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# **Western Balkans Investment Framework Infrastructure Project Facility Technical Assistance 8 (IPF 8)**

TA2018148R0 IPA

Mediterranean Corridor, Bosnia and Herzegovina - Croatia CVC Road Interconnection, Subsection: Konjic (Ovcari) - Prenj Tunnel - Mostar North

Gap Analysis & ESIA Disclosure Pack

WB20-BiH-TRA-02 Component 1

Volume 5: Non-technical Summary

October 2023



# Western Balkans Investment Framework (WBIF)

## Infrastructure Project Facility Technical Assistance 8 (IPF 8)

### Infrastructures: Energy, Environment, Social, Transport and Digital Economy

TA2018148 R0 IPA

#### Volume 5: Non-technical Summary

October 2023

The Infrastructure Project Facility (IPF) is a technical assistance instrument of the Western Balkans Investment Framework (WBIF) which is a joint initiative of the European Union, International Financial Institutions, bilateral donors and the governments of the Western Balkans which supports socio-economic development and EU accession across the Western Balkans through the provision of finance and technical assistance for strategic infrastructure investments. This technical assistance operation is financed with EU funds.

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## List of abbreviations

Abbreviation	Meaning
<b>BE</b>	Biodiversity Expert
<b>BHMAC</b>	Bosnia and Herzegovina Mine Action Centre
<b>BiH</b>	Bosnia and Herzegovina
<b>BMP</b>	Biodiversity Management Plan
<b>BOMP</b>	Biodiversity Offset Management Plan
<b>CESMP</b>	Construction Environmental and Social Management Plan
<b>CH</b>	Critical Habitat
<b>CSOP</b>	Construction Site Organisation Plan
<b>CWMP</b>	Construction Waste Management Plan
<b>DCWMP</b>	Detailed Construction Waste Management Plan
<b>E&amp;S</b>	Environmental and Social
<b>EBRD</b>	European Bank for Reconstruction and Development
<b>EBRD ESP</b>	EBRD's Environmental and Social Policy
<b>EIA</b>	Environmental Impact Assessment
<b>EIB</b>	European Investment Bank
<b>EPRP</b>	Emergency Preparedness and Response Plan
<b>ESAP</b>	Environmental and Social Action Plan
<b>ESIA</b>	Environmental and Social Impact Assessment
<b>ESMP</b>	Environmental and Social Management Plan
<b>EU</b>	European Union
<b>FBiH</b>	Federation of Bosnia and Herzegovina
<b>FIDIC</b>	International Federation of Consulting Engineers
<b>FMoET</b>	Federal Ministry of Environment and Tourism
<b>FMoPP</b>	Federal Ministry of Physical Planning
<b>GHG</b>	Greenhouse Gas
<b>GMP</b>	Groundwater Management Plan
<b>HNC</b>	Herzegovina-Neretva Canton
<b>IFC</b>	International Finance Corporation
<b>IFI</b>	International Finance Institution
<b>ISMP</b>	Invasive Species Management Plan
<b>JPAC</b>	Motorways of the Federation of Bosnia and Herzegovina
<b>LARF</b>	Land Acquisition and Resettlement Framework
<b>LARP</b>	Land Acquisition and Resettlement Plan
<b>LC</b>	Local Community
<b>LCO</b>	Local Community Organisation
<b>LHRP</b>	Land and Habitat Restoration Plan
<b>MMP</b>	Materials Management Plan
<b>NGO</b>	Non-governmental Organisation
<b>NTS</b>	Non-technical Summary
<b>OEPRP</b>	Operational Emergency Preparedness and Response Plan
<b>OESMP</b>	Operational Environmental and Social Management Plan
<b>OHS</b>	Occupational Health and Safety
<b>PIU</b>	Project Implementation Unit
<b>PR</b>	Performance Requirement
<b>RCMP</b>	River Crossing Management Plan

<b>Abbreviation</b>	<b>Meaning</b>
<b>SEP</b>	Stakeholder Engagement Plan
<b>TMP</b>	Traffic Management Plan
<b>TSMP</b>	Topsoil Management Plan
<b>UXO</b>	Unexploded Ordinance

# 1 Introduction

**Project Context.** PC Motorways of the Federation of Bosnia and Herzegovina (the Company or “JPAC”) is a public company from the Federation of Bosnia and Herzegovina (FBiH) in charge of management of motorway construction and management, maintenance, and protection of motorway operation in FBiH. One of the Company’s key projects is the development of the motorway which is part of the Trans-European Corridor Vc connecting Budapest (Hungary) and Port of Ploce (Croatia). The total length of Corridor Vc in FBiH is approximately 335 km.

The EBRD as the lead IFI and the European Investment Bank (“EIB”) as the co-financier are now considering providing financing to JPAC to construct a **new motorway on subsection Konjic (Ovcari) - Prenj Tunnel - Mostar North of 35.26 km on Corridor Vc (the “Project”).**

**Rationale of the Project.** Corridor Vc is considered FBiH’s key transport route, running north-south and connecting Budapest (Hungary) to Port of Ploce (Croatia). The main aim of the Project is to improve transport connections between FBiH and the surrounding countries to promote economic development.

**Project Category.** In accordance with EBRD’s Environmental and Social Policy (ESP 2019), the Project is classified as “Category A” as it could result in potentially significant adverse future environmental and/or social (E&S) impacts, which, at the time of categorisation, cannot readily be identified or assessed, and which, therefore, require a formalised and participatory environmental and social impact assessment process.

**Project Disclosure Package.** Under Lenders’ requirements, the following will comprise the disclosure package for the Konjic (Ovcari) - Prenj Tunnel - Mostar North subsection (in English and Local language):

- > Volume 1: Environmental and Social Impact Assessment (ESIA) Report (including the Environmental & Social Management Plan (ESMP))
- > Volume 2: Technical Annexes to the ESIA Report
- > Volume 3: Environmental and Social Action Plan (ESAP)
- > Volume 4: Biodiversity Management Plan (BMP)
- > Volume 5: Non-technical Summary (NTS) – *this volume*
- > Volume 6: Stakeholder Engagement Plan (SEP)
- > Volume 7: Land Acquisition and Resettlement Framework (LARF)

This document is a Non-technical Summary (NTS) of the Project’s E&S assessment. The NTS provides a Project summary in non-technical language covering the Project background and description, legal requirements, baseline conditions in the Project area, E&S impacts with mitigation measures needed to structure the Project to meet the national requirements, EBRD E&S Policy (2019) Performance Requirements and EIB’s Environmental and Social Standards (2022), as well as the disclosure and communication requirements of the Project.

## 2 Project Description

**Project Details.** The subsection Konjic (Ovcari) - Prenj Tunnel - Mostar North is further divided and will be designed and constructed under three separate contracts as follows:

- > Konjic (Ovcari) - Prenj Tunnel
- > Prenj Tunnel including Southern Connection to the Main Road M17
- > Prenj Tunnel - Mostar North Interchange.

Key project details are provided in table below.

Table 1: Project details

Aspect	Details
<b>Project name</b>	Mediterranean Corridor Bosnia and Herzegovina - Croatia CVc Road Interconnection, Subsection: Konjic (Ovcari) - Prenj Tunnel - Mostar North
<b>Country</b>	Bosnia and Herzegovina
<b>Location</b>	City of Konjic and City of Mostar
<b>Purpose</b>	Construction of Trans-European Corridor Vc connecting Budapest (Hungary) and Port of Ploce (Croatia)
<b>Length of the Project</b>	<p>Konjic (Ovcari) - Prenj Tunnel, L=11.50 km</p> <p>Prenj Tunnel, L=10.16 km + 1.20 km of the route before the tunnel</p> <p>Prenj Tunnel - Mostar North, L=12.40 km</p> <p><i>Total length of the subsection from Konjic (Ovcari) to Mostar North, L=35.26 km</i></p> <p>Northern Access Road to Prenj Tunnel, L=6.0 km</p> <p>Southern Access Road to Prenj Tunnel, L=6.62 km</p> <p>Southern Connection to the Main Road M17 (Konjic Bypass), L=2.50 km</p>
<b>Project components</b>	<ul style="list-style-type: none"> <li>&gt; Ovcari interchange with side toll station "Ovcari"</li> <li>&gt; Viaduct No.1, L=463.50 m</li> <li>&gt; Viaduct No.2, L=60 m</li> <li>&gt; Viaduct No.3, L=480 m</li> <li>&gt; Tunnel T1, L=682 m (left roadway), L=580 m (right roadway)</li> <li>&gt; Tunnel T2, L=1,171.30 m (left roadway), L=1,160 m (right roadway)</li> <li>&gt; Viaduct No.4, L=540 m (left roadway), L=605.20 m (right roadway)</li> <li>&gt; Konjic South interchange with side toll station "Konjic"</li> <li>&gt; Rest area Konjic</li> <li>&gt; Viaduct No.5, L=590 m (left roadway), L=610 m (right roadway)</li> <li>&gt; Tunnel Prenj - T3, L=10,160 m</li> <li>&gt; Tunnel Klenova Draga - T3A, L=742 m (left roadway), L= 785 m (right roadway)</li> </ul>



Aspect	Details
	<ul style="list-style-type: none"> <li>&gt; Viaduct No. 8, L=351 m</li> <li>&gt; Tunnel Gradina - T4; L=642 m (left roadway), L= 639 m (right roadway)</li> <li>&gt; Viaduct No. 9; L=332 m (left roadway), L= 338 m (right roadway)</li> <li>&gt; Viaduct No 9A: L=148 m (right roadway only)</li> <li>&gt; Viaduct No. 10; L=360 m (left roadway), L= 445 m (right roadway)</li> <li>&gt; Rest area</li> <li>&gt; Tunnel Orlov Kuk - T5; L=2,290 m (left roadway), L= 2,210 m (right roadway)</li> </ul>
<b>Technical characteristics</b>	<ul style="list-style-type: none"> <li>&gt; Calculated speed, <math>V_r = 120</math> km/h (<math>V_r = 100</math> km/h)</li> <li>&gt; Minimum radius of horizontal curve on the open route, <math>R_{min} = 700</math> m</li> <li>&gt; Minimum radius of horizontal curve in the tunnel, <math>R_{min} = 1,000</math> m</li> <li>&gt; Longitudinal slope, <math>I_{max} = 4\%</math></li> <li>&gt; Vertical convex curve radius, <math>R_{ks} = 12,000</math> (17,000) m</li> <li>&gt; Vertical concave curve radius, <math>R_{kv} = 6,000</math> (8,000) m</li> <li>&gt; Traffic lanes, <math>2 \times (2 \times 3.75)</math> m</li> <li>&gt; Transverse strip edge profile along the dividing strip (green area included), <math>2 \times 0.50</math> m</li> <li>&gt; Edge strip along the stop lanes (stop lanes included), <math>2 \times 0.25</math> m</li> <li>&gt; Dividing lane, 4.00 m</li> <li>&gt; Emergency lane = <math>2 \times 2.50</math> m</li> <li>&gt; Embankment, 1.50 m + gutter</li> <li>&gt; Width of embankment (berm), 3.00 m, in deep cut min. 3.00 m</li> <li>&gt; Motorway profile, <math>4.7 + 0.10</math> m</li> <li>&gt; Local road profile, min 2.50 m</li> <li>&gt; Relevant axle load, 115 kN</li> </ul>

**Main Motorway Alignment.** The subsection Konjic (Ovcari) - Prenj Tunnel - Mostar North Interchange (Vrapcici) begins in the north with an interchange located in the Ovcari settlement, which will allow for a connection between the motorway and the existing main road M17. After the interchange, the motorway crosses the Sipad industrial zone at the northern entrance to the City of Konjic. Moving forward, the subsection passes through slopes where steep cuts are planned, and a viaduct over the Tresanica River has been designed to cross over to the opposite side of the M17.

Right after the viaduct ends, the motorway route enters a slope that leads to two tunnels. Upon exiting the tunnels, the route crosses the Neretva River and a local road via a viaduct. After crossing to the opposite side, the motorway continues along the slopes behind the Bijela settlement, up to the Mladeskovici settlement, where the Konjic South Interchange is located. Moving forward, the motorway route runs at the base of the slope above the settlements of Bijela and Gornja Bijela until the end of the section. The route then follows the slopes parallel to the Rakov Laz shooting range of the company Igman d.d. and continues through an uninhabited green landscape until it reaches the slopes of

Prenj Mountain. At this point, the tunnel under the Prenj Mountain begins and ends within the territory of the City of Mostar.

Upon exiting the Prenj Mountain tunnel, the motorway route winds its way southward through the mountain curves towards the City of Mostar, using a system of cuts and bridges through uninhabited mountain areas. The road crosses the valley on an embankment and enters the Klenova Draga Tunnel located on the western cliffs of the gorge. After the Klenova Draga Tunnel, the next viaduct begins and transitions into a tunnel. This is also where the viaduct over Badnjena Draga near Seliste begins, which runs parallel to the settlement.

The motorway route then continues northeast of the settlement, running along the edges of the hill north of Podgorani, where the bridge over Seocka Draga begins, leading the route to Dolac, north of Humilisani. Moving forward, the route takes a slight semicircular path around the settlement of Humilisani along the slopes of Porim. Below Humilisani, the route continues south and enters the tunnel under Sljemen, exiting into the Kuti area, where the Mostar (north) exit ramp is located. The interchange is situated approximately 1 km east of the Mostar municipal solid waste landfill Uborak-Budjevci, in an uninhabited area.

The following figure shows the location of the entire subsection.

