m to 9.3 m, the replacement of bridge equipment and the formation of the riverbed and the embankment in the vicinity of its abutments.

(v) Bridge over Bosna River, Bosna IV. The bridge is located in front of the entrance of the tunnel Vranduk. Its length is 150 m. It is planned to rehabilitate the bridge structure, by constructing a new deck, repairing the piers, replacing bridge equipment and improving the road embankment at the location of the abutments.

(vi) Bridge over Bregava River, Tasovčići. The bridge is located between the settlement of Nerezi and Klepci. The total length is 46.1 m. It is planned to repair the bridge span structure, replace the bridge equipment and improve the embankment around abutments.

(vii) Bridge over Ljubina River. The bridge is located in proximity to the settlement of Srednje. Its length is 30 m. The project design includes demolishing of the bridge deck and construction of a new one, the installation of the bridge equipment and the formation of the embankment around its abutments and the riverbed arrangement at the bridge location.

Detailed design for all the bridges is completed.

4. PC Roads FBH is carefully designing the works for the bridges and tunnels to ensure adequate assessment of vulnerabilities and provision of more resilient infrastructure. For the tunnels, the design mainly including repairs and reinforcements will ensure sufficient permanent lining structural capacity and waterproofing combined with the strengthening of pavement bearing capacity and drainage, in combination with slope stability measures where required. For the bridges, the design including repairs, additions and reconstructions will ensure sufficient structural capacity of the static bridge structures, decks with related traffic furniture and foundations in combination with appropriate earthworks and river training works at the abutment locations to ensure resistance to increased river flow capacities and scouring effects.

5. **Component 2. Road Safety Interventions** (total estimated cost, including contingencies is €2.76 million to be jointly co-financed by IBRD and EIB). This component will finance reconstruction of locations classified as black spots on the main roads. The selection was done in accordance with the Study on rehabilitation priorities of dangerous spots on main roads in FBH. As a result, eight localities was prioritized and included in the Project. Those are:

(i) Skokovi – Srbljani, M4.2. There are multiple accidents at the location Mala Lisa, where existing streets connect to the main road M4.2. The Project will finance reconstruction of this intersection.

(ii) Granica BiH/RH (Izačić) – Bihać, M5. Intersection of main road M5 and regional road R403 is not satisfactory shaped, posing a significant threat to the safety of pedestrians. The Project envisages reconstruction of this intersection and the access roads as well as construction of bus stops.

(iii) Tarčin – Konjic, M17. Common cause of accidents on this section is skidding due to excessive speeds while entering curves as well as insufficient width of the curves. The Project will finance reconstruction of this 800 m section to gain necessary curve width.

(iv) Potoci - Mostar centar, M17. Subject intersection is located on the main road M17 and represents the main entrance to the city of Mostar from the north. It is planned to reconstruct this intersection to improve its geometrical characteristics.

(v) Mostar centar – Gnojnice, M17. Subject intersection is located on the main road M17 and it is a south connection to the city of Mostar. It is planned to reconstruct this intersection to improve its geometrical characteristics.

(vi) Tasovčići – Čapljina, M17. Subject intersection is located on main roads M17 and M6, and it represents the main entrance to the city of Čapljina. The Project will finance reconstruction of the intersection and construction of an underpass for pedestrians.

(vii) Šićki Brod 3 - Živinice1, M18. This intersection is in the proximity of the Husino settlement, connecting the local roads for Husino and Kiseljak, the southern entrance to Tuzla and the main road M18. The project envisages reconstruction of this intersection into drop shaped roundabout.

(viii) Vitalj – Olovo, M18. Subject intersection is on the main road M18 that connects to regional road R467. It is planned to reconstruct this intersection and build an underpass for pedestrians.

Detailed designs are being finalized for the first 7 locations. The project documentation is not ready for the last location.

6. **Component 3: Improving Main Road Network Management** (total estimated cost €3.0 million, 100 percent financed by IBRD). This component aims to strengthen road management in FBH with a particular focus on the financial sustainability of investments, streamlining climate resilience and road safety. Activities in this component will aim to equip PC Roads FBH with the necessary skills and tools (i.e. measurement equipment, decision-making system for road asset management, etc.) to plan, execute and monitor investment expenditures in a cost-efficient manner thereby also enhancing the financing sustainability in the main roads management. It will have three sub-components:

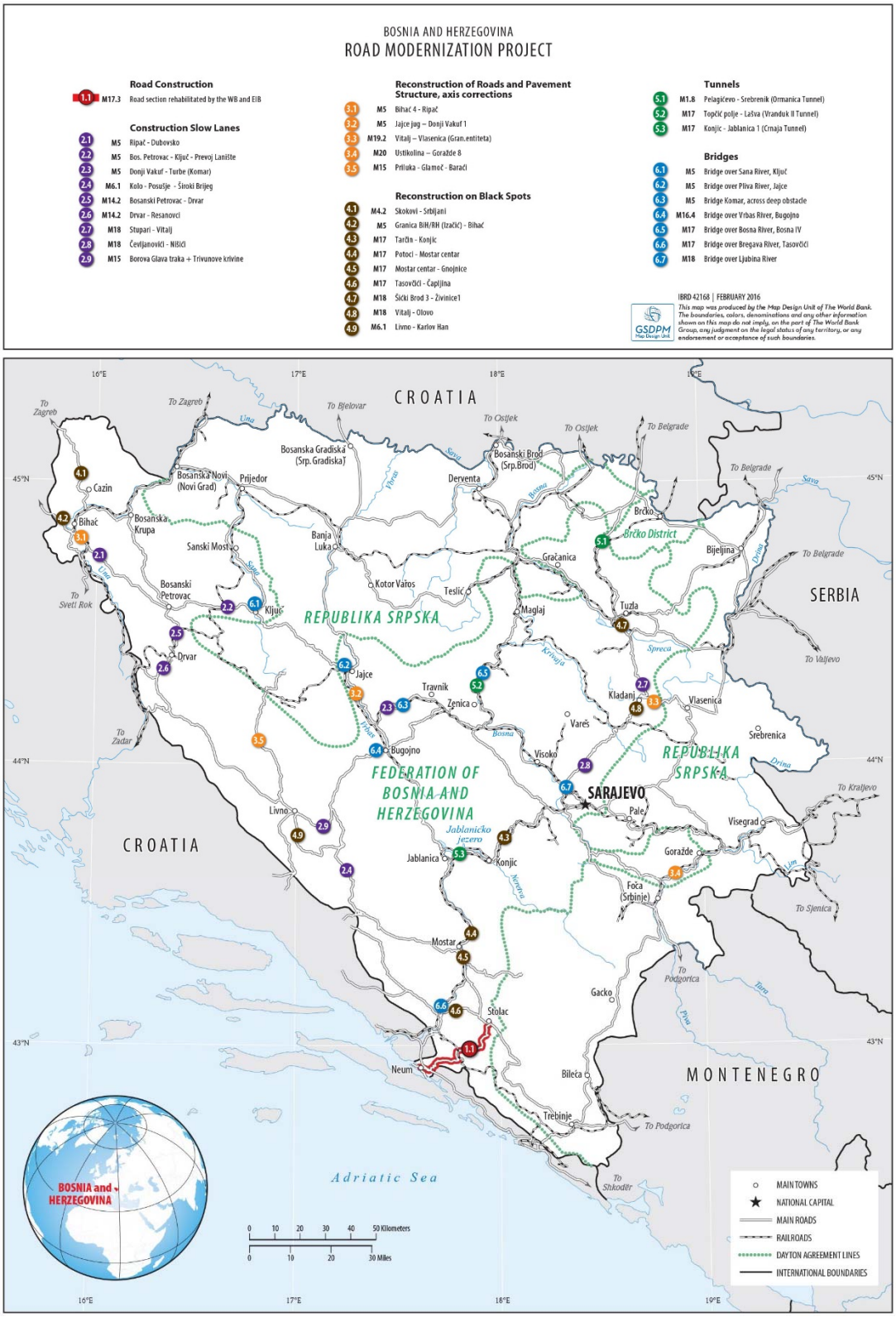
(iv) **Sub-component 1: Enhancing road asset management system:** This will include selective investments in road data collection equipment; upgrades of the current RAMS IT systems and databases; and building internal practices to ensure a regular and cost-efficient system for road asset data management, including training of staff. Project activities will build on earlier institutional capacity activities in road asset management planning implemented under the WB financed Road Infrastructure and Safety Project closed in 2008.

(v) **Sub-component 2: Enhancing capacity to improve climate resilience of the road network:** This will aim to improve the capacity of PC Roads FBH to move to a more proactive approach to climate resilience, rather than a responsive approach. This will provide support to understand better the vulnerability of the main road network to extreme climate events and identify technical solutions to increase climate resilience. The goal would be to identify the present risks on the network; define typical technical solutions for small scale failure, which would be carried out under routine and winter maintenance; define a technical approach for site-specific vulnerabilities and provide tailor-made solutions with detailed geotechnical investigations and provide a guidance on treatment of land-slides. Such knowledge would further improve asset management by introducing climate resilience measures and decreasing the frequency of unplanned repairs following extreme weather events. The Project would support improving resilience capacity also by strengthening knowledge on risk assessment and technical solutions through targeted training for PC Roads FBH.

(vi) **Sub-component 3: Strengthening capacity to mainstream road safety in the design and implementation of works:** This will include support to PC Roads FBH in preparation of road safety audit guidelines, implementation of recommended measures, and training for staff (and also other institutions and private sector), particularly targeting the identification of engineering countermeasures. Additionally, this component will include activities to carry our iRAP survey of the main road network to inform the preparation of a road safety investment plan.

7. **Component 4: Project Management and Implementation** (total estimated cost €6.88 million to be jointly co-financed by IBRD and EIB). This component will finance the supervision of civil works and capacity-building of PC Roads FBH through the provision of technical assistance, carrying out the annual financial audits of the Project, technical audits and training as necessary.

8. **Component 5: Contingency for Disaster Risk Response** (€0). A provisional zero amount component is included under this Project that will allow for rapid reallocation of loan proceeds during an emergency, under streamlined procurement and disbursement procedures. In the event of an emergency, the contingent component would be implemented following the rapid response procedures under OP/BP8.00. In addition to reallocation of funds from other Project components, the contingent component may also serve as a conduit for additional funds to be channeled to the Project in the event of an emergency. With regard to the activities to be financed under this component, this will entail rehabilitation or reconstruction of roads damaged by a natural disaster and providing supervision support for carrying out said rehabilitation work. In addition, the disbursements under this component will be made after the government has declared a natural disaster in accordance with its relevant law.


BOSNIA AND HERZEGOVINA
ROAD MODERNIZATION PROJECT
Road Construction
1.1 M17.3 Road section rehabilitated by the WB and EIB
Construction Slow Lanes
2.1 M5 Ripač - Dubovsko
2.2 M5 Bos. Petrovac - Ključ - Prevoj Lanište
2.3 M5 Donji Vakuf - Turbe (Komar)
2.4 M6.1 Kolo - Posušje - Široki Brijeg
2.5 M14.2 Bosanski Petrovac - Drvar
2.6 M14.2 Drvar - Resanovci
2.7 M18 Stupari - Vitalj
2.8 M18 Čevljanovići - Nišići
2.9 M15 Borova Glava traka + Trivunove krivine
Reconstruction of Roads and Pavement Structure, axis corrections
3.1 M5 Bihać 4 - Ripač
3.2 M5 Jajce jug – Donji Vakuf 1
3.3 M19.2 Vitalj – Vlasenica (Gran.entiteta)
3.4 M20 Ustikolina – Goražde 8
3.5 M15 Priluka - Glamoč - Baraći
Reconstruction on Black Spots
4.1 M4.2 Skokovi - Srbljani
4.2 M5 Granica BiH/RH (Izačić) - Bihać
4.3 M17 Tarčin - Konjic
4.4 M17 Potoci - Mostar centar
4.5 M17 Mostar centar - Gnojnice
4.6 M17 Tasovčići - Čapljina
4.7 M18 Šicki Brod 3 - Živinice1
4.8 M18 Vitalj - Olovo
4.9 M6.1 Livno - Karlov Han
Tunnels
5.1 M1.8 Pelagićevo - Srebrenik (Ormanica Tunnel)
5.2 M17 Topčić polje - Lašva (Vranduk II Tunnel)
5.3 M17 Konjic - Jablanica 1 (Crnaja Tunnel)
Bridges
6.1 M5 Bridge over Sana River, Ključ
6.2 M5 Bridge over Pliva River, Jajce
6.3 M5 Bridge Komar, across deep obstacle
6.4 M16.4 Bridge over Vrbas River, Bugojno
6.5 M17 Bridge over Bosna River, Bosna IV
6.6 M17 Bridge over Bregava River, Tasovčići
6.7 M18 Bridge over Ljubina River
IBRD 42168 | FEBRUARY 2016
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GSDPM Map Design Unit
CROATIA
SERBIA
MONTENEGRO
REPUBLIKA SRPSKA
FEDERATION OF BOSNIA AND HERZEGOVINA
SARAJEVO
Adriatic Sea
Cazin
Bihać
Bosanska Krupa
Bosanski Novi (Novi Grad)
Prijedor
Sanski Most
Banja Luka
Bosanska Gradiška (Srp. Gradiška)
Bosanski Brod (Srp.Brod)
Derventa
Brčko
Brčko District
Bijeljina
Gračanica
Tuzla
Maglaj
Teslić
Kotor Varoš
Bosanski Petrovac
Ključ
Drvar
Jajce
Travnik
Zenica
Kladanj
Vlasenica
Srebrenica
Vareš
Visoko
Bugojno
Livno
Jablanica
Konjic
Pale
Višegrad
Goražde
Foča (Srbinje)
Mostar
Gacko
Stolac
Neum
Bileća
Trebinje
To Zagreb
To Bjelovar
To Osijek
To Belgrade
To Sveti Rok
To Zadar
To Kraljevo
To Sjenica
To Podgorica
To Shkodër
To Višegrad
BOSNIA and HERZEGOVINA
0 10 20 30 40 50 Kilometers
0 10 20 30 Miles
MAIN TOWNS
NATIONAL CAPITAL
MAIN ROADS
RAILROADS
DAYTON AGREEMENT LINES
INTERNATIONAL BOUNDARIES

Annex 3: Implementation Arrangements

COUNTRY: Bosnia and Herzegovina

Project Institutional and Implementation Arrangements

1. This Project is designed as part of a time-series of projects (SOP) supporting a borrower's long-term development program. The time-series approach allows that not both entities would need to start at the same time, but rather each would begin when ready, through a series of sequential phases. The Project in FBH is the first phase since FBH has demonstrated readiness and willingness to participate through: (i) a formal request and expression of interest to join the program; (ii) activities designed to meet the PDO of the program; and (iii) the preparation (including advanced preparation with the EIB) of detailed designs and related safeguards documents.

