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# NON-TECHNICAL SUMMARY

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**Technical Assistance to Connectivity in the Western Balkans 2  
(CONNECTA 2)  
NEAR/2022/EA-RP/0081**

**Sub-Project**  
*Code: CONNECTA2-TRA-INFR-BIH-DD-01*

**Technical assistance for the preparation of due diligence of detailed design and cost estimate and gap analysis of the existing feasibility study and ESIA for Foca-Hum in BiH**

# Issue and revision record

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## Information Class: EU Standard

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## List of Abbreviations

BiH	Bosnia and Herzegovina
EBRD	European Bank for Reconstruction and Development
EU	European Union
GBVH	Gender Based Violence and Harassment
PIU	Project Implementation Unit
PRS	Javno preduzece Putevi Republike Srpske / Public Enterprise Roads of Republika Srpska
RS	Republika Srpska
SEP	Stakeholder Engagement Plan
WB	World Bank

# 1 Introduction

**Project context.** The European Bank for Reconstruction and Development (EBRD) and the World Bank (WB) are considering financing for Bosnia and Herzegovina (BiH) and the Public Enterprise Putevi Republike Srpske (PRS) to construct a **13.04 km road section** which forms part of the full 19.14 km Foca-Hum road which stretches from Brod na Drini (Foca) to Hum (Scepan Polje) at the Montenegro border. This 13.04 km section (the Project) is “Category B” under EBRD’s Environmental and Social Policy 2019 and “Substantial Risk” under WB’s Environmental and Social Framework 2016.

A Project Implementation Unit (PIU) was established by PRS in March 2025.

The detailed Project description is provided in the next chapter.

**Strategic importance.** The Foca-Hum road has been recognised as a transport route of strategic importance by several key planning and policy documents in BiH and RS. In the *Framework Transport Strategy of BiH for 2015-2030*, this road has been identified as a priority for the period 2015-2025. It is also listed among the “priority roads” in the *Transport Strategy of RS for 2016-2030* and also explicitly referenced in the *Spatial Plan of RS*. The *Strategy for Development of Public Roads in RS for 2016-2025* highlights this road as one of significant importance to regional connectivity.

**Existing road.** After the Project is implemented, the existing road will remain in use but will be reclassified, transferring maintenance authority to the Municipality of Foca.

**Involvement of WB in 2024.** The Project forms part of the broader WB-financed “Sustainable, Integrated and Safe Road Infrastructure Project”. In October 2024, the following WB-compliant documents were prepared and disclosed by PRS:

- ESMF – Environmental and Social Management Framework
- SEP – Framework Stakeholder Engagement Plan
- ESCP – Environmental and Social Commitment Plan
- LMP – Labor Management Procedures
- RPF – Resettlement Policy Framework

Joint financing of the Project is currently under consideration by the EBRD and the WB.

**Project benefits.** The planned road construction is expected to generate a wide range of environmental and social benefits for both local communities and the broader region. These include:

1. **Improved road safety:** The current M18 road is characterised by narrow lanes, sharp curves, poor pavement quality and a lack of adequate safety infrastructure. These conditions contribute to frequent traffic incidents, particularly during adverse weather or the summer tourism season when traffic volume increases. The new road will feature a more stable and safer alignment, wider carriageways, improved signage, lighting, guardrails, drainage systems, bridges and retaining walls. Together, these upgrades will significantly reduce accident risks for all road users.
2. **Enhanced regional and cross-border connectivity:** The Project will improve a key transportation corridor between BiH and Montenegro, facilitating faster, safer and more efficient cross-border movement of people and goods. Enhanced road quality and reduced travel times will also benefit the large number of tourists using this corridor during the summer season. Moreover, the road is essential to supporting tourism and outdoor recreation linked to rafting on Rivers Drina and Tara, as well as visits to the Tara and Piva Nature Parks and Sutjeska National Park. Better connectivity is expected to extend the tourist season, boost visitation numbers and increase local revenues from accommodation, hospitality and tour services.