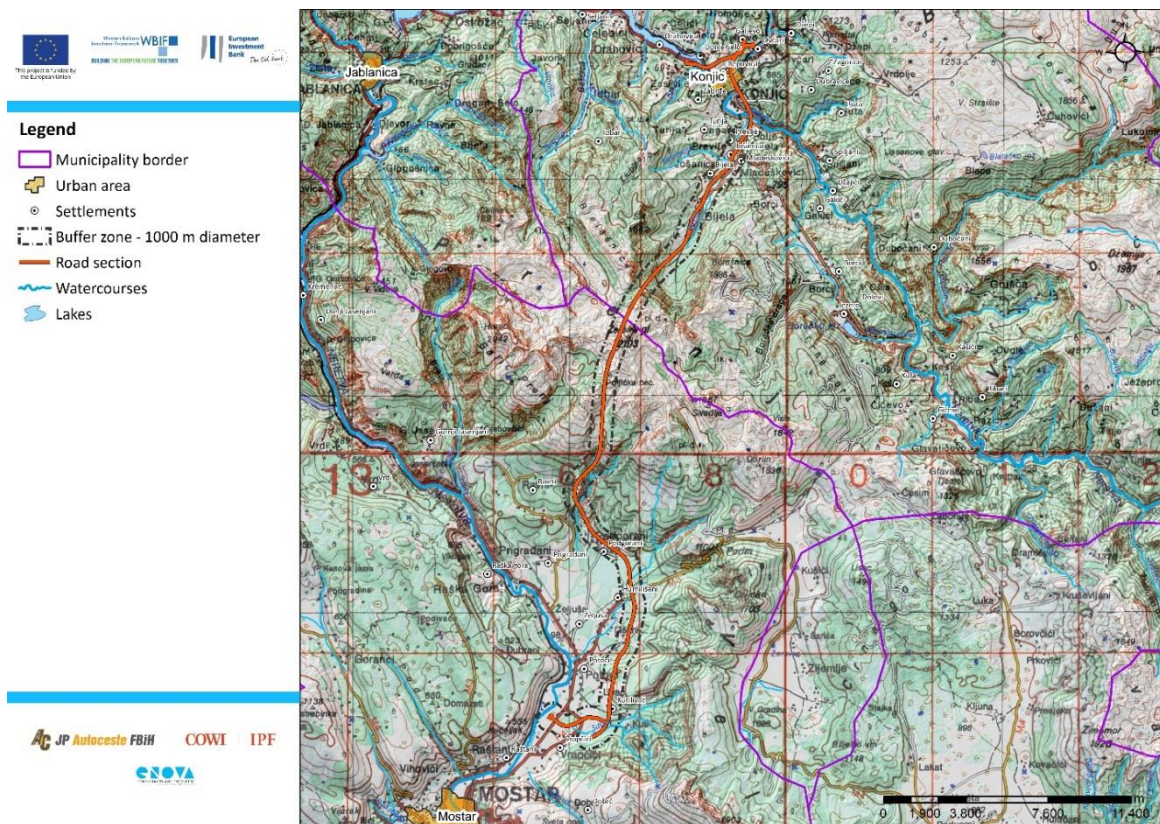


Figure 1: Location of the Konjic (Ovcari) - Prenj Tunnel - Mostar North subsection on the topographic map

**South Connection to Main Road M17.** The southern connection to the main road M17, hereinafter referred to as the Konjic Bypass, serves to bypass the urban area of Konjic and will connect the motorway at Ovcari Interchange to the

M17 leading to Jablanica. This bypass enables direct access to the motorway for M17 traffic without entering the urban area of Konjic.

The Konjic Bypass begins with an exit from the Ovcari Interchange, after which the road goes through an embankment and reaches the first viaduct. The road then enters a tunnel and emerges from it to go through more embankments, finally reaching a bridge that crosses over the existing Sarajevo-Capljina railway, the Neretva River, and the main road M17. Upon crossing, the Konjic Bypass connects to the M17, completing the route.

**Access Roads to Tunnel Prenj.** The northern access road is divided into two sections, NR1 and NR2. NR1 serves as an access road that connects to the existing regional road R435. At the location of NR1, there is already an existing road that passes through several populated areas. However, this existing road is only 3.5 to 4.5 meters wide, and thus will require widening to suit the needs of the Project. The end of section NR1 is located just before the shooting range of the company Igman Konjic.

The southern access road to the Prenj Tunnel is divided into six sections (SR1-SR6), each with their own unique characteristics and technical solutions. SR1 is an access road that connects to the existing main road M17 and the HP Investing industrial area. It begins at the interchange located in front of the HP Investing gate. SR2 is 1.16 km long and passes through a settlement. SR3 has two parts, with the first part being a relocated stretch of the existing road. The road will need to be widened, and a T-interchange will be constructed for an appropriate connection. SR4 is a newly designed access construction road that partly lies on the existing roadway. The existing road, which is approximately 2 m wide, will be widened, and the longitudinal slope will be modified. SR4 is considered the most challenging section for access to the southern portal of the Prenj Tunnel. SR5 is located between SR4, which features serpentines, and SR6, which is characterized by an operational plateau. Finally, SR6 is situated in a greenfield area.

**Surface Water Drainage System.** The water from the road will be directed into a concrete gutter and further into the drain and collector. Water from the collector will be transported in pipes to the oil and grease separators and discharged into the recipient. The road will also have special drains with sand traps to help prevent blockages. In areas where the road crosses small streams, culverts will be used to allow the water to flow freely and prevent flooding.

**Wastewater Treatment System.** Water that runs off the road surface will be collected in an enclosed drainage system and treated in the oil separators before it is released back into the environment. The method for protecting water is based on the risks associated with the area the motorway passes through, and measures are chosen based on the specific terrain and other relevant conditions, as follows:

- > Wastewater treatment in the zone of low risk of pollution: Water that runs off the road will be directed through the storm sewer system and treated with prefabricated separators for oil and light liquids that are

designed to capture any pollutants. The separator contains a filter that automatically closes when it needs cleaning.

- > Wastewater treatment in zones of moderate and high risk of pollution: Water is purified using oil and grease separators dimensioned based on the amount of water expected. The separators used in these areas are designed to remove 100% of the pollutants, and it contains a special system that separates solid particles. In case of an accidental spill of light liquids, there is a special collector to capture the wastewater.

**Noise Barriers.** The noise barriers will be used for the purpose of reducing the negative impact of noise in urban areas. The barriers must meet specific standards for noise absorption and reflection, as well as corrosion, frost, and UV radiation resistance. The use of prefabricated systems is preferred to speed up construction and lower costs. The barriers must last for more than 20 years and have a unified system for production to meet maintenance requirements.

**Fences.** Two types of fences will be used along motorway alignment, as follows:

- > Elastic-reflective fence: Protective fences are structures built alongside roads to prevent vehicles from veering off the road and keep them on it. They can be made of steel, concrete, or a combination of materials, and are installed depending on factors such as traffic intensity, road infrastructure, and danger areas. The fences must have reflective markings and be installed according to local legislation and EN 1317 standards.
- > Protective wire fence: A wire fence will be installed along the entire motorway alignment, except where there are already barriers that can replace it. The fence's elements will be made of hot-dip galvanized steel, according to European Standards, to ensure durability and protection against corrosion.

**Spoil Disposal Sites.** The construction of the motorway is expected to generate approximately 6.9 million m<sup>3</sup> of spoil material. Out of this, 3.4 million m<sup>3</sup> of material will be reused in constructing embankments, leaving 3.5 million m<sup>3</sup> of spoil material to be treated. The treatment plan involves disposing of part of the material on designated disposal sites and using the remaining portion for landscaping activities. Two proposed disposal site locations are the Municipal Solid Waste Landfill in Konjic, upon request of the Municipality of Konjic, and Humilisani in Mostar. Additionally, a significant amount of material will be reused for landscaping purposes around the 20-meter-high embankments in the area of the northern portal of the Tunnel Prenj on the Konjic side.

**Borrow Pits.** The preliminary design documents do not provide information on material requirements and potential borrow pit locations. The decision on where to locate borrow pits ultimately rests with the Contractor. It will be the Contractor's responsibility to select the source of the required material. An inventory of licensed pits is available for the northern section. Of note are those located within the proposed Natura 2000 and Emerald protected areas or water protection zones. Should the Contractor opt to open new borrow pits instead of

purchasing material, they must comply with the mitigation measures outlined in the ESIA.

## 3 Project Background

### 3.1 History of Project Development

Information of the key milestones in the Project development are given in the table below.

Table 2: Project milestones

Year	Activity	Description
2003	BiH Government Decision on public interest for the motorway on Corridor Vc	The BiH Ministry of Transport and Communications adopted the Decision on public interest for construction of the motorway on Corridor Vc through BiH, and started the procedure of development of spatial, planning and technical documentation for the motorway.
2006	Feasibility Study of Motorway on Corridor Vc	<p>Seven alternative solutions of the road route for this subsection were considered: (0) no-project scenario, (1) improvement of the existing M17 road to motorway standards, (2) section after Jablanica follows the route along the Neretva River, (2A) the same as under (2) but with route from Jablanica going further away from Neretva river, (3) section after Jablanica very distant from the River Neretva (4) route which does not pass next to Jablanica and (5) connects to Mostar through a very long tunnel.</p> <p>Based on four criteria: (a) technical and operational criteria, (b) investment costs, (c) time and facilities construction, and (d) the spatial criterion, alternative (3) was selected. The 43.35 km long alternative (5) that included the construction of a 12 km long tunnel through Mountain Prenj was assessed as unfavourable at the time due to length of the tunnel and high construction and maintenance costs.</p>
2006	Environmental Impact Assessment Study - LOT 3: Sarajevo South (Tarcin) - Mostar North	An initial Environmental Impact Assessment (EIA) study was developed by C. Lotti & Asociati, SPT, TZI-Inzenjering and Energoinvest in 2006. Seven alternative solutions for the subsection route were explored in Multi-Criteria Analyses I, II and III. The route passing close to the community of Jablanica and looping around the Prenj mountain range (Alternative 3) was recommended.
2006	Project documentation verification process	The Ministry of Transport and Communications of BiH defined two new alternatives: (i) construction of a tunnel through the Mountain Prenj (ii) route in the valley of Idbar River. The Government of FBiH issued a Conclusion that JPAC should further explore the alternative route through the Mountain Prenj.
2011	Adoption of Spatial Plan for the Area of Special Interest for FBiH "Motorway on Corridor Vc" 2008-2028"	The Government of FBiH adopted the <i>Spatial plan for an area of special interest for FBiH "Motorway on corridor Vc" 2008-2028</i> . More information on the process of public consultations is provided in section section <b>Error! Reference source not found. (Error! Reference source not found.)</b> .
2014	Analysis of the Preliminary Design (PD) of Motorway on Corridor Vc: Subsection	In 2014 companies DIVEL, Sarajevo and IG, Banja Luka prepared the Analysis of the Preliminary Design (PD) of the Motorway on Corridor Vc: Subsection Konjic -

Year	Activity	Description
	Konjic - Jablanica - Mostar North	Jablanica - Mostar North for the previous approved alternative (3) from Bradina (Zukici) to Mostar. The conclusion of the analysis was that this alternative is very expensive and difficult to construct, and therefore an alternative alignment with the 10 km long tunnel through the Mountain Prenj was suggested. This change would result in an 18 km shorter section and savings of 300 million euros. The recommendation to JPAC was to change the alignment and prepare a new PD for the alternative route involving the construction of a 10 km long tunnel through the Mountain Prenj.
<b>2016</b>	Revised Preliminary Design of Motorway on Corridor Vc, Section: Konjic - Mostar North	In March 2016 DIVEL, Sarajevo prepared the revised PD of Motorway on Corridor Vc, Section: Konjic - Mostar North for the alternative involving construction of 10 km long Tunnel Prenj. According to this PD the previously planned connection to the motorway for the Municipality of Jablanica in the settlement of Glogosnica (Jablanica), in the Prenj Mountain range, is not foreseen.
<b>2016</b>	Study on geological, hydrogeological, and geotechnical investigation works for the tunnel Prenj	WINNER PROJECT, Sarajevo prepared the Study on geological, hydrogeological, and geotechnical investigation works for the tunnel Prenj in February 2016. The study only proposes a program of investigative works.
<b>2016</b>	EIA Study for the revised alternative named "the alternative through the Mountain Prenj".	<p>Zagrebinspekt, Mostar and IG, Banja Luka prepared new local EIA Study for the revised alternative named „the alternative through the Mountain Prenj“. The EIA confirmed that the alternative 5 (the alternative that includes tunnel Prenj), has lower impacts on the environment.</p> <p>The public hearing for the EIA Study was held on 23<sup>rd</sup> of April 2018 in Municipality Hall in Konjic, and on 30<sup>th</sup> of April 2018 in Mostar City Hall. More information on the process of public consultations is provided in section <b>Error! Reference source not found. (Error! Reference source not found.)</b>.</p> <p>In December 2018, the Federal Ministry of Environment and Tourism (FMOET) issued the approval of the EIA study, but an Environmental Permit was not issued. The main reason was the lawsuit filed by the Municipality of Jablanica which requested the connection to the motorway which is not foreseen by the Preliminary Design. On June 25<sup>th</sup>, 2021, the cantonal court in Sarajevo issued a verdict annulling the Conclusion of the Federal Ministry of Environment and Tourism (FMOET) that had approved the EIA Study. The court has ruled that the EIA procedure must be carried out again.</p>
<b>2016</b>	Preliminary Design for Prenj Tunnel	DIVEL, Sarajevo prepared a Preliminary Design for two variants of the Prenj Tunnel in February 2016. Variant I envisaged the construction of a two-lane tunnel with a minimum distance between axles of 25.0 m, and Variant II envisaged the construction of a tunnel with two-way traffic.
<b>2016</b>	The Expropriation Study for the Prenj Tunnel	The Expropriation Study for the Prenj Tunnel was prepared in December 2016 (and will need to be updated due to the lapse of time), and this subsection was declared to be of public interest in July 2022 by the