2. Each subsequent project in the SOP will be described in a separate PAD. The individual projects, candidates for receiving the Bank support under the SOP is required to meet certain eligibility criteria described above. The SOP is not restricted only to road projects only, but open to other transport sub-sectors (e.g. railways). Under the SOP approach, there is also no commitment to the financing of ensuing phases.

3. The Project with the total financing of €91 million equivalent will be jointly co-financed by the Bank (IBRD) and EIB. The EIB will provide financing of civil works under Components 1 and 2 and supervision under Component 4 in the amount not exceeding €33 million. Co-financing shares could vary by subproject/contract. The Borrower will finance design, land expropriation and Project Implementation and Management Team PIMT operational and staffing costs (these expenditures are not included in the total Project cost). The IBRD share of the Project would be financed through a €58 million equivalent Investment Project Financing (IPF) made available to the BiH Ministry of Finance and Treasury and then made available to FBH Ministry of Finance and later to PC Roads FBH for Project implementation on the same terms and conditions as BiH shall pay to the IBRD.

4. FBH will enter into an implementation agreement (Sub-agreement) with PC Roads FBH for purposes of transferring the loan funds and implementing the Project. PC Roads FBH will have the overall responsibility for coordination, planning, procurement, disbursement, Project level monitoring and evaluation, progress implementation reporting, and use of Project funds, all of which will be detailed in the Project Operational Manual (POM) to be prepared by PC Roads FBH before effectiveness.

5. The implementing agency (IA) will be PC Roads FBH, which already has the core members of the PIMT. Capacity in management, planning, monitoring and program administration has continuously been strengthened through earlier projects such as the Road Management and Safety Project (P071347) which closed in 2007 and the Road Infrastructure and Safety Project (P100792) that closed in 2012. FBH Entity through PC Roads FBH will have the overall responsibility for coordination, planning, procurement, disbursement, Project level monitoring and evaluation, progress implementation reporting, and use of Project funds. These will be detailed in the POM, to be finished by PC Roads FBH before effectiveness.

Financial Management, Disbursements and Procurement

Financial Management

6. The overall financial management (FM) risk for the Project is substantial before mitigation measures, and with adequate mitigation measures agreed, the financial management residual risk is moderate. The Inherent Risk of the Project is rated as moderate, while the controls risk is rated as substantial before the mitigation measures. After the introduction of mitigation measures such as having a FM software license renewed for the PIMT, as well as having a private audit firm to audit the entire Project and PC Roads FBH, the overall FM risk is moderate. The POM will include the main aspects of Project Financial Management, preparation of which is an effectiveness condition.

7. **Budgeting and Counterpart Funding Arrangements**: The PIMT has acceptable planning and budgeting capacity. Budgeting is based on the procurement plan and approved by project management in the respective line ministry/agency. Budgets are entered in the accounting system. Variances of actual versus budgeted figures are reported, monitored and explained.

8. There is no government counterpart funding envisaged for this Project. However there is a co-financing of the Project envisaged by the loan agreed with the EIB.

9. *Staffing*: The staffing of the PIMT is appropriate and there is skilled staff within PC Roads FBH engaged with prior experience in the World Bank funded projects. The terms of references for the FM staff will be appended to the Project Operational Manual (POM).

10. *Accounting and Maintenance of Accounting Records*: Accounting policies and procedures are appropriate. For Project accounting simple cash accounting method will be used. There will be a POM describing appropriate procedures and policies. Accounting system used for all projects accounting and reporting is assessed to be reliable. For the previous Bank funded projects such as Road Infrastructure and Safety Project and Road Management and Safety Project PC Roads FBH used an acceptable FM software for which the license should be renewed in order to be able to use it for the new Project. It is assessed to provide accurate and reliable accounting information. Accounting data is backed up on weekly basis on external drives and on servers. Accounting policies and procedures to be applied for Project accounting include the following major assumptions and principles:

(a) cash accounting as the basis for recording transactions;

(b) The Project will include all co-financing and parallel financing, (EIB, EBRD);

(c) appropriate analytical accounting records exist by contracts and payments;

(d) reporting done in currency of the loan (reporting currency);

11. *Internal Controls and Internal Audit*: PC Roads FBH and specifically PIMT has adequate internal controls for the Project, including regular reconciliation of bank accounts, adequate segregation of duties, proper accounting policies and procedures and monthly reconciliation of disbursement summaries of the World Bank with Project accounting records is performed.

(a) There are regular reconciliations: accounting records are reconciled with the excel Project data for every withdrawal application, Designated Account reconciliation is also performed with treasury records (where applicable), client connection figures are reconciled monthly with the Project accounting records. PIMT maintains a list with all the payments made out of the Designated Account, which is used for reconciliation.

(b) The access to the accounting software are password protected; there is only accounting staff access to the systems. The journal entries cannot be altered once they are made. Any changes can be done only with reversal of the initial journal and posting the correct one. The software enables automatic generating of reports that can be used for reporting purposes.

12. *Periodic Financial Reporting*: The PIMT shall prepare and furnish to the Bank not later than forty five (45) days after the end of each calendar quarter, interim unaudited financial reports for the Project covering the quarter, in form and substance satisfactory to the Bank.

13. The IFRs will include the following reports stated in the currency of the loan:

(a) Statement of Sources and Uses of Funds;

(b) Uses of Funds by Project Activity;

(c) Balance Sheet;

(d) Statement of Designated Account; and

(e) Cash Flow Forecast for the following 2 reporting periods

14. *External Audit*: The Ministry of Finance and Treasury shall be responsible for appointing Project audit services, while PC Roads FBH is in-charge of contracting it's company-wide audit services. The PIMT will be responsible for the timely compilation of the annual Project and PC Roads FBH financial statements (FS) for the independent external audit. Project financial statements (FSs) will be audited by an independent auditor acceptable to the Bank. Each audit of the FSs shall cover the period of one (1) fiscal year commencing with the fiscal year in which the first withdrawal was made under the Loan. The terms of reference for the audit have been agreed with the Bank, and will be attached to the Minutes of Negotiation. In addition, the auditors are expected to deliver management recommendation letters in relation to the Project and PC Roads FBH audits. Each management recommendation letter will identify internal control deficiencies and accounting issues, if any.

Audit report	**Due date**
Project financial statements (PFS)The PFS include (i) Statement of Sources and Uses of Funds; (ii) Uses of Funds by Project Activity; (iii) Balance Sheet; and (iv) Statement of Designated Account and (v) Cash Flow Forecast for the following 2 reporting periods	Within six months of the end of each fiscal year and also at the closing of the Project
Entity financial statements The financial statements will include the full set of financial statements as per the applicable International Financial Reporting Standards (IFRS)	Within six months of the end of each fiscal year

15. The audited Project and PC Roads FBH audit Financial Statements will be made publicly available in a timely fashion, and in a manner acceptable to the World Bank. Such reports will be published on PC Roads FBH web site one month after the Bank has sent official audit acknowledgement letter accepting such reports.

16. There are no overdue or due audit reports for the projects in BiH.

Disbursements

17. *Flow of Funds and Disbursement*: There will be one Designated Account opened for the Project by the Ministry of Finance and Treasury (MoFT) in a financial institution acceptable to the World Bank. The currency of the account will be EUR.

18. Disbursement from the Loan Account will follow the traditional method through: reimbursements, advances and direct payments. Authorized and approved withdrawal applications will be sent to the Bank using the e-disbursement facility.

19. Supporting documents for disbursements will be the agreed formats of IFRs. The original documents will be retained by PC Roads FBH and made available to the Bank during Project supervision. For requests for Direct Payments, PC Roads FBH will submit records evidencing eligible expenditures (e.g., copies of receipts, supplier invoices). The ceiling will be determined based on cash flow forecast for the following two quarters as reported in the regular quarterly Interim Financial Report.

20. The proceeds of the loan will be exclusive of any Value Added Taxes (VAT) and Customs duties. Such taxes are to be funded from own sources of funding and then refunded back from the Indirect Tax Authority (ITA) in line with the provisions of the Law on VAT and Law on Customs Policy. This was a specific requirement set by PC Roads FBH provided that such approach is more convenient and cost effective for PC Roads FBH and such approach was discussed and agreed with the ITA.

21. There is no government contribution under the Project envisaged.

Financial Management Action plan

Action	Deadline	Responsible
Renewal of FM software license or upgrade of the existing FM Information System	3 months from the Project effectiveness	PC Roads FBH

22. *Implementation Support and Supervision Plan*: The Bank will apply a risk based approach in undertaking Project supervision activities that will include reviews of periodic reports, review of audited annual audited financial statements together with auditors' management recommendation letters; monitoring implementation of agreed remedial actions; and addressing emerging issues in collaboration with implementing units.

23. *Contract management*: The PIMT will maintain technical and financial database of all Project contracts. The technical database shall be updated by procurement staff on a regular basis. Such database will have available all information on contracts, any annexes which were concluded as well as any payments made up to date. The FM manager maintains an overview of all Project-related payments and thus controls and is able to avoid any overpayments.

24. *Use of country systems*: The Project will use elements of country systems such as: staffing, planning and partially internal controls.

Procurement

25. *Procurement arrangements for the jointly co-financed Project*: It has been agreed that in order to speed up the procurement processes, the Bank will be responsible for the supervision of the Borrower's administration of procurement and will act as the coordinator for all matters related to procurement. Bank procedures will be followed for components jointly co-financed by the World Bank and EIB. It was agreed that all the relevant procurement processes will use the Bank's Standard Bidding Documents or, as the case may be, national bidding documents acceptable to the Bank, including without limitation, the fraud and corruption provisions incorporated in said Bidding Documents. The World Bank will be responsible, for prior- reviewing procurement documents for all those contracts as so identified in the Procurement Plan, and post reviewing on yearly basis a sample of those contracts subject to the World Bank's post-review as set forth in the Procurement Plan. The arrangement for the World Bank's procurement review role for the entire Project was defined between EIB and the World Bank and will be made official through the signing of Principles of Collaboration between the IBRD and the EIB, currently in final review and available as Annex 7.

26. Procurement under the proposed Project will be carried out in accordance with the Bank "Guidelines: Procurement of Goods, Works, and Non-Consulting Services under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" published in January 2011, revised in July 2014 (Procurement Guidelines) and "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits & Grants by World Bank Borrowers" published in January 2011, revised in July 2014 (Consultant Guidelines) and with the latest Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits.

27. An assessment of the capacity of PC Roads FBH to implement procurement activities was carried out in October 2015. The team assessed the risks that may negatively affect the ability of the Company to carry out procurement processes. The assessment also revealed the organizational structure to implement this Project. There are seven divisions within the company responsible for various areas, including: design, construction, maintenance, traffic safety, procurement, financial management and others. The PIMT will be responsible for fiduciary arrangements under the Project. The PIMT is staffed with a Head of Division, a Senior Procurement Specialist, a Senior Engineer, an Environmental Expert and a Financial Assistant. The Procurement Specialist and the Engineer have been with the company since 2003 working on implementation of donor-funded operations. The Procurement Specialist worked on several Bank-funded operations and has experience with all procurement/selection methods and activities of different size, nature and complexity.

28. For the purposes of this Project, each procurement activity will be prepared, tendered and administered by a group of experts (staff of PC Roads FBH) from different divisions. The main role in the implementation of this Project will be that of the PIMT which will supplement and enhance the existing skill mix in the company's operational departments and work in tandem with other relevant departments. In the case of civil works contracts, the finalization of the Bidding Documents and the administration of the tender will be the responsibility of the PIMT.

29. As part of the capacity assessment the team identified the following risks for which mitigation measures were proposed.

30. *Risk*: One of the issues identified during the implementation of the previous Bank-funded operation was the underestimation of costs for various works which led to significant cost overruns and delays in the procurement of civil works.

31. *Mitigation Measure*: The PIMT needs to finalize the detailed designs for works to be performed based on which the costs of investment activities will be updated. The Bank will provide continuous technical guidance.

32. *Risk:* Potentially more variations and adjustments than normal due to the quality of the designs, bill of quantities and specifications.

33. *Mitigation Measure*: The Bank team will conduct the technical review of the detailed designs, bidding documents, as well as site supervision.

34. *Risk:* Packaging of contracts decided based on the availability of detailed designs.

35. *Mitigation measure:* During the preparation of the Procurement Plan, the Bank team will guide the PIMT on the packaging of contracts to ensure that for those sections where it is technically justified, contracts are packaged to include all types of activities (roads, tunnels and bridges).

36. *Risk:* Delays in contract completion due to the weak quality of designs. Quality of construction may be uneven or not up to the required standards due to capacity and experience of contracts.

37. *Mitigation Measure:* The Bank team will conduct the technical review of the detailed designs, as well as will carry out regular supervision of sites. For large or complex contracts, the Bank will advise the PIMT to conduct the prequalification of bidders to ensure, in advance of bidding, that invitations to bid are confined to qualified firms.

38. Although the PC Roads FBH have extensive experience in implementing Bank-funded and other donor-funded projects, given risks identified, the sector and country dynamics, as well as the complexity and nature of the Project, the overall risk for procurement is considered "Substantial".