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- 3. Environmental management and resilience:** The Project includes the installation of proper stormwater drainage and wastewater management systems, which will help prevent runoff of oils and pollutants into nearby watercourses, particularly the River Drina. In addition, slope stabilisation, erosion control measures and retaining walls will reduce the risk of landslides, protecting both infrastructure and natural ecosystems. Importantly, the new road alignment will run further away from the Drina riverbanks and rafting camps than the existing road. This is expected to bring indirect environmental benefits for those facilities: reduced noise levels, improved air quality due to traffic being diverted further uphill and less congestion along the riverside access roads.

**Status of Project design.** The idea of modernisation of the Foca-Hum road dates back to the 1970s and 1980s. During that time, the initial Main Design was developed after having identified major traffic and infrastructure issues along the existing alignment. Engineers emphasised the urgent need for reconstruction due to sharp bends, unstable slopes and frequent landslides that made the road unsafe for daily use. However, no implementation followed and the conflicts and economic stagnation of the 1990s further delayed any progress.

It was not until the 21st century that road infrastructure development re-emerged as a priority, leading to initial feasibility studies to explore alternative routing options. In 2015, the European Union funded, through the Instrument for Pre-Accession Assistance (IPA), to support the preparation of technical documentation. As part of this process, a Conceptual Design was completed in 2015, followed by a Main Design in 2017.

In 2025, the CONNECTA2 consortium was engaged by EBRD and WB to carry out technical due diligence of the existing Main Design and to define tender requirements for optimisation of the route. A new designer will be contracted under the Yellow FIDIC conditions to prepare an updated Main Design and carry out the construction.

**This document presents the Non-Technical Summary (NTS) of the E&S assessment undertaken in the period January-July 2025 to assess potential risks and impacts, and to define measures that ensure alignment with national, Lenders' and EU requirements.**

**This NTS offers a simplified overview of the Project, explaining its background, legal obligations, as well as E&S impacts/risks and benefits. It also outlines the measures taken to address these impacts/risks.**

## 2 Project Description

The Project involves the construction of a new road alignment between Donji Kopilovi and the future border bridge over the River Tara. This stretch is 13.04 km long and climbs steep terrain, includes steep descents and passes through areas where the old road alignment was no longer suitable due to outdated designs, poor condition or previous construction works related to Buk Bijela Hydropower Plant. The road alignment follows the River Drina canyon, passing through challenging mountainous terrain characterised by steep slopes, landslide-prone areas and limited existing road infrastructure.

This section begins in Donji Kopilovi and extends to the area near the planned border crossing at Hum, close to the River Tara. The alignment generally follows the right bank of the River Drina, initially using a route that was originally designed and partially constructed in the 1970s. However, due to the condition of these structures and the interventions required, the new design from 2017 proposes their demolition and replacement with a newly designed bridge and two modern retaining walls.



Figure 1: Drone view of parts of the Project area

The complete technical design was completed as part of the Main Design in May 2017. Key technical features include the following:

<b>Design speed</b>	80 km/h
<b>Minimum radius of the horizontal curve</b>	200.000 m
<b>Maximum radius of the horizontal curve</b>	1,501.000 m
<b>Length in curve</b>	4,857.550 m
<b>Length in clothoid</b>	5,905.560 m
<b>Length in straight</b>	2,499.472 m
<b>Maximum longitudinal grade</b>	6.00%
<b>Minimum longitudinal grade</b>	0.50%
<b>Minimum Rv concave</b>	2,900.000
<b>Minimum Rv convex</b>	4,250.000
<b>Weighted average grade</b>	3.16%
<b>Cross-section elements</b>	<ul style="list-style-type: none"> <li>■ Traffic lanes: 3.25 m width</li> <li>■ Shoulder width: 1.30 m</li> <li>■ Marginal strips: 0.30 m</li> <li>■ Concrete gutters and drainage systems</li> </ul>
<b>Pavement structure</b>	<ul style="list-style-type: none"> <li>■ Wearing course: Asphalt BB 11, 5 cm</li> <li>■ Base course: Bituminous AGNS22, 7 cm</li> <li>■ Crushed stone aggregate layer: 30 cm</li> <li>■ Subgrade reinforcement as needed</li> </ul>