Year	Activity	Description
		Government of FBiH. Expropriation Studies have not been developed yet for any of the other three subsections.
2017	Adoption of the „the alternative through the Mountain Prenj“.	In 2017 the FBiH Government, the House of Representatives, and the House of Peoples of the Parliament of FBiH, adopted the suggested alternative which is more economic and offers a solution for the motorway passage through the Prenj Mountain.
2017	Adoption of amendments to the Spatial Plan for the Area of Special Interest for FBiH “Motorway on corridor Vc” 2008-2028	<i>Spatial Plan for the Area of Special Interest for FBiH „Motorway on corridor Vc“</i> was adopted by the FBiH Parliament thus setting out the final alignment of the motorway in BiH (Chapter <b>Error! Reference source not found., Error! Reference source not found.</b> ). Prior to the adoption of the Spatial Plan, based on the request by the Municipality of Jablanica, the House of People of the Parliament of FBiH adopted the conclusion that the Government of FBiH, responsible ministries and JPAC shall plan the optimisation, modernisation and improvement of traffic flow by ensuring the best alternative for the connection to Motorway on Corridor Vc with interchange in municipality of Jablanica for the municipalities on the routes (i) Jablanica-Prozor Rama-Gornji Vakuf-Uskoplje-Bugojno-Donji Vakuf-Jajce, (ii) Tomislavgrad-Posusje-Jablanica, as well as (iii) from the Konjic direction in parallel with the construction of tunnel Prenj.
2020	Additional geological, geotechnical, geophysical, hydrological, and hydrogeological investigation works relevant for the construction of the Prenj Tunnel	WINNER PROJECT, Sarajevo carried out additional investigation works and developed in June 2020 the Study on results of geophysical, hydrogeological, and hydrological investigation in the framework of supplemental detailed geological, engineering-geological, geotechnical, geophysical, hydrological, and hydrogeological research and investigation on the section Konjic (Ovcari) - entrance to the Prenj Tunnel.
2021	Verdict of the Cantonal Court in Sarajevo in the lawsuit by the Municipality of Jablanica against the Federal Ministry of Ecology and Tourism	The Environmental Permit could not be obtained due to a lawsuit filed by the Municipality of Jablanica in 2019. In 2021, the Cantonal Court in Sarajevo annulled the conclusion of the Federal Ministry of Environment and Tourism and required a new EIA procedure to be carried out.
2021	Technical description of subsections Konjic (Ovcari)-Prenj Tunnel and Prenj Tunnel-Mostar North	In 2021 Technical descriptions of two subsections: Ovcari Interchange to Tunnel Prenj and Tunnel Prenj to Mostar North Interchange, were prepared by AIK and IPSA Institute respectively.  Prepared Technical descriptions proposed some changes in technical elements of the routes from 2016 Preliminary Design.
2022	Preliminary EIA (Step 1 of the national EIA procedure)	In January 2022, JPAC conducted a preliminary environmental impact assessment for the subsection from Konjic (Ovcari) to Tunnel Prenj to Mostar North. The purpose of the preliminary EIA was to define the scope and content of an Environmental Impact Assessment Study. In February 2022, the FMOET published the preliminary EIA conducted by Enova doo Sarajevo on its website, making it available to the public. Based on the consultations carried out, FMOET



Year	Activity	Description
		issued a Decision on the need for, content, and scope of the EIA Study on April 12, 2022.
<b>2022</b>	Comparative analysis of alignments from 5+240 to Tunnel Prenj	As part of Infrastructure Project Facility, Technical Assistance 8 (IPF 8), during the March 2022 AIK Inzenjering, Banovici prepared comparative analysis of alignments from 5+240 to Tunnel Prenj. Initial results showed that the 2016 PD alignment passes through several zones of landslides, unstable soils in cut that present major geotechnical and hydrological risks that would need to be mitigated with major stability works and subsequent maintenance. As a result, this document compared an alternative alignment that has been developed to the Concept stage that would not only reduce the geotechnical risks but would also improve the impact on hydrology, reduce the requirement for waste areas, and also improve the motorway geometry on the approach to the Prenj tunnel itself.
<b>2022</b>	Preliminary Design of the alignment, Ovcari Interchange-Prenj Tunnel	Based on the results of Comparative analysis of alignment, the second variant is chosen. AIK Inzenjering Banovici developed the Preliminary Design of the route alignment for the subsection from Ovcari to the entrance of Prenj Tunnel. The other components of the design are still under development.
<b>2022</b>	Conceptual Design of South connection to main road M17	AIK Inzenjering, Banovici, together with development of PD from Ovcari to Prenj Tunnel, prepared the Conceptual Design for the alignment of south connection to main road M17 (i.e., Konjic Bypass).
<b>2022</b>	FBiH Government Decision on public interest for the motorway on Corridor Vc subsections Konjic (Ovcari)-Prenj Tunnel and Prenj Tunnel-Mostar North	In June 2022, the Government of FBiH made two decisions designating the construction of two subsections of Corridor Vc as being of public interest: one for the subsection Konjic (Ovcari)-Prenj Tunnel and the second for the subsection Prenj Tunnel-Mostar North.
<b>2022</b>	FBiH Government Decision on public interest for the preparatory works related to the construction of the motorway on Corridor Vc, subsection Tunnel Prenj	In November 2022, the Government of FBiH made a decision designating the construction of Tunnel Prenj as being of public interest. This decision is made to allow for the start of the preparatory works including expropriation process.
<b>2022</b>	Preliminary and Main Design for access roads to Prenj Tunnel	Design QC Sarajevo prepared in August 2022 the Preliminary and Main Design for the construction of access roads to Prenj Tunnel.
<b>2022</b>	Comparative analysis of alignments from Tunnel Prenj Exit to Tunnel T4	As part of Infrastructure Project Facility, Technical Assistance 8 (IPF 8), during the September 2022 IPSA Institute Sarajevo prepared comparative analysis of alignments from Tunnel Prenj exit to Tunnel T4. Comparative analyses consider Variant 1 through Klenova Draga valley, which is an adaptation of the alignment of the 2016 PD. Variant 2 diverts the Concept alignment within Prenj Tunnel over the final 3 km (through more favourable geological conditions) and bypasses Klenova Draga entirely with an additional tunnel 300 m to the south of the Prenj tunnel exit.

Year	Activity	Description
2022	Preliminary Design of the alignment, Exit from Prenj Tunnel-Mostar North	Based on the results of comparative analysis of alignment, the second variant was chosen. IPSA Institute Sarajevo developed the Preliminary Design of the route alignment for the subsection from Tunnel Prenj to Mostar North. The other components of the design are still under development.
2022	Preliminary Design of the Tunnel Prenj	In November 2022, JPAC selected a contractor for development of the new Preliminary Design with elements of Main Design for the Prenj Tunnel.

## 3.2 Legal Aspects and Compliance with Relevant Laws and Policies

**National Requirements.** Implementation of the Project requires compliance with a set of national laws and bylaws on E&S issues, physical planning, construction and roads maintenance and management, construction of Motorway on the Corridor Vc, health and safety at work, labour, and land acquisition and resettlement.

With regard to motorway construction, the key relevant laws are *Law on Motorway on Corridor Vc*<sup>1</sup>, *Law on Roads of FBiH*<sup>2</sup> and *Decision on the Guidelines for the Design, Construction, Maintenance and Supervision of Roads in FBiH*<sup>3</sup>.

With regard to permitting requirements, the key laws are *Law on Environmental Protection*<sup>4</sup> and the *Regulation on Projects for Which an EIA is Mandatory and Projects for Which the Need for EIA is Decided*<sup>5</sup>, and construction of motorways is subject to mandatory EIA and permitting by the Federal Ministry of Environment and Tourism (FMoET). The water permitting procedure in FBiH is regulated by the *Law on Waters*<sup>6</sup> and the *Regulation on Content, Scope, Conditions, Ways of Issuing and Archiving of Water Documents*<sup>7</sup>. According to the *Law on Motorway on Corridor Vc*, the request for obtaining an Urban Consent is submitted by the investor to the Federal Ministry of Physical Planning (FMoPP). For the construction of motorway on Corridor Vc, the Urban Consent is valid until the Construction Permit is issued. The request for obtaining a Construction Permit is submitted to FMoPP. Construction Permit is issued for a 5-year period. Motorway sections may be used only after obtaining a Use Permit.

**EBRD Requirements.** EBRD’s Environmental and Social Policy 2019 (ESP) details the commitments of the Bank to promote environmentally sound and sustainable

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<sup>1</sup> Official Gazette of FBiH, No. 8/13  
<sup>2</sup> Official Gazette of FBiH, No. 12/10, 16/10 and 66/13  
<sup>3</sup> Official Gazette of FBiH, No. 80/06  
<sup>4</sup> Official Gazette of FBiH, No. 15/21  
<sup>5</sup> Official Gazette of FBiH, No. 51/21  
<sup>6</sup> Official Gazette of FBiH, No. 70/06  
<sup>7</sup> Official Gazette of FBiH, No. 31/15, 55/19 and 41/20

development. The Bank has defined specific Performance Requirements (PRs) for key areas of E&S issues and impacts as listed below:

- > PR 1: Assessment and Management of E&S Risks and Impacts
- > PR 2: Labour and Working Conditions
- > PR 3: Resource Efficiency and Pollution Prevention and Control
- > PR 4: Health, Safety and Security
- > PR 5: Land Acquisition, Restrictions on Land Use and Involuntary Resettlement
- > PR 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources
- > PR 7: Indigenous Peoples (not applicable to this Project)
- > PR 8: Cultural Heritage
- > PR 9: Financial Intermediaries (not applicable to this Project)
- > PR 10: Information Disclosure and Stakeholder Engagement

**EIB Standards.** EIB requires that all the projects it is financing are acceptable in E&S terms by applying appropriate safeguards to all its operations. The EIB Environmental and Social Standards (2022) provides an operational translation of those standards grouped across 11 thematic areas, as follows:

- > Standard 1: Environmental and Social Impacts and Risks
- > Standard 2: Stakeholder Engagement
- > Standard 3: Resource Efficiency and Pollution Prevention
- > Standard 4: Biodiversity and Ecosystems
- > Standard 5: Climate Change
- > Standard 6: Involuntary Resettlement
- > Standard 7: Vulnerable Groups, Indigenous People and Gender (Indigenous People – not applicable to this project)
- > Standard 8: Labour Rights
- > Standard 9: Health, Safety and Security
- > Standard 10: Cultural Heritage
- > Standard 11: Intermediated Finance (not applicable to this project).

**EU Requirements.** EU requirements relevant to the project are as following:

- > EIA Directive (Directive 2014/52/EU on the assessment of the effects of certain plans and programmes on the environment),
- > Birds Directive (Directive 2009/147/EC on the conservation of wild birds),
- > Habitat Directive (Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora),
- > EC Directive 2008/96/EC Road Infrastructure Safety Management,
- > Water Framework Directive (Directive 2000/60/EC establishing a Framework for Community Action in the Field of Water Policy),
- > Urban Waste Water Treatment Directive (Directive 98/15/EC amending Council Directive 91/271/EEC on Urban Waste Water Treatment)
- > Flood Directive (Directive 2007/60/EC on the Assessment and Management of Flood Risks),
- > Waste Framework Directive (Directive 2008/98/EC on Waste),
- > The Environmental Noise Directive (Directive 2002/49/EC on the Assessment and Management of Environmental Noise).

### 3.3 Previous Stakeholder Engagement

The table below contains a summary of previous consultation activities of relevance for this Project (full details are available in the Stakeholder Engagement Plan).

Table 3: Summary of previous consultation and stakeholder engagement activities

Document / Study / Stage	Summary of activities and issues of concern
<p><b>Public consultations in line with environmental permitting requirements</b></p>	<p><u>Initial public consultations related to the Preliminary EIA</u> were organised in 2005 and 2006 by FMoET in cooperation with the state-level Ministry of Transport and Communications. A series of public meetings were held in Hadzici, Jablanica, Konjic and Mostar, attended by a number of local community representatives and NGOs.</p> <p><u>New public consultations related to the EIA for motorway section Konjic (Ovcari)-Mostar North</u> were held after the local EIA Study was developed for this motorway section, including Tunnel Prenj. Public meetings were organised in Konjic and Mostar in 2018. Note: FMoET approved the local EIA Study in December 2018 but an Environmental Permit was not obtained due to the lawsuit filed by the Municipality of Jablanica based on which the cantonal court passed in 2021 that the Conclusion of FMoET on approving the EIA Study is annulled and the EIA procedure must be carried out again.</p>
<p><b>Public consultations in line with spatial planning requirements</b></p>	<p>Public consultations were undertaken both for the <u>Spatial Plan of FBiH 2008-2028</u>, the <u>Spatial Plan for Area of Special Interest to FBiH – Motorway on Corridor Vc</u> (for which two public hearings were organised in 2011) and the <u>Spatial Plan of Herzegovina-Neretva Canton (HNC)</u> (for which a series of public hearings were held in Stolac, Mostar and Jablanica in 2017).</p>
<p><b>Request from the City of Konjic</b></p>	<p>The City of Konjic sent a request in 2005 to JPAC to consider an additional interchange – connection to Konjic in the design phase. JPAC accepted this request, and the Konjic South Interchange was added in the current design in 2022.</p>
<p><b>Consultations with households during the development of this ESIA</b></p>	<p><u>Socio-economic surveys in 2021 and 2022</u> were conducted among 132 households living in the wider study area<sup>8</sup> to solicit their opinions about Project impacts and compensation arrangements, as well as to obtain specific data on current livelihoods and living conditions of households, including the identification of vulnerable categories.</p>
<p><b>Consultations with Local Community Offices during the development of this ESIA</b></p>	<p>In 2021 and 2022, consultation meetings were organised with the representatives of five Local Community Offices (LCOs): Centar, Dzepi, Bijela, Bijelo Polje and Tresanica (including its branch office “Donje Selo”). Key topics discussed during these meetings were related to the water sources used by the inhabitants, use of land plots and roads, livelihoods of the</p>

<sup>8</sup> These are: 1) settlements through which the motorway directly passes (Ovcari, Tresanica, Gornje Polje, Polje Bijela, Bijela, Mladeskovici, Podgorani, Humilisani, Potoci and Kutilivac); 2) settlements through which the Konjic Bypass directly passes: Ovcari, Vrbici, Galjevo, Repovica, Donje Selo and Dreclj; 3) additional settlements (all in Konjic) which have a potential to be affected by the Project: Prevlje, Josanica, Glavicine and Dzepi.