39. *Procurement of goods, works, and non-consulting services*: Works procured under the Project would include, among others: (i) upgrade of the main road M17.3 Neum – Stolac in three stages: (1) St.Neum-Broćanac, 6 km; (2) Broćanac - Hutovo – Cerovica, approx. 12 km length, and (3) Cerovica – Drenovac, approx. 13 km length; (ii) construction of passing lanes for slow traffic on selected road sections; (iii) reconstruction/rehabilitation of selected road sections with partial axis correction; (iv) rehabilitation of selected tunnels; (v) rehabilitation of selected bridges; and (vi) reconstruction of intersections classified as black spots on the main roads. Under International Competitive Bidding (ICB) procedures, procurement will be done using the Bank Standard Bidding Document for Procurement of Small Works. For complex procurement, the Bank Standard Bidding Document for Procurement of Works will be used. Goods and non-consulting services contracts below US$100,000 and works contracts below US$200,000 may be procured through Shopping procedure in accordance with the provisions of paragraph 3.5 of the Procurement Guidelines.

40. *Procurement of consulting services*: Consulting services under the Project are of various size and complexity. These aim at strengthening road management in FBH with a particular focus on sustainability of investments and road safety. It will include work to (i) enhance road asset management system (i.e. selective investments in building internal practices to ensure a regular and cost-efficient system for road asset data management, including training of staff), and (ii) strengthen capacity of PC Roads FBH to streamline road safety in its work (i.e. preparation of road safety audit guidelines and training for staff at the enterprise). The Project will also finance the supervision of civil works and capacity building for PC Roads FBH through the provision of technical assistance, carrying out the annual financial audits of the Project, monitoring Project activities, as well as technical audits. Selection of consulting firms will be done using the Bank

Standard Request for Proposals. The employment of technical experts will be conducted through the selection of individual consultant in accordance with the provisions of the Section V of the Consultant Guidelines. In case the service is required from a consultancy firm, Quality- and Cost-Based Selection (QCBS) method will be applied in accordance with the Section II of the Bank's Consultants Guidelines. For the contracts below US$300,000 equivalent Selection Based on Consultants' Qualification method may be used in accordance with paragraph 3.7 of the Consultants' Guidelines. The short list can comprise entirely national consultants, if the contracts with the firms are below US$300,000 equivalent.

41. *Retroactive financing*: The Borrower expressed interest in using retroactive financing to allow PC Roads FBH to start procurement of works on the Neum-Stolac once the loan agreement with EIB is effective (expected in September 2016). Retroactive financing may be provided when: the activities financed by retroactive financing are related to the Project development objective and are included in the Project description and the payments are for items procured in accordance with the applicable Bank procurement procedures. The total amount of retroactive financing is 20 percent or less of the Bank Loan amount for payments made by the Borrower not more than 12 months before the date of the loan signing.

42. *Filing and records keeping*: Filing of procurement related documents, and records keeping under the Project, will be done by PC Roads FBH.

43. *General Procurement Notice (GPN)*: The GPN will be prepared and submitted to the Bank after negotiations. The Bank will arrange for its publication in UN Development Business online (UNDB online) and on the Bank's external website. The GPN will contain information concerning the Borrower, amount and purpose of the loan, scope of procurement reflecting the Procurement Plan (PP), the name, telephone (or fax) number, and address(es) of the Borrower's agency responsible for procurement, and the address of a widely used electronic portal with free national and international access or website where the subsequent Specific Procurement Notices will be posted.

44. *Procurement Plan*: The Borrower will develop an initial PP for the entire Project scope consistent with the implementation plan, which will provide information on procurement packages, methods and Bank review method. Since this would cover the entire Project completion period, it will be tentative. However, a firm PP for first 18 months of the Project should be prepared and this plan will be agreed upon between the Borrower and the Bank Project team at Negotiations. The PP will be updated in agreement with the Bank Project team annually or as required to reflect the actual Project implementation needs and improvements in the implementing agency institutional capacity.

45. *Procurement Supervision*: Routine procurement reviews and supervision will be conducted by the Procurement Specialist. In addition, one supervision visit is expected to take place per year during which ex-post reviews will be conducted. The Bank Project team recommends to post-review at least 20 percent of contracts subject to post review. Procurement documents will be kept readily available for Bank's ex-post review during supervision missions or at any other point in time. A post review report will be prepared and shared with the IA.

46. *Procurement/Selection Method and Prior-Review Thresholds*: Considering the risk assessment rating, it is proposed that the thresholds for procurement activities financed under the Project are set in accordance with the latest ECA Regional Procurement Thresholds. The thresholds will be

specified in the Procurement Plan developed by the Borrower. The procurement methods and procedures applying to component 5 will be detailed in the Project Operational Manual.

47. Major Procurement Packages:

Description	**Type**	**Cost Estimate ('000 EUR)**	**Procurement/ Selection Method**	**Review**	**Planned date (tender launch)**
St.Neum - Babin Do - Brocanac L = 6,5km with Tunnel Oštrovac 0,22km and Tunnel Žaba 0.9km	Works	17.7	ICB	Post	May 2016
Broćanac - Hutovo - Cerovica, L = 11,2 km	Works	11.0	ICB	Prior	March 2017
Cerovica - Drenovac, L = 15,3 km	Works	12.79	ICB	Prior	Novembe r 2016
Supervision of Works	Consulting	2.94	QCBS	Prior	July 2016
Supervision of Works (Road Stari Neum – Drenovac)	Consulting	2.04	QCBS	Prior	July 2016
Monitoring (Tunnel Crnaja)	Consulting	0.25	QBS	Post	June 2017

Environmental and Social (including safeguards)

Environmental:

48. The implementation of the mitigation and monitoring measures, as set forth in the Stolac-Neum ESIA and the site specific ESMPs as prepared under the ESMF, will be implemented by the contractor hired to do the works. For monitoring purposes licensed companies, agencies or laboratories will need to be subcontracted. This is particularly important since major baseline information needs to be collected prior to the actual start of works. The supervision arrangements will be carried out by the hired supervision company that will include environmental specialists in their teams, and the PC Roads FBH environmental specialist and the PIMT Project-hired environmental specialist will also conduct supervision.

49. PC Roads FBH will be responsible for completing Environmental and Social Management Plans (ESMPs) as set forth in the ESMF document that includes actual preparation of the document, data collection and synthesis and disclosure and public consultations in the local areas. In the event of a back log in ESMP preparation PC Roads FBH can engage an external consultant, if needed. PC Roads FBH will ensure that all licenses and permits are obtained prior to start of

works, and where possible the procedures required under the World Bank operational policies, local environmental laws and/or requirements of other financing institutions will be streamlined into one, following the most stringent environmental requirements. For the site-specific ESMP on the section Neum-Stolac, the PC Roads will ensure that the ESMP is prepared in line with the Category A requirements, i.e. by an independent consultant.

50. *Social*: The Project's social impacts are expected to be largely positive. The Project is expected to have a particularly positive impact on the population of Neum and Stolac and municipalities in FBH and RS close to these towns. The improved connectivity will facilitate closer access to jobs, services and stimulate trade, tourism and linked services. The upgrade of selected roads will reduce risk of traffic accidents. Local communities, especially in Neum, which is currently isolated from rest of the country by two borders, will benefit from better access to health facilities and social infrastructure (e.g., higher education) available in nearby cities. The road will improve accessibility to agricultural land, a natural reserve (Hutovo Blato) and numerous cultural sites.

51. The Social Assessment (part of the Environmental and Social Impact Assessment (ESIA)) is gender informed and the Project includes actions to encourage equal distribution of Project benefits between men and women. The ESIA showed that local unemployment figures have low gender disparity (slightly higher male unemployment in Neum and vice versa in Stolac) Interventions aimed at promoting local hire (e.g., local information campaigns and obliging contractor to prepare a staff engagement plan) will be designed to ensure that both women and men are aware of Project related employment opportunities and principles of non-discrimination are followed during recruitment. The Project specific RPF outlines steps to be taken to ensure that expropriation activities are sensitive to women's needs by recording women's status (in regards to ownership especially), ensuring women's participation in consultations, gender-disaggregating grievances and integrating gender impacts in RAP monitoring. Both genders and vulnerable groups will be actively encouraged to participate in the consultations during Project preparation and implementation to ensure that their needs are reflected in the Project design.

52. The Project triggers the World Bank's Involuntary Resettlement policy OP 4.12 because the construction of a new road Neum-Stolac, additions of new slow lanes along certain sections, changes of alignment and axis corrections, and reconstruction of black spots will result in land acquisition and minor resettlement activities related to construction works. Since the new Neum-Stolac road is being built parallel to an existing road, no access limitations for residents is expected during construction. To address potential adverse impacts of expropriation, two Resettlement Action Plans (RAPs) and a Project-specific Resettlement Policy Framework (RPF) were prepared and disclosed in-country (March 14, 2016) and at InfoShop (March 21, 2016). The first RAP covers the new Neum-Stolac road and concludes that required land acquisition mainly affects privately owned land. For the construction of the Neum-Stolac road, 356[30] landowners and users will be affected by permanent land acquisition. The second integrated RAP covers 9 sub-sections with completed project design and available land ownership data. The integrated RAP concludes that on 9 sub-sections 189 people (owners and users) will affected by permanent land acquisition and access restrictions, 6 households will be affected by physical displacement and 2 businesses will need to be moved. Another 17 businesses will likely experience access restrictions. The RPF covers sub-sections without complete project designs in compliance with the OP 4.12. Once

[30] There is a high average number of owners per land plot due to the fact that the land registry in FBH has not been updated for a long period of time.

remaining detailed designs are available, the client will also prepare RAPs in accordance with the RPF for any section requiring land acquisition/resettlement.

53. Expropriation was already completed for sections of Neum-Stolac. The client prepared a Resettlement Review and Audit (RRA) to determine compliance with WB requirements for expropriation already undertaken. The RRA concluded that the completed expropriation process had been conducted entirely in line with the relevant local legislation (i.e., Law on Expropriation of FBH) and no serious or major gaps in terms of OP 4.12 compliance were identified. No retroactive measures will be necessary.

54. The Project will develop two complementary and coordinated beneficiary feedback mechanism, which will be in place during planning and implementation and will consist of: 1) the Central Feedback Desk (CFD) - a Project level mechanism which collects grievances related to all sub-projects managed at the level of the implementing agency PC Roads FBH; and 2) Beneficiary Feedback Commissions (BFC) – a additional mechanism available only for municipalities with high levels of expropriation (Neum and Stolac), managed by the respective municipalities. The CFD responds to grievances related to all project sub-sections received through various channels (e.g. contractor, email, phone, etc.), and keeps a central grievance log, which include monitoring data on grievances managed by the BFC. The BFC is an additional contract point for addressing grievances only related to the Neum-Stolac sub-project. The BFC provides on-site visits for claims related to expropriation and civil works as needed. It consists of community representatives, local government and implementing agency staff. The implementing agency will develop a short guide to ensure coordination among the two grievance mechanisms and brochures are being distributed in Neum and Stolac to inform about the availability and function of the BFC.

55. To ensure that the issues raised are appropriately addressed and closed-out, the results of BFCs (i.e. the number and type of comments/grievances received and beneficiaries' level of satisfaction with responses given) will be made available to the public. The effectiveness of beneficiary feedback mechanisms to provide timely response will be monitored at the Project level, see BF indicator incorporated into the Project M&E framework (see Annex 1).

56. The safeguards arrangement (both social and environmental) described above will be applicable to all activities jointly co-financed by the World Bank and EIB regardless the size of co-financing shares.

Monitoring & Evaluation

57. The Project includes a set of monitoring indicators at the Project levels. The chosen indicators might be replicated in subsequent phases if the project design is common to allow the effective measurement of the outcome and results of the project(s) and aggregated to provide results for the Program. The overall responsibility for monitoring and evaluation of outcomes of the first phase of TSMP will formally lie with the PC Roads FBH. The PIMT within PC Roads FBH will prepare annual progress reports, with contributions from other stakeholders. These reports will detail physical progress and progress in respect of the monitoring indicators in the results framework.

58. The implementation of the Road Safety and Investment Project confirmed solid capacity in the PC Roads FBH for monitoring and evaluation. The PIMT within PC Roads FBH will prepare progress reports, using data from their established monitoring practices with contributions from contractors, municipalities and the Beneficiary Feedback Commissions established for the Project.

These reports will detail physical progress and progress in respect of the monitoring indicators in the results framework.

Role of Partners

59. The Project will be jointly co-financed by EIB and the World Bank. EIB will provide co-financing of civil works under Components 1 and 2 and supervision under Component 4 in the amount not exceeding €33 million.

60. The joint co-financing of the Project provides PC Roads FBH the possibility to flexibly use proceeds from the EIB and IBRD loan to pay for the activities under the Project. As the IBRD loan disbursement percentage for components 1, 2 and 4 is set "up to 99 percent", PC Roads FBH will have to ensure that funds from each loan are used at least for the payment of one invoice from contracts signed under these components. Therefore co-financing shares could vary by subproject/contract. Component 3 will be fully financed by IBRD loan proceeds.

Table 1: Project costs

Project Components	**Project cost (€ million)**	**IBRD financing (percent of total)**
1. Road Upgrade and Modernization (including contingencies)	78.21	Up to 99
2. Road Safety Interventions (including contingencies)	2.76	Up to 99
3. Improving Main Road Network Management	3.0	100
4. Project Management and Implementation	6.885	Up to 99
5. Contingency for Disaster Risk Response[31]	0	
Total Project Costs	90.855	
Total Project Costs	90.855	
Front-End Fees	0.145	
Total Financing Required	91.0	63.8

61. *Procurement arrangements for the jointly co-financed Project*: It has been agreed that in order to speed up the procurement processes, EIB will rely on the World Bank to review and clear procurement documents. World Bank procedures will be followed for components jointly co-financed by the World Bank and EIB. It was agreed that all the relevant procurement processes will use the Bank's Standard Bidding Documents or, as the case may be, national bidding documents acceptable to the Bank, including without limitation, the fraud and corruption provisions incorporated in said Bidding Documents. For more details see the draft Principles of Collaboration between the IBRD and EIB in Annex 7. The partners will aim to coordinate implementation supervision missions to the extent possible.

[31] Contingency for Disaster Risk Response will be kept zero while the government can utilize project budget for rapid response with agreed conditions subject to reallocation or additional finance later.