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<b>Bridges and retaining structures</b>	<ul style="list-style-type: none"> <li>■ 15 bridges along the alignment</li> <li>■ 80 retaining walls of varying lengths and heights to stabilise slopes</li> </ul>
<b>Drainage and environmental protection</b>	<ul style="list-style-type: none"> <li>■ Drainage systems for surface water management</li> <li>■ Erosion control measures</li> </ul>
<b>Traffic management and safety features</b>	<ul style="list-style-type: none"> <li>■ Road signage and markings</li> <li>■ Guardrails and protective barriers</li> <li>■ Improved intersections and access roads</li> </ul>

The main works involve the construction of a new road alignment designed for a driving speed of 80 km/h, with curves adapted to safety standards and radii ranging from 200 to 1,501 m.

The route traverses mountainous terrain and, in its initial segment, follows a partially constructed alignment from the 1970s that included earthworks, retaining walls and two viaducts (at km 6+800 and km 7+300). Due to their deteriorated condition, these structures will be demolished and replaced with a new bridge and two retaining walls.

The road includes significant elevation changes, with sections rising up to 50-60 m above the existing road near km 9+500. To ensure smooth traffic flow on steep gradients, a dedicated slow lane for heavy vehicles has been incorporated, based on detailed traffic capacity and speed analysis.

A total of 15 bridges will be built along the route, with a combined length of 1,951 m, ranging from 56 to 286 m. To support the road across unstable slopes and steep terrain, 80 retaining walls are planned, totalling 7,203 m in length, with heights between 2.7 and 10.71 m.

Several local roads and private access routes will be affected by the new alignment. These will be either relocated or repurposed to serve as access routes to properties, religious object and tourist areas. The design includes carefully planned connections between the old and new roads to maintain accessibility.

At the request of the Municipality of Foca, on-street bus stops have been included in the design. These stops are not physically separated from the main road.

A rest area viewpoint has been designed near chainage km 18+500, providing panoramic views of the River Tara canyon and the new cross-border bridge.

## 3 History of Project Development

### 3.1 Key Project Milestones

The table below outlines key Project preparation milestones.

**Table 1: Project milestones**

Type of document/process	Status of Completion
Feasibility Study	Completed, October 2015
Technical Study	Completed, October 2015
Preliminary EIA	Completed, October 2015
Traffic Study	Completed, October 2015
Multi-Criteria Analysis	Completed, October 2015
Conceptual Design	Completed, October 2015

Type of document/process	Status of Completion
Decision stating that it is not obligatory to conduct an EIA nor to prepare an EIA Study	Issued in January 2017
Local EIA Process	Completed, May 2017
Main Design	Completed, May 2017
Water Guidelines <sup>1</sup>	Issued in February 2017
Urban Technical Conditions	Issued in July 2019, Reissued in January 2024
Expert Opinion on the Evaluation of Location Suitability <sup>2</sup>	Issued in July 2019
Location Conditions	Issued in July 2020, Reissued in September 2023
Ecological / (Environmental) Permit	Issued in June 2024
Agreement on the Implementation of Joint Procurement "Construction of the Interstate Bridge over the River Tara and the Connecting Section"	Signed in August 2024
World Bank Sustainable, Integrated and Safe Road Infrastructure Project – Set of Framework Environmental and Social Documents	Completed, December 2024
Technical and E&S Assessment in line with EBRD and WB requirements	Under preparation; commenced in January 2025 and expected to be completed by September 2025

### 3.1 Permits and Approvals Required for the Project

The table below provides an overview of key permits and approvals relevant to the Project.