Document / Study / Stage	Summary of activities and issues of concern
	local population, familiarity with the Project and concerns regarding perceived Project risks and impacts.
<b>Consultations with NGOs during the development of this ESIA</b>	Throughout 2021 and 2022, consultation meetings were organised with the representatives of 15 NGOs: Aarhus Centre, Bankwatch, Neretva Zeleni, NGO Dinarica, NGO Farmer, Fruit Growers Association Konjic, NGO Travel Konjic, Hunting Association Konjic, Sports Fisherman Organisation Konjic, Hunting Organisation Koznik, Mountain Bike Organisation Konjic, NGO Boj, Tourism Association Mostar North, Organisation of Fighters and Defenders of Konjic, and Association of Serb Returnees Neretva - Konjic.

### 3.4 Status of Land Acquisition Activities

No land acquisition activities have been initiated yet. A Land Acquisition and Resettlement Framework (LARF) for the entire section 8 has been developed as part of the ESIA package.

JPAC will be the expropriation beneficiary, and land acquisition activities will be carried out by JPAC’s Department of Legal and Property Affairs. The City of Mostar, is the expropriation authority for all of the affected land plots located on the territory of the City of Mostar, while the City of Konjic is the expropriation authority for all of the affected land plots located in this City.

The Expropriation Study for the Prenj Tunnel was prepared in December 2016 (and will need to be updated due to the lapse of time), and this subsection was declared to be of public interest in November 2022 by the Government of FBiH. Expropriation Studies have not been developed yet for any of the other three subsections.

## 4 Summary of E&S Baseline, Potential Impacts and Mitigation

### 4.1 Biodiversity

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>Regarding habitats of the project area, the desk survey has shown the possible presence of 19 Annex I habitat types, six of which were confirmed: 3240 Alpine rivers and their ligneous vegetation (<i>Salix eleagnos</i>), *6220 Pseudo-steppe with grasses and annuals of the <i>Thero-Brachypodietea</i>, 6210 Semi-natural dry grasslands and scrubland facies on calcareous substrates, 62A0 Eastern sub-Mediterranean dry grasslands, 95A0 High oro-Mediterranean pine forests, *9530 (Sub-) Mediterranean pine forests with endemic black pines. When it comes to EUNIS classification, most habitats belong to the type G1 (Broadleaved deciduous woodland), E5.2 (Thermophile woodland fringes) and I1 (Arable land and market gardens). A total of 452 vascular plant species were identified by reviewing available literature data. Out of 452 plant species, 444 were confirmed during the field surveys. Invasive plant species have been found throughout the surveyed area. The largest number of invasive species was found around roads, human settlements, and arable land.</p> <p>Fauna of the project area was surveyed in 2020, 2021 and 2022, and a literature review was undertaken with regard to invertebrates, fish, amphibians, reptiles, ornithofauna and mammals (bats and large mammals). Both terrestrial and aquatic fauna were researched. The most</p>	Preconstruction	<ul style="list-style-type: none"> <li>&gt; Adverse impacts due to inadequate planning of works and Main Design requirements</li> <li>&gt; Lack of up-to-date baseline conditions</li> </ul>	<ul style="list-style-type: none"> <li>&gt; During the development of Main Design for the motorway, ensure no construction in the riverbed or the riparian area of Neretva River.</li> <li>&gt; Construction and operation infrastructure must not be established in critical habitats (CH) or priority biodiversity features (PBF) unless there is no other feasible option.</li> <li>&gt; Design viaducts as passable structures in the Main Design so to maintain habitat connectivity. Design and install culverts near streams to enable fish movement.</li> <li>&gt; If the construction phase begins more than three years after the completion of the detailed surveys performed for the ESIA (2021), additional baseline surveys need to be conducted.</li> </ul>
	Construction	<p>Habitats</p> <ul style="list-style-type: none"> <li>&gt; Loss of habitats due to preparation of the construction site and performing construction works</li> <li>&gt; Potential additional and unplanned disturbance of habitats</li> <li>&gt; Spread of invasive species</li> </ul> <p>Flora</p> <ul style="list-style-type: none"> <li>&gt; Removal of vegetation and clearance of flora due to preparation of the construction site and</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Develop Land and Habitat Restoration Plan (LHRP) and Invasive Species Management Plan (ISMP) as a part of CESMP.</li> <li>&gt; The Contractor must employ a qualified Biodiversity Expert (BE).</li> <li>&gt; Restrict the movement of machinery to the designated roads. The BE to clearly mark areas for vegetation clearance.</li> <li>&gt; Obligatory biospeleological monitoring during tunnel construction.</li> <li>&gt; Construction materials must be stored away from watercourses.</li> <li>&gt; Actively manage and maintain vegetation of areas marginal to the construction site to prevent drastic edge effect and spread of invasive species.</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>important findings regarding terrestrial species refer to the presence of amphibians, reptiles, birds and mammals that are listed in relevant annexes of the Habitats and Birds Directives and therefore require protection. Regarding the aquatic fauna of the Neretva River and its tributaries, several endemic and/or sensitive fish species were registered. Therefore, terrestrial and aquatic ecology will require specific and targeted mitigation measures.</p> <p>The planned motorway route passes through two potential Natura 2000 areas: Prenj-Cvrtnica-Cabulja (site code BA8300064), Zlatar (site code BA8300064), as well as two candidate Emerald sites – Konjicka bijela (Site code BA0000006) and Zlatar (Site code BA0000004). The Emerald sites are located within the potential Natura 2000 areas.</p>		<p>during construction works</p> <ul style="list-style-type: none"> <li>&gt; Dusting of nearby flora due to performance of construction works</li> </ul> <p>Fauna</p> <ul style="list-style-type: none"> <li>&gt; Disturbance of fauna species due to increased level of noise, vibration and light in the zone of construction activities</li> <li>&gt; Potential disturbance of nests/roosts of species that have a seasonally variable vulnerability due to breeding, feeding times or seasonal migrations</li> <li>&gt; Potential fatalities or injuries of fauna species due to vegetation removal and movement of heavy machinery</li> </ul>	<ul style="list-style-type: none"> <li>&gt; It is necessary to establish forest order immediately after cutting the trees along the alignment.</li> <li>&gt; Construction works will be stopped or minimized in periods sensitive for fauna.</li> <li>&gt; Monitoring of fauna with focus on the golden eagle nest during construction is needed.</li> <li>&gt; Construction sites within candidate Emerald sites and potential Natura 2000 sites must be fenced.</li> <li>&gt; Hunting and collection of medicinal plants by workers is strictly prohibited.</li> <li>&gt; Continuously implement the mitigation measured as given in the ESMP and BMP.</li> </ul>
	Operation	<p>Habitats</p> <ul style="list-style-type: none"> <li>&gt; Habitat fragmentation</li> <li>&gt; Chemical pollution of habitats adjacent to the motorway</li> </ul> <p>Flora</p> <ul style="list-style-type: none"> <li>&gt; Chemical pollution</li> </ul> <p>Fauna</p> <ul style="list-style-type: none"> <li>&gt; Habitat fragmentation</li> <li>&gt; Chemical pollution</li> <li>&gt; Collision of fauna due to high speed of vehicles</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Develop and implement Biodiversity Offsetting Plan (BOP).</li> <li>&gt; Plant high trees on chainage 10+580.00 in the form of hop-overs for bats.</li> <li>&gt; Undertake monitoring and maintenance of protective bird panels, fences and culverts.</li> <li>&gt; Continuously implement the mitigation measured as given in the ESMP and BMP.</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
		<ul style="list-style-type: none"> <li>&gt; Edge effect of fauna species</li> <li>&gt; Negative impacts of pollution, increased light and noise levels</li> </ul>	

## 4.2 Geology and Groundwater

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p><u>Geomorphology</u></p> <p>The project area belongs to the carbonate platform of the outer Dinarides, with the exception of the northernmost part of Konjic that belongs to the Bosnian flysch zone. The motorway passes through three distinct geomorphological units Bjelasnica, Prenj and Velez, which differ significantly in terms of geological and structural-tectonic characteristics. According to the genetic types, two categories of terrain, depending on the characteristics of tectonic activity, are determined: (i) geomorphological units in neotectonics descent phase and (ii) geomorphological units in phase of tectonic uplift.</p> <p><u>Geology</u></p> <p>The rocks of Mesozoic and Cenozoic age, that is of Triassic, Jurassic, Cretaceous, Paleogene, Neogene and Quaternary deposits, participate in the geological structure of the terrain. The motorway subsection is laid in the following structural-tectonic units: Spiljani-Konjic, Konjic-Glavaticevo, Cvrstica-Prenj, Dreznica-Porim and Velez-Cabulja. The Project area was hit by earthquakes that are</p>	Preconstruction	<ul style="list-style-type: none"> <li>&gt; Limited information on groundwater quality and quantity in the zone of motorway construction</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Conduct a detailed inventory to identify all wells for public and individual water supply, newly built wells for supplying construction locations with drinking or technical water, and piezometers installed at the referenced locations related to motorway construction.</li> <li>&gt; Prepare a Groundwater Monitoring Plan (GMP) to cover baseline monitoring and monitoring in the construction phase.</li> <li>&gt; Conduct the baseline monitoring of water quality and levels in the wells/piezometers according to the GMP.</li> </ul>
	Construction	<ul style="list-style-type: none"> <li>&gt; Intrusion of groundwater in tunnel tubes during excavation that can impact stability of the structure and cause the safety risk</li> <li>&gt; Impact on the direction of ground water flow and recharge by cutting the underground voids/streams by tunnelling</li> <li>&gt; Impact on groundwater quality due to: (i) direct release of intercepted tunnel drainage water</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Establish systematic monitoring of water levels throughout tunnel lifetime.</li> <li>&gt; Do not discharge groundwater that penetrates the tunnel tube to discovered caverns or karst canals.</li> <li>&gt; Capture the groundwater that penetrates the tunnel tube and drained it out of the tunnel with pipes or channels.</li> <li>&gt; Treat the captured groundwater before discharging into the environment.</li> <li>&gt; The tunnel can be sealed only after the tunnel has been built and all safety measures are taken so that the sealing of the penetration does not cause dangerous or harmful consequences for the workers and the environment.</li> <li>&gt; In case of cutting off underground streams during tunnel excavation, construct a bypass (migration flowpath) to its extension.</li> </ul>



Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>usually felt by people but cause no damage to structures.</p> <p><u>Geophysics</u></p> <p>The karstification base along the Prenj Tunnel is at the depth of 150-250 meters from the surface of the terrain, which is in accordance with the usual depth of karstification in the Herzegovinian karst. The characteristic of the terrain is as such that the risks of groundwater intrusion, as well as possible groundwater pollution during construction of the tunnel, are reduced to a minimal and acceptable level. Tunnel excavation will be dominantly in compact and solid nonkarstified limestones and dolomites with an overlayer.</p> <p><u>Hydrogeology</u></p> <p>The following types of aquifers can be found in the project area: confined aquifers, karst aquifers, karts-fracture aquifers, fracture aquifers and conditionally "dry" terrains. Three major hydrogeological areas are presented in the Project area: hydrogeological area Bjelasnica, hydrogeological area Prenj and hydrogeological area Velez. Dye-tracer tests were carried out for the purpose of this Project at four locations Jezerce, Jezero, Vrutak and Veline Bare, in order to determine possibility of groundwater impact on the construction of the Prenj Tunnel as well as the impact of tunnel construction on the water sources used for the public water supply. At Jezerce location, groundwater may appear in the zone of south portal of the Prenj Tunnel in form of moist patches or water dripping. At Jezero location the groundwater flows under the elevation of the alignment, and not towards the south portal of the Prenj Tunnel. At Vrutak location the groundwater</p>		<p>without treatment, (ii) turbidity caused by erosion and excavation or blasting of the rock mass and (iii) accidental spills in vicinity of the springs</p>	<ul style="list-style-type: none"> <li>&gt; If the tunnel tube cuts through a cavern of larger dimensions, build a supporting structure to bridge the cavern.</li> <li>&gt; When large caverns appear, avoid filling the caverns with any material.</li> <li>&gt; Install waterproof foils before the formation of embankments to prevent further penetration of any spills of harmful substances into the ground.</li> <li>&gt; In the area of local spring captured for the need of up to 30 households in Gornja Bijela, provide the households using this source with an alternative source of drinking water by connecting them to the Gornja Bijela reservoir.</li> <li>&gt; To protect the Bijela and Salakovac springs, fully pave the access roads with asphalt and equip with stormwater collection systems.</li> <li>&gt; To prevent accidental releases of oil and grease during construction of viaducts instal oil collection tanks under the machines.</li> <li>&gt; Treat collected wastewater from concrete batch plants.</li> </ul>
	Operation	<ul style="list-style-type: none"> <li>&gt; Impact on groundwater quality resulting from release of treated run-off from the motorway surface in the proximity to the springs and their water protection zones</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Design and construct closed system for controlled collection of storm water from the motorway surface, toll and rest areas, and its treatment in oil and grease separators and/or biological treatment units.</li> <li>&gt; Do not discharge treated water in the spring area.</li> <li>&gt; Perform regular testing of treated storm water quality (before its discharge) in line with the obtained Water Permit.</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>is mainly drained west and north toward the Neretva River, and not toward the Prenj Tunnel. Since the main fault crosses the Prenj Tunnel alignment, it is expected that groundwater will appear along the fault zone in quantities that will depend on the hydrological situation. At Vreline Bare location, the result indicates that in the period of low and medium flows there is no significant groundwater flow in the Prenj Tunnel zone.</p> <p><u>Chemical Status of Groundwaters</u></p> <p>The 2021 report on ground water in FBiH was focused on monitoring of chemical status of groundwater at the Bosnjaci and Salakovac springs. The general chemical status of both springs is determined as “good”.</p>			