Annex 4: Implementation Support Plan

COUNTRY: Bosnia and Herzegovina

Strategy and Approach for Implementation Support

1. The strategy for implementation support has been developed based on the nature of the Project and its risk profile. The main objective of the implementation support is to ensure quality of works, timely award of contracts and adherence to the implementation schedule. Supervision will also focus on monitoring compliance with the Bank fiduciary, environmental and social safeguards requirements. Emphasis will be placed on upstream reporting, auditing and accountability, and technical compliance measures to ensure early detection and remedy of problems.

2. The Project implementation support will also put a specific emphasis on timely implementation of capacity building and institutional strengthening activities under Component 3 including that on road asset management system.

Implementation Support Plan

3. The Bank Project team will provide timely and effective implementation support through combination of daily supervision and semiannual implementation support missions. Key members of the Bank's team, including the task team leader, road engineer, procurement, financial management, environmental and social development specialists are based in the region and in the Country Office in Bosnia and Herzegovina. This will enable the task team to provide more effective supervision and daily implementation support to PC Roads FBH. In addition, it will allow early detection and remedy of any issues that arise during implementation.

(a) *Project Management*: The TTL will conduct the quarterly supervision of the Project, liaise with the client on a daily basis, and will coordinate with Project team members based in the region and HQ to ensure timely guidance and support to the client.

(b) *Technical Inputs*: The road engineer will provide support to PC Roads FBH in the review of designs, supervision and management of civil works contracts. The engineer jointly with PC Roads FBH staff will conduct regular site visits and review of documentation to ensure adequate quality of the rehabilitation/construction works.

(c) *Financial Management*: FM support will be provided during Project preparation and implementation and will consist of the following: review of periodic reports, review of audited annual audited financial statements together with auditors' management recommendation letters; monitoring implementation of agreed remedial actions; and addressing emerging issues in collaboration with implementing units.

(d) *Procurement*: The procurement related implementation support will include: (a) timely advice on various procurement related issues, (b) guidance on the Bank's Procurement Rules and Guidelines; and (c) monitoring of procurement progress against the procurement plan. One supervision visit is expected to take place per year during which ex-post reviews will be conducted.

(e) *Environmental and Social Safeguards*: The environment and social specialist will support relevant counterpart staff and provide any necessary training. On the social side, supervision will focus on the implementation of the RPF and RAPS, and the

social (including gender) impacts associated with the Project and citizen and beneficiary engagement. The environmental specialist will supervise the implementation of the ESMF, ESIA and site-specific EMPs. Field visits will be made on a semi-annual basis.

Time	Focus	Skills Needed	Resource Estimate (Staff Weeks/year)	
First twelve months	Team Leadership	Management, supervision, coordination, dialogue with government and other stakeholders	Task Team Leader	8
	Project Support	Coordination	Program Assistant in-country	2
	Technical	Technical review of detailed designs, bidding documents, site supervision	Road Engineer	4
	Social	Social safeguards, land acquisition and resettlement, gender and poverty	Social Specialist	4
	Environment	Environmental safeguards, supervision and monitoring, training as needed	Environmental Specialist	4
	Procurement	Procurement experience, Banks procurement norms knowledge, procurement reviews and supervision	Procurement Specialist	4
	Financial Management	FM experience, knowledge of Bank FM norms, financial management and disbursements	FM Specialist	4
12-48 months	Team Leadership	Management, supervision, coordination, dialogue with potential country members of program	Task Team Leader	8
	Project Support	Coordination	Program Assistant in-country	2
	Technical	Technical review of detailed designs, bidding documents, site supervision	Road Engineer	4
	Social	Social safeguards, land acquisition and resettlement, gender and poverty	Social Specialist	4
	Environment	Environmental safeguards, supervision and monitoring, training as needed	Environmental Specialist	4
	Procurement	Procurement reviews and supervision, training as needed	Procurement Specialist	3
	Financial Management	FM reviews and supervision, training and monitoring	FM Specialist	3
48-60 months	Team Leadership	Project management, supervision, coordination	Task Team Leader	8
	Project Support	Coordination	Program Assistant in-country	2
	Technical	Technical review of detailed designs, bidding documents, site supervision	Road Engineer	2
	Social	Social safeguards, land acquisition and resettlement, gender and poverty	Social Specialist	3
	Environment	Environmental safeguards, supervision and monitoring, training as needed	Environmental Specialist	3
	Procurement	Procurement reviews, training as needed	Procurement Specialist	4
	Financial Management	FM reviews, training and monitoring	FM Specialist	4

Skills Needed	Number of Staff Weeks	Number of Trips	Comments
Task Team Leader (TTL)	40	Field trips as required	Region-based
Road Engineer	18	Two	Region-based
Environmental Specialist	23	Four	Region based
Social Specialist	23	Four	HQ-based
Procurement Specialist	20	Field trips as required	Region-based
Financial Management Specialist	20	Field trips as required	Country-based
Program Assistant	10	Field trips as required	Country-based

Annex 5: Economic Analysis

COUNTRY: Bosnia and Herzegovina

Introduction

1. The economic analysis was done for all civil works to be financed under the Project that are composed of: (i) road works for the upgrade to Class I standard of the Babin Do – Drenovac road, the construction of slow lanes on nine road sections and the pavement rehabilitation of four road section; (ii) the removal of eight black spots; and (iii) the rehabilitation of three tunnels and seven bridges.

2. The economic analysis of the road works was performed using the Highway Development and Management Model (HDM-4) that computed annual road roughness deterioration, operating vehicle speeds, CO2 emissions, road agency costs, vehicle operating costs, travel time costs and CO2 emissions costs for the base-alternative and the project-alternative over the evaluation period, in order to compute the Net Present Value (NPV), at a given discount rate, and the Economic Internal Rate of Return (EIRR) of the Project. The economic analysis of the black spots removal considered the estimated reduction in road accidents as a result of the black spots removal. The economic analysis of the tunnels and bridges rehabilitation considered the elimination of the estimated reduction in travel times as a result of the deteriorated tunnels and bridges.

Project Components

3. The Project road works total 146.09 km to be executed on 14 road sections in need of upgrading, slow lane construction and pavement reconstruction (Table 1). In addition, the Project will finance the removal of eight black spots (2.90 km in total) and the rehabilitation of three tunnels (1.86 km in total) and seven bridges (0.50 km in total).

Table 1: Project Components

Road Work	Road No	Road No	Region	Road Section	From km	To Km	Length (km)
Upgrading	1.1.1	M17.3	HNK	Banin Do – Drenovac	5.30	36.34	31.04
Slow Lane	1.2.1	M5	USK	Ripač - Dubovsko	2.20	7.40	5.20
Addition	1.2.2	M5	USK	Bos. Petrovac - Ključ - Prevoj Lanište	6.40	11.20	4.80
	1.2.3	M5	SBK	Donji Vakuf - Turbe (Komar)	11.90	16.90	5.00
	1.2.4	M6.1	ZHK	Posušje - Grude - Široki Brijeg	0.00	17.00	6.63
	1.2.5	M14.2	USK	Bosanski Petrovac - Drvar	0.00	19.30	6.00
	1.2.6	M14.2	LK	Drvar - Resanovci	0.00	38.20	4.00
	1.2.7	M18	KS	Banj Brdo - Simin Han			2.00
	1.2.8	M15	K10	Borova Glava traka + Trivunove krivine			9.30
	1.2.9			Gromiljak – Blažuj	14.00	19.00	5.00
Reconstruction	1.3.1	M5	USK	Bihać 4 – Ripač	0.00	1.00	1.00
	1.3.2	M5	SBK	Jajce jug – Donji Vakuf 1	0.00	32.00	32.00
	1.3.3	M19.2	TK	Vitalj – Vlasenica (Gran.entiteta)	0.00	12.00	12.
	1.3.4	M20	BPK	Ustikolina – Goražde 8	0.00	22.12	22.12
Black Spots	2.1.1	M4.2	USK	Skokovi – Srbljani	11.23	11.53	0.30
Removal	2.1.2	M5	USK	Granica BiH/RH (Izačić) – Bihać	8.05	8.35	0.30
	2.1.3	M17	HHK	Tarčin – Konjic	16.80	17.60	0.80
	2.1.4	M17	HHK	Potoci - Mostar centar	7.80	8.10	0.30
	2.1.5	M17	HHK	Mostar centar – Gnojnice	1.64	1.94	0.30
	2.1.6	M17	HHK	Tasovčići – Čapljina	0.00	0.30	0.30

	2.1.7	M18	TK	Šićki Brod 3 - Živinice1	2.50	2.80	0.30
	2.1.8	M18	ZDK	Vitalj – Olovo	20.60	20.90	0.30
Tunnel	1.3.1			Pelagićevo - Srebrenik, Ormanica	16.21	16.46	0.25
Rehabilitation	1.3.2			Topčić polje - Lašva, Vranduk II	7.42	8.48	1.06
	1.3.3			Konjic - Jablanica 1, Crnaja	15.08	15.63	0.55
Bridge	1.4.1			Bridge over Sana River, Ključ	20.57	20.66	0.07
Rehabilitation	1.4.2			Bridge over Pliva River, Jajce	25.17	25.25	0.08
	1.4.3			Bridge Komar, across deep obstacle	17.25	17.31	0.05
	1.4.4			Bridge over Vrbas River, Bugojno	2.20	2.27	0.07
	1.4.5			Bridge over Bosna River, Bosna IV	6.54	6.69	0.15
	1.4.6			Bridge over Bregava River, Tasovčići	1.00	1.06	0.05
	1.4.7			Bridge over Ljubina River	27.52	27.55	0.03

4. The average traffic of the Project roads is 2,471 vehicles per day with 8.4 percent trucks. The Project roads are in fair condition with an average roughness of 2.8 IRI, m/km, and average travel speeds of 39 km/hour. The average traffic of the tunnels and bridges is 8,954 vehicles per day with 11 percent trucks. The tunnels and bridges have average travel speeds of 55 km/hour. (Table 2).

Table 2: Current Roads, Tunnels and Brides Characteristics

Road No	Road Class	Lanes No	Terrain	Width (m)	Roughness (IRI)	Speed (km/hour)	2014 Traffic (vehicle/day)	Trucks (%)
1.1.1	II	1.5	Hilly	4.0	3.32	22	886	4.1
1.2.1	I	2	Mountainous	7.0	1.52	44	3,643	10.1
1.2.2	I	2	Mountainous	6.5	2.90	36	1,736	14.5
1.2.3	I	2	Hilly	6.5	3.05	48	2,293	15.4
1.2.4	II	2	Hilly	6.5	1.87	39	2,333	9.1
1.2.5	IV	2	Mountainous	6.2	2.89	41	680	14.5
1.2.6	IV	2	Mountainous	6.2	3.75	41	884	14.5
1.2.7	II	2	Hilly	6.1	1.86	41	2,553	6.4
1.2.8	II	2	Hilly	6.5	1.95	44	1,650	4.4
1.2.9	I	2	Hilly	6.1	1.95	44	12,161	7.0
1.3.1	I	2	Flat	7.0	2.35	34	3,643	10.1
1.3.2	I	2	Hilly	6.0	2.54	50	2,657	14.4
1.3.3	II	2	Hilly	6.7	2.82	45	1,375	7.0
1.3.4	III	2	Hilly	6.0	3.12	35	3,138	3.5
2.1.1	II	2	Hilly	6.0	2.79	30	10,958	3.4
2.1.2	I	2	Hilly	6.0	3.05	43	6,054	6.6
2.1.3	I	2	Mountainous	7.0	2.40	42	5,933	10.4
2.1.4	I	2	Hilly	7.0	2.03	36	8,240	10.6
2.1.5	I	2	Flat	7.0	1.87	36	14,220	3.7
2.1.6	II	2	Flat	6.0	2.37	44	4,361	6.4
2.1.7	I	2	Hilly	6.5	2.74	43	13,897	6.0
2.1.8	I	2	Mountainous	5.8	3.48	31	3,033	12.0
1.3.1	I	2	Flat	6.7	1.93	32	9,736	8.8
1.3.2	I	2	Hilly	8.2	4.16	75	10,647	13.4
1.3.3	I	2	Mountainous	7.0	2.93	42	7,556	6.9
1.4.1	I	2	Hilly	6.5	2.90	36	3,390	14.5
1.4.2	I	2	Hilly	7.1	2.70	40	4,434	15.1
1.4.3	I	2	Hilly	6.5	3.05	48	2,293	15.4
1.4.4	II	2	Mountainous	5.0	2.42	40	8,692	4.4
1.4.5	I	2	Hilly	8.2	4.16	39	10,647	13.4

1.4.6	I	2	Hilly	7.0	1.83	46	4,170	2.6
1.4.7	I	2	Hilly	6.0	2.83	37	4,492	8.3

Project Costs

5. Table 3 shows the estimated economic costs of the proposed works that exclude VAT, which is 17 percent. The upgrading from Class II to Class I standard of the Babin Do – Drenovac road is estimated to cost €1.32 million per km. The average estimated cost of the slow lanes construction is €0.41 million per km, while the average estimated cost of the pavement rehabilitation is €0.13 million per km. The average estimated cost of the black spot remedies is €0.35 million per location, of the tunnel rehabilitation is €3.4 million per tunnel, and of the bridges rehabilitation is €0.3 million per bridge.