**Table 2: Permits and approvals for the Project**

Permit / Approval	Status
Ecological (Environmental) Permit	✓ Obtained (2024)
Water Guidelines	✓ Obtained (2017)
Urban Technical Conditions	✓ Obtained (2019; reissued 2024)
Expert Opinion on Location Suitability <sup>3</sup>	✓ Obtained (July 2019)
Location Conditions	✓ Obtained (2020; reissued 2023)
Building Permit	✗ To be obtained
Water Consent	✗ To be obtained
Use Permit	✗ To be obtained
Water Permit	✗ To be obtained

### 3.2 Spatial Planning Process

The **RS Spatial Plan (2015-2025)** is the strategic framework at entity level for infrastructure development. It identifies the need for significant infrastructure development in the Project area, specifically mandating the full modernisation of the main road from Foca to Scepan Polje, including the construction of a bridge over the River Tara. During its development in 2014, the draft plan was open

<sup>1</sup> To ensure proper water management and equitable access to water for all individuals, the Law on Waters in RS regulates the use of water rights through the issuance of water-related permits, known as Water Guidelines, Water Consents and Water Permits.

<sup>2</sup> According to the Law on Spatial Planning and Construction of RS, if no implementing spatial planning document exists, a professional opinion from a licensed legal entity must be issued along with the UTC.

<sup>3</sup> According to the Law on Spatial Planning and Construction of RS, if no implementing spatial planning document exists, a professional opinion from a licensed legal entity must be issued along with the UTC.

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for public review in all local government offices for two months, and a set of public discussions were held. The plan was then adopted by the RS National Assembly in February 2015.

The Project location is not covered by any municipal-level spatial planning document currently in force in Foca. No single regulatory plan fully encompasses the Project area. There are two publicly available **regulatory plans** that partially address specific segments of the route:

- The Regulatory Plan ‘Hum-Scepan Polje’, including applicable Amendments and supplements;
- The Regulatory Plan ‘Brod na Drini’, including applicable Amendments and supplements.

For both urban regulatory plans, the Foca Municipal Administration ensured public participation as required by the spatial planning legislation. All were made available for public review at several physical and online locations and presented through scheduled public hearings.

### 3.3 Local Environmental Impact Assessment and Permitting Process

Three rounds of environmental assessment were conducted according to the RS Law on Environmental Protection:

1. A **Preliminary Environmental Impact Assessment (EIA)** procedure was conducted in 2015, based on the Conceptual Design developed in the same year. Following the procedure, the Ministry of Spatial Planning, Civil Engineering and Ecology of RS issued a decision requiring the development of a full EIA Study.

Transboundary consultations were also conducted. In accordance with the Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention), BiH’s Ministry of Foreign Affairs notified Montenegro’s Ministry of Sustainable Development and Tourism, which published the documents and invited public feedback.

2. In 2017, the Ministry of Spatial Planning, Civil Engineering and Ecology of RS issued a formal Decision in 2017 stating that, due to the nature and scale of the project, it was not obligatory to conduct an EIA nor to prepare an EIA Study. However, the Decision also established that the project is subject to the obligation to obtain an Ecological (Environmental) Permit in accordance with applicable legislation.
3. The Ecological (Environmental) Permit was issued in 2024, valid for five years, confirming the Project’s compliance with environmental regulations and public participation requirements.

### 3.4 Analysis of Alternatives

**The “No Project” Alternative.** If the Foca-Hum road is not modernised, poor infrastructure, unsafe conditions and limited connectivity will persist. This would hinder regional economic growth, especially tourism and trade, and reduce local quality of life by limiting access to key services. Environmental risks such as emissions, runoff pollution and landslides would remain unresolved, while maintenance costs would continue to rise.