### 4.3 Surface Waters

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>The three main surface water bodies for the project are the Neretva, Tresanica, and Konjicka Bijela rivers. A number of smaller intermittent streams of seasonal character are also identified: the Suhi potok creek that forms the upper stream of Konjicka Bijela on the Konjic side and Susica, Pribiz draga, Rozacki Potok, Ljeskovac on the Mostar side.</p> <p>For the purpose of this Project, water quality monitoring was performed on three surface water bodies: Neretva River, Tresanica River and Konjicka Bijela River (near settlement Mladeskovići and before the confluence with river Neretva).</p>	Preconstruction	<ul style="list-style-type: none"> <li>&gt; Perform the pre-construction water quality measurements from which change can be assessed as construction works progress</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Due to the timespan between preparation of this Study and start of construction works, up-to-date information on water quality in the Project area will be needed to determine baseline conditions.</li> </ul>
	Preconstruction/ Construction	<ul style="list-style-type: none"> <li>&gt; Increased pollution risks to surface water bodies from works within riverbed</li> <li>&gt; Change in the river flow and recharge by cutting or diverting permanent</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Prepare a River Crossing Management Plan (RCMP) that includes a Specific Method Statement. This statement shall provide details of the methods proposed to ensure dry working conditions and minimise risks to water quality as well as to aquatic flora and fauna.</li> <li>&gt; Hydraulic connectivity of all surface water bodies must be maintained.</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>Based on the results of physical-chemical analyses of the surface waters during the high flow or wet season in March 2021, all tested parameters were below limit values stipulated by the national legislation and meet the criteria for surface waters of class I and II. For the sample taken before the confluence with river Neretva, mercury (Hg) concentration was above the limit value stipulated by the national legislation. Based on the results of physical-chemical analyses of the surface waters during the low flow or dry season in July 2021, majority of parameters were within the permissible values stipulated by the national legislation and meet the criteria for surface waters of class I and II. For samples Neretva and Konjicka Bijela (near settlement Mladeskovici) the analysis for lead (Pb) were below the maximum allowed concentrations and meets the criteria for surface water of III and IV class. At Tresanica monitoring location analysis of copper (Cu) and mercury (Hg) meets the criteria for surface water of III and IV class. For sample Konjicka Bijela (near settlement Mladeskovici), all tested parameters were within the permissible values stipulated by the national legislation and meet the criteria for surface waters of class I and II.</p> <p>In May 2022 monitoring of Neretva River at the location of the Donje Selo settlement (where the works on the Konjic bypass will be performed) indicated that all tested parameters were within the permitted values stipulated by the national legislation and meet the criteria for surface waters of class I and II.</p> <p>The 2021 report on surface water in FBiH focused on two monitoring profiles, Neretva 9 (Konjic) and Neretva 10 (upstream from Konjic), to determine</p>		<p>and intermittent streams around the motorway structures</p> <ul style="list-style-type: none"> <li>&gt; Reduction in water quality of the Tresanica and Neretva rivers due to discharge of surface-runoff from the asphalt surfaces in the operational phase</li> </ul>	<ul style="list-style-type: none"> <li>&gt; When cutting off or otherwise controlling the water flow, ensure appropriate dimensioning of culverts.</li> <li>&gt; In case of Suhi potok, construction of training structure shall be performed in the low flow season.</li> <li>&gt; Design and construct a closed surface drainage collection and treatment system.</li> <li>&gt; Treatment units to specifically cover the two viaducts over Tresanica and Neretva and the bridge over Neretva in Donje Selo.</li> <li>&gt; Design and construct connections between toll stations/rest areas and local water supply and sewerage systems.</li> <li>&gt; If local water supply and sewerage systems are not available, design and construct a collection and treatment system for sanitary wastewater that uses biological treatment units.</li> <li>&gt; Treated wastewater shall not be discharged in the III protection zone of the Salakovac and Bosnjaci springs, as well as in the direct influence zone of the unprotected Bijela spring.</li> </ul>
	Construction	<p>Reduction in water quality in river systems due to:</p> <ul style="list-style-type: none"> <li>&gt; sediment release during bridge construction in riverbed and on the banks</li> <li>&gt; accidental pollution by hydrocarbons or other substances from the construction site including concrete batching plant and asphalt mixing plant</li> <li>&gt; localised discharge of wastewater from</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Avoid the positioning of stockpiles near to watercourses.</li> <li>&gt; Control runoff during construction.</li> <li>&gt; Pass any water generated by dewatering processes through silt busters or sediment tanks, prior to discharging this water to the any watercourse.</li> <li>&gt; Fuels and potentially hazardous construction materials should be stored in bunded areas with external cut-off drainage and fuel should be stored in double skinned tanks with 110% capacity.</li> <li>&gt; Waste fuels and other fluid contaminants should be collected in leak-proof containers prior to removal from site to an approved processing facility.</li> <li>&gt; Concrete mixing and washing areas should be located more than 500m from any watercourse.</li> <li>&gt; Design and construct a system for collection and treatment of drainage water and sanitary wastewater inside the camps.</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
ecological status/potential based on biological and physico-chemical parameters. Neretva river has a "good" ecological status upstream from Konjic and "maximum ecological potential" passing through Konjic. Chemical status upstream is "good", but it is "bad" passing through Konjic. The Tresanica and Konjicka Bijela rivers were not monitored.		<ul style="list-style-type: none"> <li>construction site and worker's camp</li> <li>&gt; depositing of waste such as construction waste, municipal waste, and other special waste categories near or into the surface waters</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Develop and implement a Detailed Construction Waste Management Plan (DCWMP) and include waste management measures as stipulated under item 4.10.</li> <li>&gt; Implement SEP, in particular the provisions on communicating with water utilities and providing timely information to local communities on planned water supply cuts and deteriorated water quality in case of an accidental pollution or temporary turbidity.</li> </ul>
	Operation	Reduction in water quality in river system resulting from: <ul style="list-style-type: none"> <li>&gt; direct release of intercepted surface run-off including de-icing agents</li> <li>&gt; direct release of sanitary water from toll station</li> <li>&gt; accidental spill of hazardous material resulting from traffic accidents</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Include in the Operational Environmental and Social Management Plan (OESMP) measures to properly operate and regularly maintain sanitary and drainage facilities.</li> <li>&gt; In the Operational Emergency Preparedness and Response Plan (OEPRP) prepared for the motorway include procedures to prevent contamination of waters from accidental spills.</li> </ul>

## 4.4 Climate

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
The area of the city of <b>Konjic</b> has a characteristic of a modified Mediterranean climate. In the last 30 years, the highest average daily maximum temperatures were recorded in August and July and were 28 °C, while the lowest average daily maximum temperatures were recorded in January and February (7 °C). The highest average daily minimum temperatures were also recorded in August and July (17 °C), and the lowest average	Preconstruction/ Construction	<ul style="list-style-type: none"> <li>&gt; Landslides and rockfalls can endanger the terrain stability</li> <li>&gt; Fires can cause thick smog, dangerous to human health and the environment</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Conduct pre-construction rockfall analysis and implement mitigation measures to prevent soil erosion and dewatering.</li> <li>&gt; Perform periodic geotechnical monitoring.</li> <li>&gt; Prepare Emergency Preparedness and Response Plan (EPRP) as a part of CESMP.</li> <li>&gt; Implement recultivation and restoration as stipulated by Biodiversity Management Plan (BMP).</li> <li>&gt; Regularly control the state of fires in the project area by visual inspection and monitoring of news in local media,</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>daily minimum temperatures in January and February (1 °C). The average annual rainfall for Konjic is 1,449 mm. Average rainfall is higher during the winter months.</p> <p><b>Prenj</b> is characterised by a subalpine Mediterranean climate. The average annual temperature is about 14 °C. During the coldest months, the temperature drops to -30 °C. The intensity and amount of precipitation is above the BiH average level – up to 2,000 mm per year. The annual distribution of precipitation is uneven, so that from March to September the average is from 600 to 800 mm, and in July and August only 40 to 70 mm.</p> <p>The modified Mediterranean climate is mostly present on the territory of the city of <b>Mostar</b>. In the summer period, the temperatures are very high and can reach 45°C. Due to the proximity of Adriatic Sea, the winter temperatures are stable with average temperature being around 4°C. The average annual air temperature in Mostar in 2021 was 16.0 °C. In November 2021, 356 mm of precipitation was measured at the meteorological station in Mostar, which is the highest monthly value in 2021. In other months, mainly below-average values were recorded.</p>	Operation	<ul style="list-style-type: none"> <li>&gt; Landslides and rock falls can cause physical damage to transport infrastructure</li> <li>&gt; Droughts, or high temperatures, cause the heating of the asphalt and thus cause higher emissions of greenhouse gases</li> <li>&gt; Fire smoke reduces the visibility</li> <li>&gt; A significant increase in GHG emissions in the project area is expected, with the commissioning of the motorway section</li> </ul>	<p>including monitoring of the index of danger from the occurrence and spread of forest fires on the website of Federal Hydrometeorological Institute.</p> <ul style="list-style-type: none"> <li>&gt; Perform periodic geotechnical monitoring with the aim of landslide control.</li> <li>&gt; In case of reconstruction, implement recultivation and restoration as stipulated by BMP and where possible reforest land within the Project area of influence.</li> <li>&gt; Prepare Operational Emergency Preparedness and Response Plan (OEPRP).</li> <li>&gt; Regular inspection of plumbing installations.</li> <li>&gt; Regularly check the drainage system for the management of surface and rainwater from the road.</li> <li>&gt; In case of reconstruction, use high quality road construction materials, which are resistant to high temperatures.</li> <li>&gt; Encourage drivers with motivational messages on electronic displays to maintain a consistent speed of 110 km/h for the benefit of reducing GHG emissions.</li> <li>&gt; Restrict the movement of vehicles transporting dangerous substances in the period possible for fire.</li> </ul>

## 4.5 Air Quality

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
There has not been an operational monitoring station in Konjic since 1990s. The air quality measurements in the City of Mostar are carried out	Preconstruction	<ul style="list-style-type: none"> <li>&gt; Due to the timespan between preparation of this Study and start of</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Repeat the analysis of air quality in the Project area, possibly in two seasons (summer and winter).</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>on two monitoring stations, one of which is not in function, while the second one never made their data publicly available. In order to define the air quality baseline for this ESIA, one-time measurement of air quality was performed. The monitoring was carried out along the main motorway route, along South Connection to the Main Road M17 (Konjic Bypass), and along access roads to the Prenj Tunnel. Measurements of air quality along the main motorway route during the winter period (March 2021) and summer period (July 2021) showed that all measured parameters are within the limit values stipulated by national legislation. Monitoring at two measuring points along the planned Konjic Bypass and at three measuring points along the planned access roads to Prenj Tunnel was performed in June 2022. Results showed that all measured parameters are within the limit values stipulated by national legislation.</p>		<p>construction works, up-to-date information on air quality in the project areas will be needed to determine baseline conditions</p>	
	Construction	<p>Reduction in air quality due to:</p> <ul style="list-style-type: none"> <li>&gt; Emissions of construction dust</li> <li>&gt; Emission of exhaust gases from combustion processes in generators and other construction equipment/vehicles</li> </ul>	<p>The Construction Environmental and Social Management Plan (CESMP) to include a chapter on air quality management that shall contain:</p> <ul style="list-style-type: none"> <li>&gt; identification of all air emission sources,</li> <li>&gt; identification of all types of emission from each source,</li> <li>&gt; details of mitigation measures for each source,</li> <li>&gt; specific location and schedule where such measures shall be implemented,</li> <li>&gt; monitoring and reporting.</li> </ul>
	Operation	<ul style="list-style-type: none"> <li>&gt; Reduction in air quality due to emission from exhaust gases from vehicles using the motorway</li> </ul>	<p>If measurement of standard air quality parameters show that values exceed maximum allowed values prescribed by national regulation, the following protection measures must be undertaken:</p> <ul style="list-style-type: none"> <li>&gt; construction of barriers to prevent spreading the pollutants; best are wide leafed green plants,</li> <li>&gt; if this is not sufficient protection or these species cannot grow on the Project area, artificial barriers are also acceptable.</li> </ul>