Table 3: Works Costs

Road No	Road Work	Cost (€)	Cost (€/km)
1.1.1	Upgrading from Class II to Class I	40.86	1.32
1.2.1	Slow Lane Construction	2.50	0.48
1.2.2	Slow Lane Construction	2.17	0.45
1.2.3	Slow Lane Construction	2.50	0.50
1.2.4	Slow Lane Construction	3.20	0.48
1.2.5	Slow Lane Construction	1.00	0.17
1.2.6	Slow Lane Construction	0.80	0.20
1.2.7	Slow Lane Construction	1.30	0.65
1.2.8	Slow Lane Construction	2.80	0.30
1.2.9	Slow Lane Construction	2.50	0.50
1.3.1	Pavement Reconstruction	0.26	0.26
1.3.2	Pavement Reconstruction	3.53	0.11
1.3.3	Pavement Reconstruction	1.00	0.08
1.3.4	Pavement Reconstruction	1.48	0.07
2.1.1	Black Spot Removal	0.20	0.67
2.1.2	Black Spot Removal	0.42	1.40
2.1.3	Black Spot Removal	0.46	0.58
2.1.4	Black Spot Removal	0.26	0.87
2.1.5	Black Spot Removal	0.26	0.87
2.1.6	Black Spot Removal	0.55	1.83
2.1.7	Black Spot Removal	0.51	1.70
2.1.8	Black Spot Removal	0.10	0.33
1.3.1	Tunnel Rehabilitation	0.90	3.60
1.3.2	Tunnel Rehabilitation	4.60	4.34
1.3.3	Tunnel Rehabilitation	4.70	8.55
1.4.1	Bridge Rehabilitation	0.25	2.81
1.4.2	Bridge Rehabilitation	0.24	2.86
1.4.3	Bridge Rehabilitation	0.20	2.99
1.4.4	Bridge Rehabilitation	0.54	8.18
1.4.5	Bridge Rehabilitation	0.55	3.62
1.4.6	Bridge Rehabilitation	0.18	2.90
1.4.7	Bridge Rehabilitation	0.15	5.36

Project Benefits

6. Road user costs (vehicle operating and travel time costs) for the main vehicle categories were estimated based on the basic vehicle fleet characteristics and economic unit costs (Table 4). Work travel time was valued at the full economic rate considering an average income of €1,212 per month per passenger, giving an estimated value of working time of €6.89 per hour. Non-work travel time was valued at 16 percent of the full rate, giving an estimated value of non-working time of €1.11 per hour.

Table 4 Vehicle Fleet Characteristics

	Car	Bus	Light Bus	Medium Truck	Heavy Truck
Economic Costs					
New vehicle price (€)	9,630	117,774	47,109	64,661	112,372
Replacement tire (€)	56.53	363.05	363.05	396.08	445.03
Fuel/liter (€)	0.98	0.98	0.98	0.98	0.98
Lubricant/liter €)	5.56	7.43	7.43	7.43	7.43
Maintenance labor costs (€/hour)	10.10	10.10	10.10	10.10	10.10
Crew costs (€/hour)	8.48	26.53	11.35	11.35	12.91
Annual overhead (€)	954	8,704	3,480	9,387	14,470
Annual interest (%)	5.00	5.00	5.00	5.00	5.00
Passenger working time (€/hour)	6.89	6.89	0.00	0.00	0.00
Passenger non-working time (€/hour)	1.11	1.11	0.00	0.00	0.00
Cargo delay time (€/hour)	0.00	0.00	0.00	0.00	0.00
Basic Characteristics					
Annual Vehicle km	16,000	70,000	40,000	55,000	80,000
Annual Working hours	500	2000	2000	2000	2000
Vehicle life (years)	12	12	12	14	14
Passengers	1.89	19.37	0	0	0
Gross Vehicle Weight (ton)	1.1	12.6	2.7	14.2	30.1
ESA Loading Factor	0.00	0.80	0.45	2.28	3.95

7. Table 5 shows the typical unit road user costs for different roughness levels, in € per vehicle-km, for a two lane road.

Table 5: Unit Road User Costs (€o per vehicle-km)

Roughness (IRI, m/km)	Car	Bus	Light Truck	Medium Truck	Heavy Truck
2	0.26	1.70	0.60	0.87	1.46
4	0.26	1.75	0.63	0.91	1.54
6	0.27	1.87	0.68	0.97	1.65
8	0.28	2.01	0.74	1.05	1.77
10	0.31	2.20	0.80	1.13	1.92

8. The estimated annual traffic growth of the normal traffic was based on the GDP per capita forecast of the IMF from 2016 to 2020, which is 3.8 percent average annual growth during this period. The income elasticity of demand was considered to be 1.0 for all vehicles. The traffic for all vehicles was estimated to grow at 3.8 percent per year from 2016 to 2026 and at 3.0 percent percent thereafter. Generated traffic was included in the analysis only for the upgrading of the Babin Do – Drenovac road, which is expected to reduce travel time by around 160 percent,

representing 80 percent of the normal traffic. For the other road works, no generated traffic was included in the analysis duet to their short length and limited impact on travel times.

9. The economic analysis of the road works included the estimation of the economic cost of the change in CO2 emissions with the Project, based on the unit cost of CO2 emissions of €27.3 per ton (US$ 30 per ton) increasing by 3 percent per year. The quantities of CO2 emissions with and without the Project were estimated using the HDM-4 model that estimates CO2 emissions function of the estimated fuel consumption. The analysis computed the benefits of the improved ride quality and travel times with the road works compared to the base-alternative that included over the evaluation period routine maintenance and rehabilitation of the roads when they reach poor condition.

10. The economic analysis of the black spots removal considered the cost of a road accident fatality to be €269,486 per fatality and the cost of a road safety injury to be € 26,948 per injury, based on the GDP per capita of Bosnia[32]. At the black spot locations, currently there are on average 10 accidents per year (varying from 5 to 13) that are estimated to reduce on average to 7 accidents per year. The evaluation considered that there are 0.05 fatalities per accident and 0.40 injuries per accident based on international statistics.

11. The economic analysis of the rehabilitation of the tunnels and bridges considered that vehicle speeds are reduced around the tunnels and bridges due to the current bad condition of the tunnels and bridges. The evaluation assumed that with the rehabilitation works, vehicle speeds will increase by 25 percent. The passenger time costs used in the evaluation are the same as the one used on the road works evaluation.

Economic Evaluation Results

12. The economic analysis considered and evaluation period of 20 years and discount rate of 10 percent. Table 6 summarizes the results of the economic analysis. The overall Economic Internal Rate of Return (EIRR) of the Project is 24.6 percent and the total Net Present Value (NPV) is €140.9 million, at 10 percent discount rate.

Table 6: Economic Evaluation Results

Road No	EIRR (%)	NPV at 10 percent (M Euro)
1.1	10.8	2.7
1.2.1	33.8	6.0
1.2.2	12.8	0.5
1.2.3	15.4	1.3
1.2.4	15.1	1.5
1.2.5	17.9	0.8
1.2.6	33.8	6.0
1.2.7	11.7	0.2
1.2.8	15.1	1.3
1.2.9	132.0	103.8
1.3.1	9.2	0.0
1.3.2	19.4	3.3
1.3.3	11.5	0.2
1.3.4	27.9	2.5
2.1.1	66.7	1.1

[32] The iRAP methodology proposes that the value of life may be estimated as the GDP per Capita multiplied by 70.

2.1.2	20.6	0.4
2.1.3	12.1	0.1
2.1.4	32.5	0.5
2.1.5	10.4	0.0
2.1.6	9.6	0.0
2.1.7	17.0	0.3
2.1.8	79.3	0.7
1.3.1	19.9	0.8
1.3.2	17.0	2.7
1.3.3	11.3	0.5
1.4.1	24.8	0.3
1.4.2	33.1	0.5
1.4.3	21.1	0.2
1.4.4	29.2	0.9
1.4.5	34.6	1.3
1.4.6	21.3	0.2
1.4.7	27.3	0.2
Total	24.6	140.9

13. Sensitivity analysis tested robustness of results of the evaluation against changes in construction costs and projected road user benefits. Construction costs increased by 15 percent and road user benefits decreased by 15 percent yield an overall Project EIRR of 22.0 percent, which indicates a satisfactory economic justification of the Project (Table 7).

Table 7: Sensitivity Analysis Results

Road No	Base EIRR (%)	EIRR (%)		
		A:Costs +15%	B:Benefits-15%	C: A & B
1.1	10.8	9.1	9.4	7.8
1.2.1	33.8	29.9	30.6	27.1
1.2.2	12.8	11.0	11.3	9.7
1.2.3	15.4	13.4	13.8	12.0
1.2.4	15.1	13.1	13.5	11.7
1.2.5	17.9	15.7	16.1	14.1
1.2.6	33.8	29.9	30.6	27.1
1.2.7	11.7	9.9	10.3	8.6
1.2.8	15.1	13.1	13.5	11.7
1.2.9	132.0	117.8	120.3	107.8
1.3.1	9.2	7.4	7.7	6.0
1.3.2	19.4	17.3	17.7	15.6
1.3.3	11.5	10.2	10.4	9.2
1.3.4	27.9	25.1	25.6	23.0
2.1.1	66.7	58.5	60.0	52.6
2.1.2	20.6	17.9	18.4	15.9
2.1.3	12.1	10.1	10.5	8.6
2.1.4	32.5	28.5	29.2	25.7
2.1.5	10.4	8.5	8.9	7.1
2.1.6	9.6	7.8	8.2	6.5
2.1.7	17.0	14.6	15.0	12.8
2.1.8	79.3	69.5	71.2	62.4
1.3.1	19.9	17.3	17.8	15.4
1.3.2	17.0	14.7	15.1	12.9
1.3.3	11.3	9.4	9.7	7.9

1.4.1	24.8	21.7	22.3	19.4
1.4.2	33.1	29.1	29.8	26.2
1.4.3	21.1	18.4	18.9	16.3
1.4.4	29.2	25.6	26.2	23.0
1.4.5	34.6	30.4	31.2	27.3
1.4.6	21.3	18.6	19.1	16.5
1.4.7	27.3	23.9	24.5	21.4
Total	24.6	22.0	22.5	20.2

GHG Emissions

14. Carbon dioxide (CO2) emissions were estimated based on aggregated composition of traffic, existing travel conditions, and impacts from the Project interventions. The evaluation compares anticipated baseline emissions, when there are no Project interventions, and the with-project scenario emissions. Baseline emissions are estimated from the existing traffic allowing for annual growth, while the Project scenario accounts for changes in emission levels of the normal traffic due to improved ride quality and increase in travel speeds.

15. Table 8 presents a summary of the estimated CO2 emissions with and without the Project over the evaluation period (2017 to 2036). Although the GHG emissions will be increasing over time, with and without the Project as the normal traffic will growth, the improved road conditions will allow for a net reduction of CO2 emissions over the evaluation period.

16. Over the evaluation period, the total CO2 emissions will decrease from 1,318,849 tons without the Project to 1,221,993 tons with the Project (7.3 percent decrease) due to the improved ride quality and increase in vehicle speeds.

Table 8: CO2 Emissions

	CO2 Emissions
Without Project (tons)	1,318,849
With Project (tons)	1,221,993
CO2 Reduction (tons)	96,856
CO2 Reduction (%)	7.3

Public Sector Financing and World Bank Added Value

17. Public sector financing is the appropriate vehicle for financing the proposed civil works because these construction costs cannot be recovered through road user tariffs or with private sector financing due to absence of tolls and the relative low traffic of the roads. Public investment in road infrastructure is desirable because it is a way the government plays a key role in the country's development by handling a range of issues that can only be accomplished or implemented through government actions, such as axle weight controls and road safety regulations. The Bank's financing is justified because of the Project's high economic benefits. The Bank's involvement in the road sector is justified because of the value added it brings beyond financing in areas such as: construction quality control, sustainability of road maintenance, transport planning, environmental risk management, safeguards, procurement, and financial management.

Primary Road Network Strategic Evaluation (Using the Road Network Evaluation Tools Model)

18. Additionally, a strategic evaluation of the Bosnia FBH main road network was carried out using the Road Network Evaluation Tools (RONET) model developed by the World Bank[33]. The objective of the RONET evaluation was to obtain macro figures of the network preservation needs for maintenance and rehabilitation road works. The RONET evaluation was done for the main road network that totals 2,037 km of asphalt concrete roads, with estimates of the road network length distribution per traffic class (five traffic ranges) and condition class (Good, Fair, Poor and Very Poor). These inputs for the valuation obtained from FBH PC-Roads are presented below.

Road Network

19. The table below presents FBH main roads network length by road class:

Table 9. Main FBH Roads Network Length (km)

Road Type	Total	Percent
Main	2,037	44
Regional	2,607	56
Total	4,644	100

20. The table below presents the distribution of the network length, in km, adopted on the RONET evaluation, in form of a matrix considering five road condition classes and five traffic ranges. A sustainable network, which doesn't require rehabilitation, is represented by roads in good or fair condition. The percent of the roads in sustainable condition is 91 percent, which shows that the road network is overall in good condition compared to what is typically found in other developing countries. The percent of roads carrying less than 3,000 vehicles per day is 44 percent, while 14 percent carry more than 10,000 vehicles per day.

Table 10. Road Network Matrix Evaluated with RONET (km)

Traffic Range	Condition (km)						
(vpd)	Very Good	Good	Fair	Poor	Very Poor	Total	Percent
<300	0	0	0	28	100	129	6
300-1000	30	82	61	0	30	202	10
1000-3000	115	225	221	0	0	561	28
3000-10000	235	522	100	0	0	858	42
>10000	38	159	76	16	0	288	14
Total	417	988	458	44	131	2,037	100
Percent	20	48	22	2	6	100	

Road Preservation Works Costs

21. The table below presents the estimated average unit costs of capital works, in US$ per km for a two lane road, for primary roads. The capital works to be applied on a road are a function of the current road condition. According to the RONET logic, roads in good or fair condition (sustainable network) require periodic maintenance works, and roads in poor or very poor condition require rehabilitation or full reconstruction. RONET also requires the cost of new construction to estimate the asset value of the network.

Table 11. Capital Road Works Unit Costs (US$/km)

[33] http://www.ssatp.org/en/page/road-network-evaluation-tools-ronet

Current Condition	Road Work Class	Road Work Type	Unit Cost (US$ per km)
Good Condition	Periodic Maintenance	Preventive Treatment	5,031
Fair Condition		Resurfacing (Overlay)	83,580
Poor Condition	Rehabilitation	Strengthening (Overlay)	167,160
Very Poor Condition		Reconstruction	244,580
No Road	New Construction	New Construction	2,108,108

22. The table below presents the estimated average unit costs of recurrent works, in US$ per km per year, for a two lane road, for primary roads per road condition class. Recurrent costs comprise routine maintenance costs and winter maintenance costs.

Table 12. Recurrent Maintenance Unit Costs (US$/km-year)

Condition	Unit Cost (US$/km-year)
Very Good	2,162
Good	4,479
Fair	6,796
Poor	11,430
Very Poor	20,698

23. The table below presents the resulting unit road user costs, in US$ per vehicle-km, for different road condition (roughness) levels and vehicle types.

Table 13. Typical Unit Road User Costs for Flat Terrain (US$ per vehicle-km)

Roughness (IRI, m/km)	Car	Bus	Medium Truck	Heavy Truck	Articulated Truck
2 (paved in very good condtion)	0.316	1.810	0.713	1.132	1.658
4	0.321	1.874	0.739	1.178	1.738
6	0.333	2.012	0.789	1.246	1.847
8 (unpaved in very good condition)	0.354	2.215	0.842	1.307	1.968
10	0.387	2.495	0.910	1.410	2.146
12 (paved in poor condition)	0.428	2.823	0.991	1.539	2.352
14	0.473	3.176	1.080	1.680	2.573
16 (unpaved in poor condtion)	0.519	3.539	1.171	1.827	2.801

24. The table below presents the composition of the unit road user costs for a paved road in very good condition with roughness equal to 2.0 IRI, m/km in a flat terrain.

Table 14. Unit Road User Costs Composition for Flat Terrain and Roughness 2.0 IRI (US$ per vehicle-km)

	Car	Bus	Medium Truck	Heavy Truck	Articulated Truck
Fuel and Oil	0.101	0.236	0.193	0.468	0.645
Tires	0.003	0.022	0.030	0.043	0.083
Parts and Labor	0.049	0.236	0.217	0.324	0.552
Depreciation and Interest	0.054	0.157	0.099	0.088	0.111
Crew Time	0.000	0.383	0.151	0.148	0.171
Overhead	0.000	0.063	0.023	0.061	0.096
Passenger and Cargo Time	0.109	0.713	0.000	0.000	0.000
Total	0.316	1.810	0.713	1.132	1.658

RONET Evaluation Results

25. The table below presents the current network length, in km, and current network annual vehicle utilization, in million vehicle-km per year, per traffic range roads with more than 10,000 vehicles

per day represent 14 percent of the primary roads network length but carry 46 percent of the annual network traffic. The main roads carry around 4,602 million vehicle-km per year.

Table 15. Main Roads Length and Utilization

Traffic Range	Length (km)	(%)	Vehicle Utilization (m veh-km)	(%)
<300	129	6	9	0
300-1000	202	10	48	1
1000-3000	561	28	409	9
3000-10000	858	42	2,035	44
>10000	288	14	2,101	46
Total	2,037	100	4,602	100

26. The table below presents the maximum possible asset value of the network and the current asset value of the network. The maximum possible asset value represents the replacement value of the network and is computed by multiplying the length of each road class by the new construction unit cost. The current asset value represents the current condition of the network and is computed by deducting, for each road class, from the maximum asset value the costs for periodic maintenance or rehabilitation needed to bring the road class to good condition. The current primary roads network asset value is US$4,212 million that is 98 percent of the maximum asset value (US$4,295 million).

Table 16. Main Roads Asset Value

Traffic Range	Maximum Asset Value (M US$)	(%)	Current Asset Value (M US$)	(%)	Current/ Maximum Asset Value (%)	Current Asset Value/ GDP (%)
<300	271	6	242	6	89	2
300-1000	427	10	414	10	97	4
1000-3000	1,182	28	1,163	28	98	12
3000-10000	1,808	42	1,797	43	99	18
>10000	607	14	597	14	98	6
Total	4,295	100	4,212	100	98	42

27. RONET estimated the rehabilitation, periodic maintenance and recurrent maintenance needs of the network under an unconstrained budget scenario (Optimal Scenario) that maximized the present value of total transport cost (sum of road agency costs plus road user costs) of the network at a 10 percent discount rate. RONET also evaluated the consequences of budget constraints by evaluating three budget constraint scenarios in addition to the do minimum scenario that represent doing only rehabilitation when the roads reach very poor condition.

28. The table below presents a comparison of annual rehabilitation, periodic maintenance and routine maintenance costs in years 1 to 5 and in years 6 to 20, in US$ million per year, for the different budget scenarios. Under the Optimal Scenario, US$47.9 million per year is needed in years 1-5, of which 18 percent is dedicated to rehabilitation works. This will eliminate the rehabilitation backlog and in years 6 to 20 the requirements for rehabilitation and maintenance

works decreases to US$33.1 million per year. The do minimum scenario requires US$20.0 million per year in years 1-5 and US$34.6 million per year in years 6-20.

Table 17. Comparison of Annual Road Agency Costs

Budget Scenarios	Annual Costs in Years 1 to 5 (MUS$/year) Rehabilitation (M US$/year)	Periodic Maintenance (M US$/year)	Routine Maintenance (M US$/year)	Total (M US$/year)
Optimal	8.5	30.8	8.5	47.9
Constraint 1	7.1	12.2	11.5	30.9
Constraint 2	7.1	5.6	12.6	25.3
Constraint 3	6.4	0.0	13.6	20.0
Do Minimum	6.4	0.0	13.6	20.0
Budget Scenarios	Annual Costs in Years 6 to 20 (MUS$/year) Rehabilitation (M US$/year)	Periodic Maintenance (M US$/year)	Routine Maintenance (M US$/year)	Total (M US$/year)
Optimal	0.0	23.7	9.4	33.1
Constraint 1	6.5	16.8	12.8	36.0
Constraint 2	18.6	5.3	17.2	41.1
Constraint 3	15.8	0.0	20.7	36.5
Do Minimum	13.2	0.0	21.5	34.6

29. The table below presents a comparison of the different budget scenarios in terms of present value, at 10 percent discount rate, of road agency costs, road user costs and total transport costs (sum of road agency plus road user costs), in US$ million, over a 20 year evaluation period. The budget scenarios being evaluated are the following:

a. Optimal - Scenario that maximizes total transport costs over the evaluation period.
b. Budget Constraint 1 - Scenario with around 20 percent reduction on road agency costs compared to the optimal budget scenario.
c. Budget Constraint 2 - Scenario with around 25 percent reduction on road agency costs compared to the optimal budget scenario.
d. Budget Constraint 3 - Scenario with around 35 percent reduction on road agency costs compared to the optimal budget scenario.
e. Do Minimum – Scenario that executes over the evaluation period only routine maintenance and rehabilitation when a road is in very poor condition.

30. Comparing with the do minimum scenario, the present value of net benefits (NPV) of the Optimal Scenario is US$ 2,164 million and the Benefit Cost ration is 16.4. Thus, for every dollar the road agency incrementally expends on preservation road works over the evaluation period, road users save 16.4 dollars over the evaluation period in present value terms.

Table 18. Comparison of Budget Scenarios

Budget	Present Value of Costs at 10 percent Road Agency	Road Users	Total Transport	Net Benefits*	Increase Agency Costs*	Decrease User Costs*	Benefit Cost Ratio

Scenarios	(M US$)	(M US$)	(M US$)	(M US$)	(M US$)	(M US$)	(#)
Optimal	377	24,199	24,576	2,164	141	2,305	16.36
Constraint 1	305	24,499	24,804	1,937	69	2,005	29.16
Constraint 2	280	25,054	25,334	1,407	44	1,450	33.22
Constraint 3	243	26,187	26,430	311	6	317	49.04
Do Minimum	236	26,504	26,740	0			

* Comparison with Do Minimum Scenario

31. The table below presents the estimated average network roughness, in IRI, m/km, for the different budget scenarios over the next 10 years. RONET estimates the condition of the network as a function of the road deterioration and the road works executed over the evaluation. The road deterioration is a function of the traffic, climate, current condition and pavement strength of the roads. The current average network roughness is 3.8 IRI, m/km, under the Optimal Scenario the roughness will decrease to 2.8 IRI, m/km, in 10 years and under the Do Minimum Scenario will increase to 6.4 IRI, m/km, in 10 years. The Budget Constraint 1 Scenario will keep the network as roughly the same condition as it is today.

Table 19. Network Condition (Roughness, IRI, m/km)

	Average Network Roughness (IRI)		
Budget Scenarios	Current (IRI)	Year 5 (IRI)	Year 10 (IRI)
Optimal	3.8	2.7	2.8
Constraint 1	3.8	3.7	4.1
Constraint 2	3.8	4.1	5.6
Constraint 3	3.8	4.6	6.4
Do Minimum	3.8	4.6	6.4

32. The table below summarizes the road preservation needs for the Optimal Scenario and the Budget Constraint 1 Scenario that keeps the current network condition.

Table 20. Road Agency Costs Years 1 to 5 (MUS$/year)

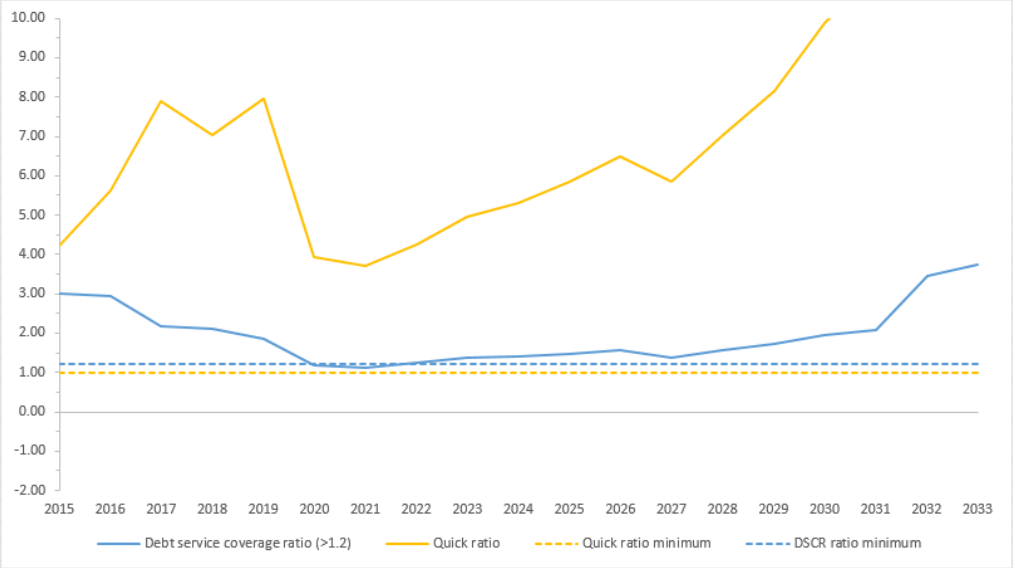
Road Work	Optimal Scenario		Keep Current Condition	
	(M US$/year)	(%)	(M US$/year)	(%)
Rehabilitation	8.5	18	7.1	23
Periodic Maintenance	30.8	64	12.2	40
Recurrent Maintenance	8.5	18	11.5	37
Total	47.9	100	30.9	100

33. A financial modeling carried out by the Bank confirms that additional revenues will be needed by PC Roads FBH to ensure its capacity to maintain the roads sufficiently, keep its financial viability and satisfactory implement the Road Sector Modernization Project. The Bank engaged with the Government and PC Roads FBH to undertake a financial assessment of the PC Roads FBH to determine its ability to repay the IBRD Loan, but also to assume its financial obligations deriving from existing borrowings as well as from the Road Modernization Program and the proposed 2018 road recategorization. Several scenarios were considered to understand PC Roads FBH' capacity to meet what is seen as the minimum financial criteria acceptable to the Bank for the enterprise to seek to achieve in the coming years - i.e. debt service coverage ratio of 1.2 and current ratio of 1.0. These results have been discussed with the government and PC Roads FBH to reach agreement on their preferred option for meeting the financial sustainability requirement. The

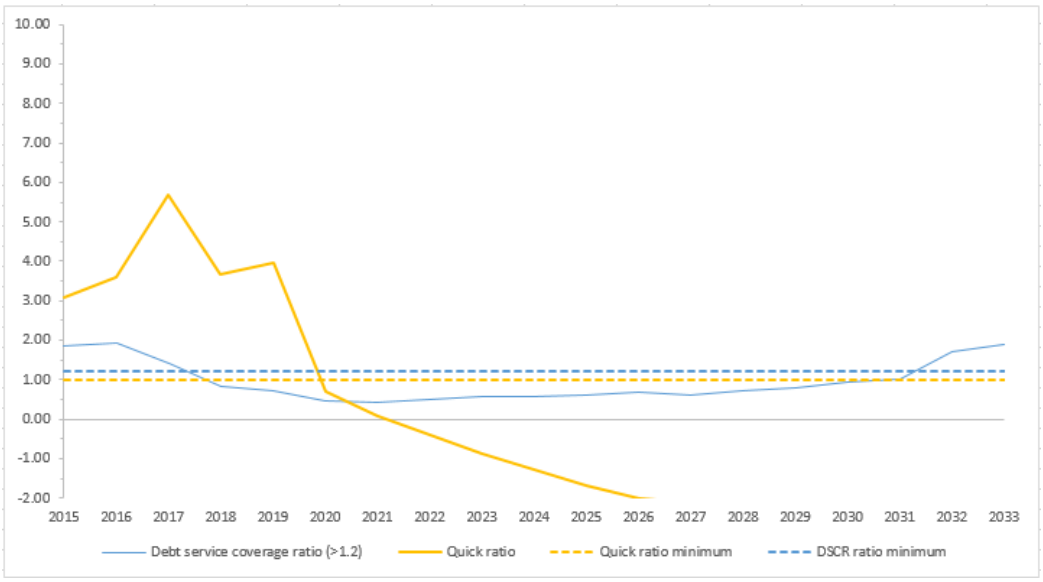
Government is currently preparing several options such as: (i) increase in fuel excise levy for roads road toll rate (increase by BAM 0.05 per liter of fuel), (ii) agree on a direct payment of fuel excise levy for roads to PC Roads FBH, (iii) increase revenue transfer to PC Roads FBH deriving from excise tax levy to 50 percent and/or (iv) postpone introduction of the roads recategorization beyond 2018.