## 4.6 Noise

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>The level of noise emissions of the existing road and rail infrastructure is not well known because there aren't strategic noise maps for these objects in BiH. Also, the Cities of Mostar and Konjic do not</p>	Preconstruction	<ul style="list-style-type: none"> <li>&gt; Due to the timespan between preparation of this Study and start of construction works, up-to-date information on</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Repeat the analysis of ambient noise in the Project area, possibly in two seasons (summer and winter).</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>have noise maps on which the noise level in the areas of intervention could be observed.</p> <p>According to the environmental noise measurements performed along the proposed main alignment at 14 locations during 2021, along the proposed Konjic Bypass alignment at 3 locations during June 2022 and along the proposed access roads to the Prenj Tunnel at 4 locations during June 2022, there are locations where the baseline measurements are above the limits, especially at the beginning of the project route which is close to the existing road and in the vicinity of the city of Konjic. Small exceedances have been noted in Polje Bijela, in Podgorani and Lisani.</p>		ambient noise levels in the project area will be needed to determine the baseline conditions	
	Preconstruction	> Inadequate planning of noise barriers may cause impacts on residents from increased levels of noise from motorway traffic	<ul style="list-style-type: none"> <li>&gt; Confirm the noise modelling results and proposal for noise barrier locations given in ESIA after the Main Design is completed.</li> <li>&gt; Confirm the technical details of noise barriers considering also the JPAC Technical standards for noise barriers.</li> <li>&gt; The locations of noise barriers will also be reconsidered in consultation with the local community of Konjic and settlements Tresanica, Gornje Polje, Glavicine, Bijela, Podgorani, Kutilivac and Vrapcici, since these settlements are most likely to experience negative impacts of increased level of noise.</li> </ul>
	Construction	> Impact on workers and residents from increased levels of noise during construction works	> In the construction phase include in the CESMP the set of measures related to restriction of works to day-time only, vehicles speed in the construction site, simultaneous use of equipment and vehicles, and machine maintenance to reduce noise from construction works.
	Operation	> Impact on residents from increased levels of noise from motorway traffic	<ul style="list-style-type: none"> <li>&gt; If the traffic intensity during operation phase is higher than originally presumed (based on control measurements), additional protection measures shall be proposed.</li> <li>&gt; Noise monitoring upon complaints.</li> </ul>

## 4.7 Vibration

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
No substantial vibration source has been identified in the study area. No mining operations or heavy-duty industry facilities were spotted that could be	Construction	> Structural damage from vibration caused by equipment and operation methods employed	> Respected recommending safety distances for tunnel drilling and bridge foundations in the identified vibration hot spots.

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>permanent sources of vibration. There is a railway line crossing the alignment, which is a source of intermittent vibrations. However, train circulation is very low and, in that area, there are warehouses and industrial facilities to a distance up to 100m from the alignment, hence there are no sensitive receivers.</p> <p>For the purpose of vibration modelling, baseline measurements were undertaken at 12 measurement points along the corridor. Based on the ambient vibrations along the alignment measured during in-situ visit, no perception levels are registered.</p>		including use of explosives	<ul style="list-style-type: none"> <li>&gt; If sensitive receivers are acknowledged within the safety zone buffers, then other methods of construction should be used.</li> <li>&gt; The contractor shall deliver, prior to construction, a detailed study that accounts for the soil in each area of interest and the explosive charges he is planning to use.</li> <li>&gt; Continuous vibration monitoring during construction works is highly recommended, as well as a detailed pre- and post- construction condition assessment and crack survey for any existing structures in a distance up to 40m from the relevant works.</li> <li>&gt; Before carrying out any inevitable activities that produce vibrations near receivers that are sensitive to noise and vibration, communicate properly with those affected. In the event of any complaint, the source of the excessive vibration will be identified and measures such as the location of the equipment and the operating hours will be assessed.</li> </ul>
	Operation	No impacts are expected.	Since no impacts are expected, no mitigation measures are proposed.

## 4.8 Soil

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p><u>Land categorisation</u></p> <p>The Project area is mostly uncategorised in terms of the soil quality values, except for the part of the route passing through Konjic urban area, area of the Konjic Bypass in the alluvium of Neretva River, and before Mostar North Interchange. 33% of the land covered by the project footprint belong to the first agro-zone with highly valuable agriculture</p>	Preconstruction	<ul style="list-style-type: none"> <li>&gt; Due to the timespan between preparation of this Study and start of construction works, up-to-date information on soil quality in the project area will be needed to determine the baseline conditions</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Repeat the analysis of soil quality in the project area, possibly in two seasons (summer and winter).</li> </ul>



Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>land, 61% of the land belongs to the second agro-zone with medium valuable agriculture land and around 6% to the third agro-zone with least valuable agricultural land.</p> <p><u>Land use</u> Konjic Bypass and access roads passes mainly through urban, agricultural, and natural areas (forest). The southern section, after the Prenj Tunnel, is passing close to the area with agricultural land (mostly vineyards). Regarding land directly occupied by the main motorway alignment including Konjic Bypass, 3.16% is occupied by artificial surfaces, 20.08% by agricultural land, 76.33% by forests and 0.40% by water.</p> <p><u>Soil quality</u> The baseline soil quality monitoring was carried out as a part of this assignment on six locations (Ovcari, Polje Bijela, Bijela, Mladeskovici, Podgorani, R435a) along the motorway subsection in the period March-July 2021. Sampling points Ovcari, Bijela, Mladeskovici, Podgorani and R435a can be classified as agricultural land. Comparing the content of total forms of heavy metals in the soil sample with the values of the pollutants in agricultural land in accordance with the national legislation, it was found that zinc in soil samples at Bijela and Mladeskovici sampling points during the winter period is higher than the limit value. During the summer period sampling, it was determined that all measured parameters meet the limit values for agricultural land stipulated by the national legislation. Sampling point Polje Bijela can be classified as industrial zone. All measured</p>	Preconstruction	<ul style="list-style-type: none"> <li>&gt; Occurrence of rockfall due to the instability of terrain and the nature of construction works</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Carry out a rockfall analysis to determine position and length of Rock Fall Protection Fence in the Klenova Draga valley.</li> </ul>
	Construction	<ul style="list-style-type: none"> <li>&gt; Soil erosion as a result of excavations and use of heavy machinery and equipment, as well as deforestation</li> <li>&gt; Soil dewatering</li> <li>&gt; Loss of fertile topsoil</li> <li>&gt; Accidental spills</li> <li>&gt; Direct discharge of wastewater from maintenance of construction vehicles at the site and sanitary waters from construction camp</li> <li>&gt; Inappropriate waste/spoil disposal</li> </ul>	<ul style="list-style-type: none"> <li>&gt; The detailed design of the Project shall incorporate following measures to reduce the likely release of loose material or material with the potential to become loose in-situ: (i) slope stabilisation, (ii) retaining walls, (iii) sediment traps and basins, (iv) drainage channels, (v) treatment system.</li> <li>&gt; Revegetation in line with the Land and Habitat Restoration Plan (LHRP) that will be constituent of the CESMP.</li> <li>&gt; Prepare a Topsoil Management Plan (TSMP).</li> <li>&gt; The same measures as under Geology and Groundwaters, Surface Waters and Waste should be implemented.</li> </ul>
	Operation	<ul style="list-style-type: none"> <li>&gt; Direct discharge of surface run-off</li> <li>&gt; Accidental fuel and oil spills</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Include in the Operational Environmental and Social Management Plan (OESMP) and implement the following measures: <ul style="list-style-type: none"> <li>&gt; maintenance and clean up the drainage system to prevent impact on erosive sliding of the soil or flooding,</li> <li>&gt; monitoring of slopes, in particular after strong rains for identification of possible traces of erosion,</li> <li>&gt; implementation of mitigation measures defined for works during road repair/maintenance works,</li> <li>&gt; implement the same measures as under Surface Water.</li> </ul> </li> </ul>
	Operation	<ul style="list-style-type: none"> <li>&gt; Reduction in soil quality resulting from use of de-icing agents</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Include in the Operational Environmental and Social Management Plan (OESMP) and implement the following: <ul style="list-style-type: none"> <li>&gt; analysis of soil for identification of the impact caused by ice breaking salt with subsequent organic amendment and/or amendments to adjust pH or nutrient deficiencies.</li> </ul> </li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>parameters meet the limit values for industrial areas in winter and summer period.</p> <p>Baseline soil quality monitoring was also carried at two locations along the Konjic Bypass (Ovcari and near the Konjic landfill site) in May 2022. According to the structure, the soil is powdery-loamy and in accordance with the national legislation limit values, the tested soil samples meet the limit values.</p> <p>Baseline soil quality monitoring was performed on three locations (Bijela, HP Investing site, Prigradjani) along the access roads to Prenj Tunnel in May 2022. Based on the test locations and surrounding environment, sampling points can be considered as agricultural land. All parameters for all three analysed soil samples meet the limit values stipulated by the national legislation except for zinc at Bijela and HP Investing site, which were higher than the limit value.</p>			

## 4.9 Landscape

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>Landscape elements along the route are characterised by: (i) natural systems, with an accent on karst morphology and forest ecosystems, and (ii) systems created by anthropogenic influence (extensive agricultural area, local settlements, as well as existing infrastructure).</p> <p>The natural component of the landscape along the route is characterised by the terrain structure with hilly, hilly-mountainous, and mountainous zones. About 40% of the area belongs to the hilly-</p>	Construction	<ul style="list-style-type: none"> <li>&gt; Changes to the existing landscape and visual impacts due to the construction works</li> </ul>	<ul style="list-style-type: none"> <li>&gt; In the Construction Environmental and Social Management Plan (CESMP) include a Land and Habitat Restoration Plan. The Plan sets out how a development will maintain the retained landscape and existing ecology of the site.</li> <li>&gt; Implement measures relating to the proper organisation of construction site defined in Construction Site Organisation Plan (CSOP).</li> <li>&gt; Appropriate disposal of construction waste on designated landfills and appropriate recultivation afterward.</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>mountainous terrain over 500 m asl (e.g., Prenj, Cvrstica, Cabulja mountains) and only about one-third of the terrain is located at the altitudes from 200 to 500 m asl. Existing natural vegetation systems are represented as forest, meadow, and pasture systems.</p> <p>The motorway passes through a few settlements in Konjic and Mostar North area. These settlements are scattered, placed between forest areas, and have rural character, with a smaller number of inhabitants who are usually engaged in agriculture and animal husbandry.</p>			<ul style="list-style-type: none"> <li>&gt; Implement recultivation and restoration as stipulated by Biodiversity Management Plan (BMP) and where possible reforest land within the Project area of influence.</li> </ul>
	Operation	<ul style="list-style-type: none"> <li>&gt; Changes to the existing landscape and visual impacts due to the presence of permanent motorway structures</li> </ul>	<ul style="list-style-type: none"> <li>&gt; N/A (There is no applicable measure because permanent change is due to the fact that the motorway is a linear structure that remains permanently in space).</li> </ul>

## 4.10 Waste and Materials

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>The main types of waste that will be generated during <u>construction phase</u> are:</p> <ul style="list-style-type: none"> <li>&gt; <b>earth, sand, gravel, clay, loam, stone as a result of earthworks and excavation,</b></li> <li>&gt; <b>bitumen (asphalt) or cement-bound material, sand, gravel, crushed stone as a result of construction of civil engineering structures,</b></li> <li>&gt; <b>concrete, bricks, mortar, gypsum, aerated concrete, natural stone as a result of the construction of buildings and demolition of expropriated assets, and</b></li> <li>&gt; <b>wood, plastic, paper, cardboard, metal, cables, paint, varnish, and other mixed waste on the construction site as a result of other construction operations.</b></li> </ul>	Construction	<ul style="list-style-type: none"> <li>&gt; Contamination of environment due to inappropriate management of spoil and other types of waste generated in construction</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Seek to maximise reuse or recovery of waste arising on-site.</li> <li>&gt; Separation of materials and substances, including construction materials products, which are not waste if they can be used without processing for the same purpose in which they were produced.</li> <li>&gt; If the excavated material is not contaminated with hazardous substances the investor can reuse it on the construction site.</li> <li>&gt; Prevent the mixing of certain types of dangerous of construction waste with other waste or substances and materials that are not waste.</li> <li>&gt; Prevent the release of asbestos fibres into the air from asbestos waste and spills of liquid waste which may contain asbestos.</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>Indicative expected composition of the construction waste is as follows:</p> <ul style="list-style-type: none"> <li>&gt; <b>excavation material 90%,</b></li> <li>&gt; <b>demolition and construction waste 5%,</b></li> <li>&gt; <b>asphalt and concrete 5%.</b></li> </ul> <p>The expected total quantity of excavated materials will be around 6.9 million m<sup>3</sup>, while the total amount of material required for construction of embankments along the route is around 3.4 million m<sup>3</sup>. Since the excavated spoil can be used for construction of the embankments, the final disposal will be required for 3.5 million m<sup>3</sup> of spoil. The treatment plan involves disposing of part of the material on designated disposal sites and using the remaining portion for landscaping activities.</p> <p>The main waste types expected during <u>operation phase</u> are:</p> <ul style="list-style-type: none"> <li>&gt; <b>municipal waste from toll stations and rest areas,</b></li> <li>&gt; <b>hazardous packaging from lubricants and other liquids used in car maintenance,</b></li> <li>&gt; <b>waste generated during motorway maintenance activities (including toxic and dangerous substances).</b></li> </ul>			<ul style="list-style-type: none"> <li>&gt; The reprocessing of asbestos into recycled materials is not allowed.</li> <li>&gt; The investor and/or Contractor must provide information on the quantity and composition of excavated materials from the construction site, as well as details about excavation methods and testing procedures in accordance with waste management regulations, EPRD PRs, and EIB standards</li> <li>&gt; Cut trees and stumps should be disposed of along the route, at a sufficient distance from the watercourse, in places accessible for the trees to be removed by the competent (local) forestry authority</li> <li>&gt; Develop and implement <b>Detailed Construction Waste Management Plan (DCWMP)</b> based on the Preliminary Construction Waste Management Plan. The DCWMP should be implemented in conjunction with a <b>Topsoil Management Plan (TSMP)</b> and a <b>Biodiversity Management Plan (BMP)</b>.</li> <li>&gt; Where on-site reuse (or other forms of recovery) cannot be achieved, the arisings should be sent to licenced off-site reuse, recycling, or recovery facilities.</li> <li>&gt; JPAC is obligated to engage authorized companies for waste management, and also to verify the validity of their permits.</li> <li>&gt; Ensure appropriate number of containers and bins in all areas of the construction site.</li> <li>&gt; Educating workers and employees about the waste generated and its management in accordance with the adopted procedures at the site.</li> <li>&gt; The contractor will be required to define the disposal and generation of waste.</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
			<ul style="list-style-type: none"> <li>&gt; Introduce the principle of waste reduction and recycling.</li> <li>&gt; Daily collection and temporary storage of hazardous and non-hazardous waste.</li> <li>&gt; Municipal waste shall be collected by a local utility company.</li> <li>&gt; Hazardous waste shall be collected and treated by a licensed waste operator.</li> <li>&gt; Hazardous waste before it is handed over to an authorized person must be packaged and stored in such a way as to prevent any contact of waste with the environment.</li> <li>&gt; Segregate waste streams to prevent cross contamination and maximise recovery.</li> <li>&gt; If waste for which the contents are unknown is stored, measures should be taken that include testing and analysis to examine the characteristics of the waste. Until its characteristics are determined, this waste is considered hazardous.</li> <li>&gt; Liquid waste and wastewater must not be discharged into drains or sewers.</li> <li>&gt; Avoid blowing, spilling, or dropping waste outside the construction site into the environment.</li> <li>&gt; Prevent the outflow of rainwater that has come into contact with hazardous waste on the ground, in water, and underground water.</li> <li>&gt; Prevent liquid waste from flowing onto the ground, into water, and underground water.</li> </ul>
	Construction	<ul style="list-style-type: none"> <li>&gt; Environmental damage caused by improper</li> </ul>	<ul style="list-style-type: none"> <li>&gt; It is necessary to arrange and to plan the transport and unloading of different materials</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
		materials/chemicals management	<ul style="list-style-type: none"> <li>&gt; To minimise the effect of construction traffic on the City of Konjic, Viaducts No. 3 and No. 4 shall be prioritised in the tender documentation to be built first.</li> <li>&gt; Tunnels T1 and T2 north of the Neretva River shall also be prioritised in the tender documentation for construction to aid in the transportation of surplus material.</li> <li>&gt; Contractor must avoid traffic of the trucks with construction material crossing Konjic. Particular constrains are to be arranged between JPAC, Constructor and the City of Konjic.</li> <li>&gt; Programming/procurement of the construction works for Prenj Tunnel needs to be considered in a way to allow for complete reuse of the excavated material from the tunnel in the embankments for the northern motorway subsection.</li> <li>&gt; Ensure that the specification of recycled and secondary content in imported materials (such as earthwork, stone and aggregate, cement, and asphalt), is set out during detailed design.</li> <li>&gt; A <b>Materials Management Plan (MMP)</b> shall be developed by the appointed contractor and will include details on how the site construction materials would be managed. The Plan shall include planning and controlling of all materials and equipment in advance, procuring them at a reasonable cost, storing them adequately and making them available as needed.</li> <li>&gt; keeping records of: (i) licenses and permits of suppliers or vendors, (ii) material resources tracking, treatment, disposal, and delivery notes records, and (iii) records of any contingency arrangement for material resources and waste arisings that had to be implemented will also be detailed.</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
	Construction	<ul style="list-style-type: none"> <li>&gt; Environmental damage caused by opening of borrow pits</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Develop a Borrow Management Plan, which includes locations of proposed extraction sites, plan for access, dust management on access roads, stockpile locations and management, and plan for rehabilitation of sites, commitments to obtain all regulatory approvals following approval from JPAC.</li> <li>&gt; Materials shall not be borrowed from the Neretva River. The Contractor is not permitted to open new extraction pits within this river basin.</li> <li>&gt; Borrow pits may not be opened in protected areas in line with the national and EBRD and EIB requirements.</li> <li>&gt; Before putting in operation a borrow pit, all necessary water, and construction related permits must be obtained.</li> <li>&gt; If Contractor decides to purchase construction materials from the market, it is allowed to subcontract only licenced material providers with valid permits.</li> <li>&gt; Constraints concerning eventual itineraries through the City of Konjic must be discussed and agreed between JPAC, Contractor and the City of Konjic.</li> </ul>
	Construction	<ul style="list-style-type: none"> <li>&gt; Environmental damage caused by inadequate management of disposal sites</li> </ul>	<ul style="list-style-type: none"> <li>&gt; After the formation of the disposal areas, it is necessary to carry out humification in a layer of 20 cm. To carry out this process, the humus that has been removed from the site will be utilized together with fresh humus, if needed.</li> <li>&gt; Peripheral ditches shall be constructed along the perimeter of the disposal sites to collect rainwater from external sources and the closed section of the sites, directing it towards the nearest recipient. On the opposite side, the planned ditch runs alongside the sites and connects to the existing road's drainage ditch, leading to the recipient. In areas where the ditch's slope exceeds 4%, concrete elements must be used to line the ditch.</li> <li>&gt; Areas of the landfill closing plateau have to be projected horizontally. The slope of the scarp between</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
			<p>the two layers shall be given in a slope of 1:2 so that the scarp of each subsequent surface is pulled by 2.00 m towards the middle of the landfill.</p> <ul style="list-style-type: none"> <li>&gt; Specific studies shall be undertaken to ensure integration within the surrounding environment.</li> </ul>
	Operation	<ul style="list-style-type: none"> <li>&gt; Contamination of environment due to inappropriate waste storage and handling arrangements</li> </ul>	<p>Operation</p> <ul style="list-style-type: none"> <li>&gt; waste bins for separate waste collection at rest areas and toll stations will be provided,</li> <li>&gt; waste will be transferred to licenced operators for waste management for final treatment/disposal.</li> </ul> <p>Maintenance</p> <ul style="list-style-type: none"> <li>&gt; The same measures as under the construction phase (19.10.1-19.10.3), as applicable.</li> </ul>

## 4.11 Community Health and Safety

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>In total, there are 15 settlements in the wider study area belonging to Konjic (Ovcari, Bijela, Galjevo, Polje Bijela, Dzepi, Josanica, Mladeskovici, Prevlje, Repovica, Vrbici, Tresanica, Glavicine, Gornje Polje, Donje Selo and Drecelj), and 4 settlements in the wider study area belonging to Mostar (Humilisani, Potoci, Podgorani and Kutilivac).</p> <p>In the wider study area belonging to Konjic, Polje Bijela is most populated settlement with 1,402 inhabitants and is the most densely populated settlement, whereas Josanica is the least populated settlement with only 34 inhabitants. With regard to</p>	Design/ Preconstruction/ Construction	<ul style="list-style-type: none"> <li>&gt; Worker influx, noise generation, dust emissions, potential soil and water contamination, road safety risks</li> </ul>	<ul style="list-style-type: none"> <li>&gt; In the design stage, organise consultations with City level authorities and LCOs on all issues of significance for the communities (e.g., issues of planned disposal sites for construction waste, planned new local roads and underpasses/overpasses).</li> <li>&gt; During the construction phase, JPAC and the Contractors to organise at least one public consultation meeting for each subsection to present the Project progress and receive feedback regarding the impacts of construction works.</li> <li>&gt; Include in CESMP provisions on workers accommodation (camps) in accordance with PR provisions and the EBRD/IFC Guidance Note "Workers' accommodation: processes and standards" 2009.</li> </ul>



Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>ethnicity, the population in the majority of settlements are mainly Bosniaks. Josanica is the only settlement with the majority of population belonging to the Croat ethnic group. Serbs are the minority in each settlement. Men and women are almost equally represented in this study area.</p> <p>In the wider study area belonging to Mostar, Potoci is the most populated settlement with 2,183 inhabitants and has the highest density of population per km<sup>2</sup>, whereas Podgorani is the least populated settlement with 614 inhabitants and has the lowest density. With regard to ethnicity, the majority of population in all settlements are Bosniaks. There is a considerable Croat population in Potoci (around a third of the population) and in Kutilivac (around a fifth of the population), whereas Serbs are a significant minority in all the settlements. Men and woman are almost equally represented in all four settlements.</p>			<ul style="list-style-type: none"> <li>&gt; Ensure that medical staff, first aid facilities, sick bay and ambulance services are available at all times at the site and at any accommodation (camps) for Contractor’s personnel.</li> <li>&gt; Implementation of education/awareness raising activities in the form of online presentations and brochures for communicable diseases.</li> <li>&gt; Development of a Construction Workers’ Code of Conduct.</li> <li>&gt; Development and implementation of a Construction Labour and Employment Plan, which will include, among others that all workers (including sub-contractors) have employment contracts and that these contracts are in line with national legislation.</li> <li>&gt; Development and implementation of an Emergency Preparedness and Response Plan for construction (EPRP) to identify and address all major hazards for workers and the local community during the motorway construction.</li> <li>&gt; Establishment of a fenced safety zone around the facilities during construction of Project infrastructure.</li> <li>&gt; Development and implementation of a Traffic Management Plan (TMP) for the construction phase containing traffic organisation measures.</li> <li>&gt; Implementation of a Stakeholder Engagement Plan (SEP), in particular the provisions on providing timely information to local communities on the extent of construction works and duration, as well as information on access to land on the other side of the motorway and the contact details of the Contractors for any grievances.</li> </ul>
	Construction	<ul style="list-style-type: none"> <li>&gt; Job creation (temporary local employment opportunities)</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Hiring guidelines for recruitment will be in place to promote transparency of the recruitment process.</li> <li>&gt; Equal opportunities and non-discrimination will be guaranteed in the recruiting process.</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
			<ul style="list-style-type: none"> <li>&gt; Clear information on the recruiting process and the selection criteria will be publicly available and easy to access.</li> <li>&gt; Emphasis on employing local personnel residing in the Project area.</li> </ul>
	Operation	<ul style="list-style-type: none"> <li>&gt; Community health and safety impacts (traffic, noise, exhaust gases)</li> <li>&gt; Temporary nuisances during maintenance works</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Development and implementation of an Emergency Preparedness and Response Plan for operation as a part of OESMP, as well as Traffic Management Plan (TMP) to identify and address all major hazards for workers and the local community.</li> <li>&gt; Implementation of SEP, in particular provisions on providing timely information to local communities on the extent of works and duration prior to the commencement of maintenance works, as well as provisions on ongoing implementation of the grievance mechanism.</li> </ul>

## 4.12 Local Roads and Infrastructure

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>The existing road network in the Project area is made up of access roads, local roads, unpaved roads, and footpaths, which connect local settlements with the main M17 road and two regional roads.</p> <p>Some local roads are narrow roads with slow traffic (such as in the Bijela settlement).</p>	Construction	<ul style="list-style-type: none"> <li>&gt; Local road damage</li> <li>&gt; Traffic congestions</li> <li>&gt; Access restrictions</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Implement SEP, in particular the provisions on providing timely information to local communities about the Project, risks and disturbances associated with the construction and operational phases, timing of any disruptions, and alternative access routes (with maps) during any periods of restricted access.</li> <li>&gt; Develop and implement a TMP for construction phase (as part of the CESMP) containing traffic management measures. The TMP will need to consider phasing off the works to ensure local access is retained, including public transport.</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
			<ul style="list-style-type: none"> <li>&gt; Provide information on alternative access roads as needed and informing relevant local communities about these options.</li> <li>&gt; Organise consultations with City level authorities and LCOs on all issues of significance for the communities.</li> <li>&gt; Prior to construction works, document the status of all local roads which will be used by the Contractors during construction works. All local roads used for purpose of construction machines and vehicles movement should be fully restored to at least pre-project state prior to demobilisation of construction teams.</li> <li>&gt; Construct new local roads to enable local inhabitants to reach their land plots and other locations in case local roads are interrupted by the motorway section.</li> </ul>

### 4.13 Public Utility Services

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
Electricity, water, sewage, waste and telecommunication services are provided in the Project area. Information on possible collisions with public utility infrastructure which may result in accidental disconnections will be provided within the preliminary consents on the Preliminary Design from competent authorities and public utility companies.	Preconstruction/ Construction	> Disruptions to public utility services (electricity, water, sewage, telecommunication)	<ul style="list-style-type: none"> <li>&gt; Submit the requests for obtaining prior consents on the Preliminary Designs from competent authorities and public utility companies.</li> <li>&gt; Foresee mitigation measures for identified collision points contained in preliminary consents from competent authorities and public utility companies, responsible for transport/transmission, communications and infrastructure (such as development of additional detailed designs for collision resolution, and inclusion of mitigation measures within the Main Design).</li> <li>&gt; Develop a Utility Conflict/Collision Matrix to provide management tools to deal with conflicts, organise relevant information on conflicts and alternatives and allow tracking of conflict resolution progress.</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
			<ul style="list-style-type: none"> <li>&gt; Implement mitigation measures for identified collision points contained in the preliminary consents from competent authorities and public utility companies, responsible for transport/transmission, communications and infrastructure.</li> <li>&gt; Ensure emergency and prompt reaction in case of disruption.</li> <li>&gt; Implement SEP, in particular provisions on providing timely information to local communities (both residents and private commercial facilities) on planned cuts in public utility services and contact points in case of accidental disconnections, and (ii) provisions on regular communication with utility companies regarding ground disturbance works near public utility installations to reduce the risk of accidental disconnections and to ensure any issues are flagged with these utility companies.</li> </ul>