34. Among various options that stand available for consideration the following best and worst case scenarios is being presented as follows:

a) The best case scenario – road levy increased by BAM 0.05 and directly paid to PC Roads FBH, 1975 kilometers of roads for maintenance, 40 percent share from the road levy and EBRD, EIB and IBRD participating in the Project. In the best case scenario there are 2 years namely 2020 and 2021 where the debt service coverage ration falls under 1.2 (2020: 1.19 and 2021: 1.12). However such results especially for year 2020 are marginal and can be considered as temporary and could be overcome by certain saving measures introduced by management.



b) The worst case scenario – road levy directly paid to PC Roads FBH, 2675 km of road maintenance from year 2018 up (recategorisation of roads implemented), 40 percent share from the road levy, EBRD, EIB and IBRD participating in the Project. Under the worst case scenario there are critical years 2018 – 2031 where the debt service coverage ratio falls under 1.2 and current ratio below 1. This scenario is not desirable and the Government should consider assigning certain portion of revenue to the PC Roads FBH as result of roads recategorisation based on which the company has to maintain more kilometers of roads which is not likely without receiving additional revenues.



35. The World Bank will continue monitoring financial viability of the PC Roads FBH throughout the Project implementation. Accordingly the team will provide advice to the FBH government and PC Roads FBH on the ways to ensure appropriate steps are taken to maintain the company's financial viability.

Annex 6: Streamlining Climate Resilience in the Project

COUNTRY: Bosnia and Herzegovina

1. Extraordinary rainfalls affected Bosnia and Herzegovina between 14 and 19 May 2014, resulting in the most severe floods since the systematic recording of meteorological and hydrological processes began in 1892. Intense rainfall caused several rivers and their tributaries to overflow, in particular the rivers Bosna and Sava as well as the Drina, Una and Sana. This resulted in sudden and extreme flooding with a number of locations in the Bosna River Basin recording a maximum outflow that exceeded the return period of 500 years. Considering that flood prevention systems in the country are by law designed for a return period of 100 years it is evident how extraordinary this devastating disaster was. In addition, this level of rainfall triggered numerous landslides in the affected areas, which highlighted the lack of attention that landslide risk management receives in BiH.

2. **Climate resilience in designs**. To ensure the consideration of climate resilience in the proposed designs, Project preparation included a regular review of proposed technical solutions for all civil works components and close cooperation with PC Roads FBH aimed to assist them to impart an increased degree of safety and climatic resilience to the proposed works where such increased degree was thought to be required and feasible at reasonable cost. The recent experience from the DALA preparation for transport infrastructure in BiH following the 2014 floods was a relevant guide to understanding where most common shortcomings in designs happen and also what have been the past types of infrastructure failures in extreme climate events. The climatic resilience issues that have been already reviewed and discussed with the client as well as those that will be further discussed and reviewed along the Project implementation are mentioned below with respect to the corresponding sub-components:

(a) **Component 1(a): Neum - Stolac road:** The designs for this road are under preparation and nearing completion. They have been discussed with the designers and PC Roads FBH during the pre-appraisal mission and found acceptable. The road alignment has been visited by the WB team. It is located in hilly and mountainous terrain and is characterized by karstic limestone bedrock formations and abundance of high strength granular material suitable for sound road embankment construction. The natural morphology and the high permeability of the karstic nature limestone along the alignment is not anticipated to favor excessive water flows that could seriously affect the proposed road. Based on the available calculations the designed culverts are expected to function at less than 20 percent of their flow capacity. However and following the 2014 floods the World Bank team has agreed with PC Roads FBH and the designer that the number and sizes of culverts are re-checked for increased flow capacity corresponding to larger return periods (e.g. 1/50 yrs and/or 1/100 yrs) than those (1/10 yrs) currently acceptable by local guidelines.

(b) **Component 1(b): Roads with additional lane construction for slow traffic:** The designs for the six out of those nine roads already prepared have been reviewed and found satisfactory and containing measures for increased climatic resilience such as drainage and slope protection measures (e.g. alternative types of curtain-type and anchored steel nets, gabion walls, concrete retaining walls, etc.) where the widening of those roads is designed

into existing hill slopes with unfavorable geology, for preventing potential localized landslides and rock falls.

(c) **Component (1c): Roads with partial axis correction:** The designs of the three out of the four in total road sections are at a preliminary stage, therefore it has been agreed with PC Roads FBH that similar climatic resilience measures as agreed for the third lane additional (1b) will be incorporated where required in the relevant designs, depending on the actual conditions of each project.

(d) **Component (1d): Tunnels**: The designs for the three tunnels (Vranduk II, Crnaja and Ormanica) to be rehabilitated under the Project is comprehensive and includes as per each tunnel various works related and contributing to their climatic resilience such as:

- structural capacity increase of the existing lining with anchoring and various types of grouting (e.g. consolidation, contact, etc.)
- waterproofing of the tunnel structure
- efficient water drainage of the rock mass around the tunnel.
- construction of secondary fibre-reinforced shotcrete lining
- construction of new pavement on concrete slab with side drainage
- lighting works

As typical with such rehabilitation designs for existing tunnels prepared under limited investigation data they are expected to be adapted and improved based on actual findings during construction, thus adding further to their climatic resilience.

It is noted that along the mountain slope where the 1953-built Crnaja road tunnel is located, displacements of various points along the slope surface and inside a railway tunnel at a lower elevation have been recorded intermittently in the past. These movements have followed the partial inundation of the toe of that slope and subsequent drawdown cycles by an artificial reservoir created by a dam project completed in 1955.

For the Crnaja tunnel and following the relevant discussions and World Bank team suggestions during the previous mission PC Roads FBH is currently preparing the ToR for a comprehensive ground investigation program with sampling boreholes and instruments (e.g. inclinometers, piezometers) installation and monitoring, for identifying the geometry (e.g. depth and lateral extent) and mobility of the landslide mass before any major rehabilitation works are performed for that tunnel and any other temporary traffic diversions that may be required during construction.

The WB team has also discussed with the University of Mostar their project of ongoing monitoring works using topographic methods for this location on behalf of the Hydro Power Company. The collective data and information will greatly assist the tunnel design optimization and climatic resilience and the construction of the proposed rehabilitation and strengthening works, as well as the challenging traffic management requirements during construction through and along this busy and important road tunnel.

Depending on the slope stability findings for that mountain slope containing the road and a railway tunnel, it is not unlikely that stabilizing and other works (e.g. drainage, retaining structures, etc.) may be required.

Before the commencement of reconstruction works, PC Roads FBH will also engage a consultant to maintain a monitoring system on the mountain slope to track for mobility during the works and once the tunnel is fully operational.

(e) **Component (1e): Bridges:** The designs for the seven bridges to be rehabilitated under the Project have been prepared before the unprecedented floods of 2014 in Bosnia, during which those bridges had not suffered any damages. However they are quite analytic and comprehensive in repairing and strengthening the bridge structures as well as protecting their piers and abutments. Various works related and contributing to climatic resilience included as per each particular bridge design are:

- bridge concrete or steel structure repair and corrosion protection/reinforcement or even deck replacement
- pier foundation widening and strengthening
- protection and retaining measures for bridge abutments and access embankments
- river course lining upstream and downstream of the bridge axis
- removal of from the river course at the bridge locations of spoil material from construction sites

3. **Capacity building for streamlining climate resilience in road management.** As part of component 3 – Improving Main Road Network Management, the Project will support PC Roads FBH in developing internal procedures, collecting data and capacity building to streamline climate resilience in the investment planning process in the company. PC Roads FBH needs to understand better the risks to main roads from extreme weather and climate change in order to provide timely intervention through their maintenance and reconstruction programs. This should be done by a vulnerability assessment of the network and identification of short-term priority interventions to improve resilience (for example: improving drainage capacity, retaining walls, improvement of embankments around the abutments, etc) which could be done within the annual maintenance programs. More complex investments would be included in the reconstruction plan for outer years. In additional to the assessment, engineering design studies for typical engineering solutions for site-specific vulnerabilities would be prepared together with key equipment for monitoring.

Project adaptation co-benefits

4. **Calculation**. Considering the above information, the Project adaptation co-benefits are calculated using the Climate Change coding methodology applied at the level of Project components. There are no qualified activities with mitigation co-benefits as per the Climate Change coding methodology and typology of Mitigation Activities included in the Joint MDB Mitigation Finance Reporting[34]. The main components, estimated costs and respective activities are listed in the table below.

Component	Bank Commitment (€ Million)	Sector Codes (%)	Theme Codes (%)	Adaptation Associated Sector (€ Million)	Mitigation Associated Sector (€ Million)

[34] http://www.worldbank.org/content/dam/Worldbank/document/Climate/mdb-climate-finance-2014-joint-report-061615.pdf

Component 1. Road Upgrade and Modernization	**46.6**	TI. Rural and inter-urban roads and highways (100%)	78. Rural Services and Infrastructure (100%)	TI (46.6)	N/A
Component 2. Road Safety Interventions	**1.4**	TI. Rural and inter-urban roads and highways (100%)	78. Rural Services and Infrastructure (100%)	N/A	N/A
Component 3. Improving Main Road Network Management	**3.0**	N/A	N/A	N/A	N/A
Subcomponent 1a. Enhancing road asset management system	1.0	BV. Public Administration - Transportation (100%)	27. Public Expenditure, Financial Management and Procurement (100%)	N/A	N/A
Subcomponent 1b. Enhancing capacity to improve climate resilience of the road network	1.0	BV. Public Administration - Transportation (100%)	81. Climate Change (100%)	BV (1.0)	N/A
Subcomponent 1c. Strengthening capacity to mainstream road safety in the design and implementation of works	1.0	BV. Public Administration - Transportation (100%)	78. Rural Services and Infrastructure (100%)	N/A	N/A
Component 4. Project Management and Implementation	7.0	BV. Public Administration - Transportation (100%)	27. Public Expenditure, Financial Management and Procurement (100%)	BV (6.53)	N/A
Component 5. Contingency for Disaster Risk Response	0.0	BV. Public Administration - Transportation (100%)	81. Climate Change (100%)	BV (0)	N/A
Total	**58.0**				

5. **Climate co-benefits per sector**. As a conclusion, based on the results above, 97 percent adaptation and 9 7percent mitigation co-benefits can be assigned to the Rural and Inter-Urban Roads and Highways sector (TI) and 75 percent adaptation and 64 percent co-benefits can be assigned to the Public administration-Transportation sector (BV).

Sector	Bank Commitment (€ Million)	% of Total	Adaptation Co-Benefits (€ Million)	Mitigation Co-Benefits (€ Million)	Adaptation Co-Benefits (% of Sector)	Mitigation Co-Benefits (% of Sector)
TI	48.0	83	46.6	0	97	0
BV	10.0	17	7.53	0	75	0
Total	**58.0**	**100**				

Annex 7: Principles of Collaboration between the IBRD and EIB (draft of April)

Principles of Collaboration ("PoC") dated _____, 2016 among the International Bank for Reconstruction and Development ("**World Bank**") and the European Investment Bank ("**EIB**") (collectively, the "**Financiers**" and individually each and any of them the "**Financier**").

WHEREAS

(A) Bosnia and Herzegovina ("**Borrower**") has requested EIB and World Bank ("**Financiers**") to assist in the financing of parts of the "Bosnia and Herzegovina Federation Road Sector Modernization Project" Project (the **"Project**") and has entered into, or will enter into, an agreement or agreements with each Financier setting forth the relevant terms and conditions of the financing (each such agreement being hereinafter referred to as a "**Financing Agreement**"); and

(B) the Financiers consider it appropriate and advisable, in the interest of the Project and in their own interest, to cooperate in certain matters of common interest relating to the implementation of the parts of the Project that are expected to be jointly co-financed by the Financiers (the **"Co-Financed Parts**"), as described in this PoC.

NOW, THEREFORE, the Financiers hereby set out the following Principles of Collaboration:

1. Co-Financed Parts

(a) Without limitation to the description of the Project set forth in the Financiers' respective Financing Agreements, the Financiers acknowledge that the Project comprises those common components of each Financing Agreement as will be set forth in the agreed Procurement Plan for the Co-Financed Parts as defined in Section 3(e) below.

(b) The amount of financing that each Financier intends to provide to the Borrower in respect of one or more Co-Financed Parts is set forth in their respective Financing Agreements, as the same may be amended from time to time (including to increase or decrease the amount of the corresponding financing).

(c) The Financiers will jointly co-finance eligible expenditures in respect of the costs of works, goods, non-consulting and consulting services of the Co-Financed Parts, and following their corresponding disbursement mechanisms, in accordance with the terms and conditions set forth or referred to in their respective Financing Agreements.

2. General Cooperation and Coordination on Implementation of Co-Financed Parts

(a) Each of the Financiers will use reasonable efforts to:

(i) ensure the prompt channeling of information regarding the Co-Financed Parts and their progress with the other Financier (subject to the applicable policies of each Financier regarding access to information);
(ii) arrange and organize regular joint Co-Financed Parts review missions and other joint missions, as and when they consider it necessary or advisable (provided that one joint supervision mission per year should in any case be organized);
(iii) arrange and organize meetings of the Financiers, as and when they consider it necessary or advisable, to discuss and resolve any issues arising during the implementation of the Co-Financed Parts; and
(iv) ensure timely review of financial reports and annual audited Project financial statements and promptly communicate and discuss such results with the other Financier in order to coordinate a joint response to the Borrower.

(b) To ensure the smooth operation and efficient monitoring of the Co-Financed Parts, the Financiers hereby agree that:

(i) the World Bank shall act as the coordinator for all matters related to the technical, procurement, environmental and social safeguards ("**Safeguards**"). In that capacity the World Bank will coordinate the Relevant Procurement and Safeguards aspects of the Co-Financed Parts in accordance with the provisions of Sections 3 and 4 of this PoC, respectively, and coordinate the response to the Borrower with the results of the review of financial reports and annual audited Project financial statements in accordance with the provision of paragraph (a)(iv) of this Section;
(ii) the Financiers shall nominate one (1) representative of each Financier to liaise with the other Financier (including attendance of meetings at the request of any of the Financiers to facilitate the smooth implementation of the Co-Financed Parts). The Financiers shall promptly advise each other of the staff member nominated as its representative;
(iii) each Financier will bear the costs of its own employees' missions.

3. Procurement Arrangements

Independently and without prejudice to the terms and conditions of each respective Financing Agreement, the Financiers agree to cooperate and coordinate their respective arrangements in relation to procurement and implementation of the Co-Financed Parts. Without limitation to the provisions of Section 2 of this PoC, the Financiers will endeavor to cooperate in accordance with the following:

(a) The Financiers confirm that the World Bank's Procurement Guidelines ("Guidelines: Procurement of Goods, Works and Non-consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers", dated January 2011 and Revised July 2014) and the World Bank Consulting Guidelines ("Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers", dated January 2011 and Revised July 2014) will apply to the

procurement of all goods and works, non-consulting services and consulting services relating to the Co-Financed Parts (the "Relevant Procurement"). The Financiers further confirm that the World Bank will be responsible for the supervision of the Borrower's administration of the Relevant Procurement.

(b) The Financiers acknowledge that EIB will not finance its respective part of a contract to a bidder or consultant who is on any of the EU financial or commercial sanctions lists.

(c) The Financiers agree that all Relevant Procurement processes will use the World Bank's Standard Bidding Documents or, as the case may be, national bidding documents acceptable to the World Bank (the "Bidding Documents"), including without limitation, the fraud and corruption provisions incorporated in said Bidding Documents. The World Bank will request the Borrower to include in such Bidding Documents EIB's covenant of integrity set out at Annex 1 of this PoC. In addition, the Bidding Documents will contain a provision permitting each of the Financiers, and/or persons appointed by them, and/or entities authorized according to their respective policies, to inspect and copy all accounts, records, and other documents relating to the procurement process and performance of the Project activities and to inspect or audit the records and accounts of any bidders, contractors, suppliers or service providers relating to the procurement process and performance of the Project activities, all in accordance with their respective policies and procedures.

(d) The Financiers will jointly review the procurement plan applying to the Co-Financed Parts, as prepared and submitted by the Borrower (the "**Procurement Plan**"). The Financiers acknowledge that the Procurement Plan shall define the thresholds for the procurement methods and the World Bank's review requirements, identifying those contracts that will be subject to World Bank's prior review and post review. The Procurement Plan will be periodically updated by the Borrower to reflect actual project implementation needs and each submitted update of the Procurement Plan will be jointly reviewed by the Financiers. The World Bank will be responsible, for prior- reviewing procurement documents for all those contracts as so identified in the Procurement Plan, and post reviewing on yearly basis a sample of those contracts subject to the World Bank's post-review as set forth in the Procurement Plan.

(e) For all contracts relating to the Relevant Procurement, the World Bank will provide EIB, upon request, access to copies of all procurement documents reviewed and cleared by the World Bank and of all procurement reports. The World Bank will also inform EIB of any complex or delicate procurement decisions (including without limitation those related to procurement processes in which any complaint or any allegation as referenced under Section 5(a) of this PoC has been received or it is expected to be received and those in which a tenderer is excluded on the basis of a debarment) related to said contracts before the World Bank issues a no-objection on behalf of the Financiers. The EIB will have the right to seek information and/or clarifications or provide recommendations to the World Bank on any stage of the Relevant Procurement process.

(f) In case of disagreement between the Financiers, the Financiers agree that the relevant contract will be exclusively financed by the Financier, the procurement policy of which will have been complied with.

(g) To allow the EIB to comply with its own procurement policies, the World Bank undertakes to notify the EIB or to ensure that the Borrower notifies the EIB of any contracts to be procured above an amount of EUR 5,000,000 for contracts relating

to works and EUR 200,000 for contracts relating to services, in order to enable publication by the EIB of the relevant procurement notices for the jointly co-financed contracts in the Official Journal of the European Union.

(h) Without limitation to the provisions of their respective Financing Agreements and, in any case, without prejudice to the provision under Section 7(b) below, the Financiers will endeavor to inform each other as to the grounds to exercise remedies under their respective Financing Agreements in respect of Relevant Procurement, including declarations of misprocurement.

4. Cooperation on Safeguards Requirements

(a) The Financiers recognize the importance of environmental and social safeguards compliance requirements under the Project and will endeavor to cooperate with each other in the coordination, implementation and monitoring of the requirements of each of the Safeguards documents prepared in respect of the Co-Financed Parts (the "**Safeguard Documents**").

(b) In accordance with the Financing Agreements of each of the Financiers, the Financiers expect that the Co-Financed Parts shall be carried out pursuant to, and in compliance with, the environmental and social policies, practices, procedures and guidelines of both Financiers. To this end, the Financiers will endeavor to verify that any new environmental and/or social documentation to be developed and adopted by the Borrower during preparation and implementation of the Co-Financed Parts (e.g., site-specific environmental and social impact assessments or management plans and site-specific resettlement action plans) will be prepared pursuant to, and in compliance with, the policies, practices, procedures and guidelines of both Financiers.

(c) Each Financier will independently review drafts of the Safeguard Documents, with the aim of forming a joint, mutually acceptable position; provided, however, that no Financier shall be obliged to appraise, supervise and/or monitor any requirement of the other Financier's policies, practices, procedures and guidelines which the first Financier deems is beyond the scope of its mandate. The Financiers will coordinate terms of reference of the consultants to be hired for the Project supervision, including verification of safeguards, to include any specificities of the relevant safeguard policies of each Financier.

(d) In the event the Financiers cannot form a mutually acceptable position on any of the aforementioned matters, the procedure set forth in Section 8 of this PoC shall apply.

5. Integrity Matters

(a) The Financiers confirm that the World Bank Anti-Corruption Guidelines ("Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants", dated October 15, 2006 and revised in January 2011) will apply to the Co-Financed Parts.

(b) In accordance with their respective Financing Agreements, and subject to their respective applicable policies and guidelines, the Financiers agree to pursue their

reasonable best efforts to consult and inform each other in the case that a material and credible allegation of fraud, corruption, collusion, coercion or obstruction (collectively "fraud or corruption") or a material and credible allegation of money laundering, financing of terrorism relating to the procurement process, and/or the Project activities and/or Project implementation occurs, with a view to agreeing on a coordinated approach to such allegations, including, where appropriate, joint or parallel investigations.

(c) The Financiers will, subject to their respective policies on access to information, promptly exchange information in relation to any such allegation of fraud or corruption, and investigations relating to such allegations, in accordance with Section 6 of this PoC.

(d) Without limiting their rights under their respective Financing Agreement, and subject to their respective applicable policies (and, in any case, without prejudice to the provision under Section 7(b) below), the Financiers will endeavor to inform each other when exercising contractual remedies arising from fraud or corruption in connection with the Project. The Financiers may explore how sanctions or other results of investigations taken by one Financier can be supported by the other Financier.

6. Cooperation, Coordination and Exchange of Information

Subject to their respective applicable policies, in particular those on access to information, and their rights and obligations under their respective Financing Agreement, the Financiers will endeavor to:

(a) coordinate, cooperate and, subject to the requirements of their respective policies on access to information, exchange information in relation to fraud or corruption relating to the Relevant Procurement process.

(b) inform the other Financier, as soon as practicable, of any substantial breach committed by the Borrower under their respective Financing Agreement.

(c) inform the other Financier, as soon as practicable, of any complaint in relation to the Co-Financed Parts brought to the World Bank Inspection Panel or the EIB Complaints Mechanism.

7. Resolution of Differences

(a) Without prejudice to the provision under Section 8(c) below, the Financiers will, to the extent possible, strive to resolve promptly and amicably questions of interpretation and application of this PoC and any disputes arising out of or in relation to this PoC. Any material differences on the implementation of the Project, and the interpretation and application of this PoC will be resolved through consultation and dialogue between the Financiers' representatives. If the representatives are not able to resolve any such differences in a reasonable period of time, the differences will be referred to the Financiers' senior management. In the event of a continuing unremedied dispute after ninety (90) days as from referral to the Financiers' senior management, this PoC shall be *ipso facto*

terminated without any responsibility or liability whatsoever arising for either Party.

(b) Each Financier hereby expressly acknowledges and agrees that nothing in this PoC shall to any extent exclude, limit or otherwise adversely affect each Financier's ability to exercise all remedies available to it under the relevant Financing Agreement at any time (with no need to seek for any prior approval and/or clearance whatsoever by the other Financier). Notwithstanding any other provision of this PoC, each Financier reserves the right to enforce all its rights under its respective Financing Agreement. In case of any conflict between this PoC and the respective Financing Agreement, the latter shall take precedence.

8. Execution, Effectiveness, Termination, Amendments and Miscellaneous

(a) This PoC may be signed in several counterparts, all of which will be an original.

(b) This PoC will come into operation upon signature by the last signatory of the Financiers. This PoC sets forth principles and actions that the Financiers intend to implement and follow in relation to the Project, and shall not constitute and is not intended to establish any legally binding contractual obligation between the Financiers. As a consequence, nothing in this PoC shall give rise to any liability on either Financier's part.

(c) This PoC will terminate in respect of a Financier on the earlier of: (i) the date that the Financier has notified the other Financier of its decision not to proceed with its proposed financing of the Co-Financed Parts; (ii) the closing date as set forth in its Financing Agreement; (iii) the date of termination under Section 7(a) above; and (iv) the date of termination as per the following sentence of this Section 8(c). Should either Financier determine, at its sole discretion, that the continuation of this PoC is no longer appropriate, such Financier will notify the other its concerns and the rationale for requesting termination. If such concerns cannot be resolved in a mutually satisfactory manner within thirty (30) days, either Financier has the right to withdraw from this PoC at any time by giving prior thirty (30) days' written notice to the other Financier.

(d) All additions, amendments or variations to this PoC will be taken into consideration only if in writing and signed by the duly authorized representative(s) of the Financiers.

(e) Nothing in this PoC will operate or will be construed as a waiver, renunciation or any other modification of any of the privileges, immunities or exemptions of any Financier under its organizational documents, or any international convention, or any applicable law, including, without limiting the generality of the foregoing, the privileges, immunities and exemptions of: (i) the World Bank under the Articles of Agreement of the International Bank for Reconstruction and Development; and (ii) the EIB under its Statute and under the European Union Treaties.

(f) The World Bank will exercise the same care in the discharge of its role of coordinator of the Relevant Procurement under this PoC as it exercises with respect to the administration and management of its own affairs, and will have no further responsibility in respect thereof to the EIB.

(g) This PoC may be disclosed by any of the Financiers in accordance with such Financier's policy on transparency and disclosure of information as in force from time to time.

(h) This PoC is not intended to be, and shall not constitute, a commitment or undertaking by any Financier to approve, organize and/or underwrite or commit to approve, organize and/or underwrite the funding of (in full or in part) of the Project and nothing in this PoC will be construed as imposing any financial obligation on the part of the Financiers.

(i) No provision of this PoC shall be construed so as to run counter to, or modify, the respective statutory or charter obligations of any Financier, per such Financier's applicable regulatory framework.

Notices

Any notice of request required or permitted to be given or made under this PoC will be in writing. Such notice or request will be deemed to have been duly given or made when it will be delivered by hand or mail, facsimile or electronic mail to the party to which it is required to permitted to be given or made at such party's address specified below:

For World Bank:

International Bank for Reconstruction and Development
1818 H Street, N.W.
Washington, D.C. 20433
United States of America
Phone: 1- 202-473-1000
Fax: 1-202-477-6391

For EIB:

European Investment Bank
Attention: </>
98-100, boulevard Konrad Adenauer
L-2950 Luxembourg
Phone: (+352) 43 79 1
Fax: (+352) 43 77 04

IN WITNESS WHEREOF, the parties hereto, acting through their duly authorized representatives, have caused this PoC to be signed in their respective names as of the date first hereinabove mentioned.

EUROPEAN INVESTMENT BANK	INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
By _____	By _____
Name: Title: 98-100 Avenue Konrad Adenauer L-2950 Luxembourg	Name: Title: 1818 H Street, NW Washington, D.C. 20433 USA

EIB's Covenant of Integrity

COVENANT OF INTEGRITY

to the Borrower / Promoter

from a Tenderer, Contractor, Supplier or Consultant to be attached to its Tender

"We declare and covenant that neither we nor anyone, including any of our directors, employees, agents, joint venture partners or sub-contractors, where these exist, acting on our behalf with due authority or with our knowledge or consent, or facilitated by us, has engaged, or will engage, in any Prohibited Conduct in connection with the tendering process or in the execution or supply of any works, goods or services for [ ] (the "**Contract**") and covenant to so inform you if any instance of any such Prohibited Conduct shall come to the attention of any person in our organisation having responsibility for ensuring compliance with this Covenant.

We shall, for the duration of the tender process and, if we are successful in our tender, for the duration of the Contract, appoint and maintain in office an officer, who shall be a person reasonably satisfactory to you and to whom you shall have full and immediate access, having the duty, and the necessary powers, to ensure compliance with this Covenant.

If (i) we have been, or any such director, employee, agent or joint venture partner, where this exists, acting as aforesaid has been, convicted in any court of any offence involving a Prohibited Conduct in connection with any tendering process or provision of works, goods or services during the five years immediately preceding the date of this Covenant, or (ii) any such director, employee, agent or a representative of a joint venture partner, where this exists, has been dismissed or has resigned from any employment on the grounds of being implicated in any Prohibited Conduct, or (iii) we have been, or any of our directors, employees, agents or joint venture partners, where these exist, acting as aforesaid has been excluded by the EU Institutions or any major Multi-lateral Development Bank (including World Bank Group, African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, European Investment Bank or Inter-American Development Bank) from participation in a tendering procedure on the grounds of Prohibited Conduct, we give details of that conviction, dismissal or resignation, or exclusion below, together with details of the measures that we have taken, or shall take, to ensure that neither this company nor any of our directors, employees or agents commits any Prohibited Conduct in connection with the Contract.

In the event that we are awarded the Contract, we grant the Project Owner, the European Investment Bank (EIB) and auditors appointed by either of them, as well as any authority or European Union institution or body having competence under European Union law, the right of inspection of our records and those of all our sub-contractors under the Contract. We accept to preserve these records generally in accordance with applicable law but in any case for at least six years from the date of substantial performance of the Contract."

For the purpose of this Covenant, all capitalized terms have the meaning ascribed to them in EIB's Guide to Procurement, Annex 3 (June 2011 version)[35]

[35] http://www.eib.org/attachments/thematic/procurement_en.pdf