#### 4.14 Land Acquisition, Restrictions on Land Use and Involuntary Resettlement

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>Almost 76% of the Project footprint (motorway and the Konjic Bypass) will be laid down on forest land and almost 20% on agricultural land. The majority of households own agricultural land, used mainly for vegetable growing for subsistence purposes.</p> <p>It is currently estimated that approximately 350 land plots will be permanently acquired for needs of constructing the motorway section and the Konjic Bypass, with the displacement of some households and businesses. In addition, private land may need to be acquired for the disposal sites.</p>	Preconstruction/ Construction	<ul style="list-style-type: none"> <li>&gt; Land acquisition, restrictions on land use and involuntary resettlement</li> <li>&gt; Temporary occupation of private land and temporary losses of business income, loss of wages (of hired labour/employees) during construction works</li> </ul>	<ul style="list-style-type: none"> <li>&gt; Develop and implement the LARPs for the subsections: Konjic (Ovcari)-Prenj Tunnel, for the Prenj Tunnel itself, for Prenj Tunnel-Mostar North and for the Konjic Bypass, in line with the developed LARF.</li> <li>&gt; Develop and implement site-specific LARP in line with the developed LARF, if privately owned, used or occupied land take is required for construction of new local roads.</li> <li>&gt; Set up and implement a Project-specific grievance mechanism as elaborated in LARF/LARPs and SEP.</li> <li>&gt; Develop and implement a Traffic Management Plan (TMP) for the construction phase (as part of the CESMP) containing traffic measures. The TMP will need to consider phasing off the works to ensure local</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
			<p>access is retained, as access restrictions may cause temporary losses of business income during construction works.</p> <ul style="list-style-type: none"> <li>&gt; Implement the Detailed Construction Waste Management Plan (DCWMP) and put in operation waste management procedures to avoid inappropriate deposition of construction waste in and around the construction site.</li> </ul>

## 4.15 Health and Safety Risks for Workers

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>Currently, there are no estimates on the number of workers needed for the construction of this motorway section as this will be defined by the Contractor prior to the start of construction works or where they will be coming from (although it is recommended to give preference to the employment of local population during construction to the extent possible), but the Project will require a large workforce to carry out various tasks. Workers' accommodation (camps) will be required for the Project.</p>	Construction	<p>Site preparation, construction and operation activities and the use of temporary workers' accommodation (camps) pose potential risks to the health, safety, security of construction workers if not managed appropriately.</p>	<ul style="list-style-type: none"> <li>&gt; Develop and implement an OHS Plan and Fire and Explosion Management Plan and implement specific OHS measures with special focus on (but not limited to): unexploded ordnances, installing safety fences and warning signs, traffic management etc.</li> <li>&gt; Follow the FBiH legislation on labour and OHS, as well as PR 2 provision on grievance mechanism for workplace concerns.</li> <li>&gt; Organise workers' camps in line with EBRD/IFC Guidance Note "Workers' accommodation: processes and standards" 2009.</li> </ul>
<p>The operation phase is also expected to generate permanent direct employment opportunities for a small number of people which will work on the pay toll stations as well as temporary opportunities during maintenance works.</p>	Operation		<ul style="list-style-type: none"> <li>&gt; Include in OESMP specific health and safety requirements for road maintenance. It should include (but not be limited to): hazardous materials management, traffic management, working at heights, working in confined spaces, electrical hazards, etc.</li> </ul>

## 4.16 Danger from Unexploded Ordinance (UXO)

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>The motorway section passes through an area where fighting took place in the 1992-1995 war period. In the areas of Polje Bijela, Prevlje, Mladeskovici and Podgorani, there are some UXO suspicious areas that need to be inspected and demined. Some areas therefore may need to be demined, which will be known after JPAC receives approval/verification from Bosnia and Herzegovina Mine Action Centre (BHMIC).</p> <p>Although the remaining area along the motorway section is proclaimed safe, special attention is needed during earth moving works and blasting works, and in case of any doubt BHMIC will be contacted for further instructions. Thus, danger from mines and UXOs represents a potential risk.</p>	Preconstruction	> Danger from UXOs	<ul style="list-style-type: none"> <li>&gt; In case of any mined areas, ensure demining before construction works in cooperation with BHMIC specialists.</li> <li>&gt; Arrange the execution of construction works only after JPAC receives approval/verification from BHMIC.</li> </ul>
	Construction	> Danger from UXOs	<ul style="list-style-type: none"> <li>&gt; Ensure that equipment operators receive training for identification of potential UXOs during construction works.</li> <li>&gt; Pay special attention during earth moving works and blasting works. In case of any doubt, stop the works and send a notification to BHMIC for consultations and further instructions.</li> </ul>

## 4.17 Cultural, Historical and Archaeological Heritage

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<p>Six cultural/religious assets of importance are located in the wider Project area – listed from nearest to furthest from the Project footprint:</p> <ul style="list-style-type: none"> <li>&gt; the mosque Donje Selo (at around 30 m from the viaduct belonging to the Konjic Bypass),</li> <li>&gt; the Orthodox cemetery in the Donje Selo settlement (at around 110 m from the viaduct belonging to the Konjic Bypass),</li> <li>&gt; Another Orthodox cemetery in the Mladeskovici settlement (at around 122 m from the motorway route)</li> </ul>	Preconstruction/ Construction/ Operation	> Damage to visible and buried cultural, historical, and archaeological heritage	<ul style="list-style-type: none"> <li>&gt; Submit the requests for obtaining prior consents on the Preliminary Designs from Federal Institute for Protection of Monuments.</li> <li>&gt; Include in the Main Design all the measures as instructed by the Institute and undertake any preventive archaeological surveys as required by the Federal Institute for Protection of Monuments and notify the Institute of survey results.</li> <li>&gt; Communicate with the Konjic Parish and Islamic Community through individual meetings about the Project, risks and disturbances.</li> <li>&gt; Ensure alternative access to the mosque and Orthodox cemetery in the Donje Selo settlement, Orthodox</li> </ul>

Baseline Summary	Phase	Potential Impact(s)	Mitigation Measures
<ul style="list-style-type: none"> <li>&gt; Muslim cemetery Kuti in the Kutilivac settlement (at around 170 m from the motorway section</li> <li>&gt; the Orthodox church "Holy Sunday – Bijela" and the mosque "Bijela" located in the Bijela settlement (at around 415 m and 467 m respectively from the motorway section)</li> </ul> <p>During the construction phase, it is also possible that previously unknown archaeological sites may be found.</p>			<p>cemetery in the Mladeskovici settlement and the Muslim cemetery in the Kutilivac settlement in case of any access restrictions.</p> <ul style="list-style-type: none"> <li>&gt; Post community grievance mechanism information the entrances to the mosque and cemeteries as well as construction sites.</li> <li>&gt; Post info-panels placed on construction sites and places of worship.</li> <li>&gt; Ensure that the Contractor develops a Chance Find Procedure and trains relevant staff and in its requirements prior to any site preparation and construction works.</li> <li>&gt; Implement SEP, in particular the provisions on ongoing consultations and engagement with affected stakeholders prior to, during and after works being conducted near sites of interest.</li> </ul>

## 5 Disclosure and Communications

A detailed Stakeholder Engagement Plan (SEP) has been developed for this Project, outlining the stakeholder engagement and communication programme, including access to the Project's Grievance Mechanism. The Project Implementation Unit (PIU) for this motorway section will be responsible for Project implementation, including the implementation of the SEP, under the supervision of the Lenders.

All grievances and enquiries can be sent to the following contact information:

Motorways of the Federation of Bosnia and Herzegovina  
Attn: Grievance mechanism contact person  
Address: Adema Buca 20, 88000 Mostar  
Hamdije Kresevljakovica 19, 71000 Sarajevo  
Tel: +387 36 512 300  
Fax: +87 36 512 301  
E-mail: [prituze@jpautoceste.ba](mailto:prituze@jpautoceste.ba)

A summary of all stakeholder engagement and disclosure requirements listed in detail in the SEP is provided in Table 4 below.



Table 4: Summary of Stakeholder Engagement and Disclosure Requirements

No.	Activity	Timing/further details	Responsibility
<b>DURING THE ESIA STAGE</b>			
<b>1</b>	<p>Ensure that the following Project documents are publicised on the websites of JPAC and the City of Mostar, City of Konjic, and Municipality of Jablanica:</p> <ul style="list-style-type: none"> <li>&gt; The Stakeholder Engagement Plan (SEP),</li> <li>&gt; Environmental and Social Impact Assessment (ESIA) including Environmental and Social Management Plan (ESMP),</li> <li>&gt; Public Grievance Form and Public Grievance Leaflet,</li> <li>&gt; Non-technical Summary (NTS) of the environmental and social assessment of the Project,</li> <li>&gt; Environmental and Social Action Plan (ESAP),</li> <li>&gt; Biodiversity Management Plan (BMP),</li> <li>&gt; Land Acquisition and Resettlement Framework (LARF) and subsequent Land Acquisition and Resettlement Plans (LARPs) – <i>see item 2 below for LARPs.</i></li> </ul> <p>Print and keep hard copies of documents at premises of JPAC (both Mostar and Sarajevo offices), the City of Mostar, City of Konjic, and Municipality of Jablanica.</p>	<p>All available Project information and documents will be disclosed to the public as soon as available, i.e., at least 7, but preferably 14 days prior to the public meetings.</p> <p>The disclosure package will be publicly disclosed on the websites of the JPAC, City of Mostar, City of Konjic, Municipality of Jablanica, EBRD and EIB during a period of 120 calendar days prior to consideration of the Project by the EBRD’s Board of Directors and will remain publicly available throughout the life of the Project.</p> <p>Information about the publication of the disclosure package to be publicised through local media.</p>	PIU
<b>2</b>	<p>Carry out targeted consultations and engagement with landowners/users will be directly affected by land acquisition during the development of future LARPs (household interviews, focus group discussions, key informant interviews).</p>	During LARP development	PIU
<b>3</b>	<p>Organise at least two public consultation meetings, one in Mostar and one in Konjic during Project preparation (but prior to the start of construction works).</p> <p>Encourage written proposals and comments.</p> <p>Provide timely access to the documents before the meetings (at least 7, but preferably 14 days in advance).</p> <p>Publish a summary report of all relevant issues raised, including explanations for inclusion or exclusion of proposals.</p>	<p>Stakeholders will be informed about the exact date, time, and venue where a meeting will be held, at least seven, but preferably 14 days in advance, through the websites of the JPAC, the City of Mostar, City of Konjic, Facebook page of JPAC, five LCOs as well as local media sources.</p>	PIU
<b>4</b>	<p>Hold separate small group discussions with vulnerable groups/their representatives at locations that enable easier access to those whose travel options may be limited (e.g., in the premises of relevant Local Community Offices).</p>	<p>Stakeholders will be informed about the exact date, time, and venue where a meeting will be held, at least seven, but preferably 14 days in advance, through the LCOs.</p>	PIU

No.	Activity	Timing/further details	Responsibility
5	<p>Publish a summary report of all relevant issues raised, including explanations for inclusion or exclusion of proposals.</p> <p>Organise other individual consultation meetings.</p>	As needed or requested by the JPAC, City of Mostar, City of Konjic, Municipality of Jablanica, or by any identified stakeholder groups/individuals	PIU
6	Document all opinions, remarks, and possible solutions with regard to the Project raised by stakeholders during consultation meetings, and address appropriately afterwards.	After engagement activities	PIU
<b>DURING THE DESIGN STAGE</b>			
7	<p>Organise consultations with City level authorities and LCOs on all issues of significance for the communities, including but not limited to the issues of planned new local roads and underpass/overpass (considerations of sufficiency, dimensions, and safety) with the aim of clearly presenting all planned additional infrastructure, hear the views of local residents in relation to access to their land and make changes, as far as practicable, to accommodate their needs.</p> <p>Document all opinions, remarks, and possible solutions with regard to the Project raised by stakeholders during these meetings, and address appropriately afterwards.</p> <p>Publish a summary report of all relevant issues raised.</p>	During the design process	PIU (together with project designers)
8	Consult with public utility enterprises during the planning stage on how to manage any planned or unplanned disruptions, aimed at reducing and mitigating impacts associated with disruptions to utility services		PIU (together with project designers)
<b>PRIOR TO CONSTRUCTION</b>			
9	Publicise information about the extent, timing and duration of planned construction works, and any expected disruptions and inconveniences via the websites of JPAC, City of Mostar and City of Konjic, and bulletin boards in five LCOs, places of worship, health centres, public service buildings and other community facilities.	Two weeks prior to the start of construction works	PIU
10	Direct communication with religious communities through group or individual meetings (face-to-face or telephone).	Prior to start of construction	PIU
<b>DURING CONSTRUCTION</b>			
11	<p>Hold at least one public consultation meeting for each subsection (in Mostar or in Konjic – whichever is closer to the subsection) to present the Project progress and receive feedback regarding the impacts of construction works.</p> <p>Announce and arrange the meetings in the same manner as foreseen for the meetings planned during the ESIA stage.</p>	During construction works	PIU (together with Contractor)

No.	Activity	Timing/further details	Responsibility
12	Providing timely information to local communities on planned water supply cuts and deteriorated water quality in case of an accidental pollution or temporary turbidity		
13	Ensure that community grievance mechanism details are posted on construction sites, places of worship, online, with authorities, at public buildings/facilities in the project area		
14	Regularly communicate with public utility enterprises during ground disturbance works near public utility installations to reduce the risk of accidental disconnections.		
<b>ONGOING</b>			
15	Publicise information about Project progress on JPAC website.	Periodically	PIU