**Other Project Alternatives.** The idea of modernisation of the Foca-Hum road, as part of SEETO Route 2b and the shortest connection between Albania, Montenegro and Central Europe via Corridor Vc, dates back to the 1970s and 1980s. Modernisation efforts were however halted in the 1990s due to war and economic stagnation. The process was continued in 2010 when a Feasibility Study was developed which formed the basis for further analyses. A 2015 Multi-criteria analysis identified the most favourable route alternatives based on technical, environmental, economic and transport criteria. This analysis was key in determining the optimal alignment for the Foca-Hum road. To identify the most suitable route alternatives, a multi-criteria evaluation method was applied, considering the following factors:

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environmental impacts, geometric characteristics, route functionality, user impact, investment costs and geological/geotechnical conditions. Each alternative was scored and a sensitivity analysis was conducted using various weighting combinations. The currently proposed alignment was ranked as the most optimal.

## 4 Legal and Regulatory Requirements

The implementation of this Project will enable PRS to meet national requirements, as well as EBRD, WB and EU requirements. The Environmental and Social Action Plan (ESAP) which has been approved by PRS, and the Lenders includes a set of comprehensive mitigation measures to bring the Project into compliance with all these requirements.

### 4.1 National Requirements

The implementation of the Project is subject to a comprehensive legal framework in Republika Srpska, covering areas such as environmental protection, land acquisition, labour rights, occupational health and safety and road construction. Key among these is the **Law on Spatial Planning and Construction**, which regulates the preparation of technical documentation, issuance of permits and the use of spatial planning instruments. The **Law on Public Roads** governs the construction, management and maintenance of the road infrastructure, including main roads such as the Foca-Hum road.

The Project is also subject to the **Law on Environmental Protection**, which provides the overarching framework for environmental safeguards and outlines procedures for Environmental Impact Assessments. In addition, several other environmental laws are applicable to specific aspects of the Project, including the **Law on Waste Management**, the **Law on Air Protection**, the **Law on Protection from Noise**, the **Law on Nature Protection** and the **Law on Waters**.

Land required for Project implementation is acquired in accordance with the **Law on Expropriation**, which provides the legal framework for land acquisition in the public interest. Labour and working conditions are governed by the **Labour Law of RS**, which applies to all entities involved in the Project, including contractors and subcontractors. Workplace safety and health standards are regulated by the **Law on Occupational Health and Safety**, which defines the obligations of employers and contractors to ensure safe working environments during construction.

### 4.2 EBRD Requirements

The Project is co-financed by the EBRD and classified as a Category B project, due to its scale, potential cross-border impacts and sensitivity (notably the River Tara crossing). Since it is initiated before January 2025, the Project must comply with the EBRD Environmental and Social Policy (ESP) from 2019 and the associated Performance Requirements (PRs), namely:

- PR1: Assessment and Management of Environmental and Social Impacts
- PR2: Labour and Working Conditions
- PR4: Community Health, Safety, and Security
- PR5: Land Acquisition, Involuntary Resettlement and Economic Displacement
- PR6: Biodiversity Conservation
- PR8: Cultural Heritage
- PR10: Stakeholder Engagement and Information Disclosure

### 4.3 World Bank Requirements

As the Project is co-financed by the WB, it is also subject to the Environmental and Social Framework (ESF, 2018). For this specific Project, the applicable Environmental and Social Standards (ESS) include:

- ESS1: Assessment and Management of Environmental and Social Risks
- ESS2: Labor and Working Conditions
- ESS3: Resource Efficiency and Pollution Prevention and Management
- ESS4: Community Health and Safety
- ESS5: Land Acquisition and Involuntary Resettlement,
- ESS6: Biodiversity Conservation,
- ESS8: Cultural Heritage,
- ESS10: Stakeholder Engagement.

The following documents have already been prepared by PRS in line with WB requirements:

- Environmental and Social Commitment Plan (ESCP), September 2024,
- Environmental and Social Management Framework (ESMF), August 2024,
- Labour Management Procedures (LMP), August 2024,
- Resettlement Policy Framework (RPF), July 2024,
- Stakeholder Engagement Plan (SEP), September 2024.

### 4.4 EU Requirements

An overview of relevant EU directives applicable to the Project is provided below. These directives set out requirements in areas such as environmental protection, public participation, biodiversity conservation, waste and water management, road safety, occupational health and safety and climate policy, many of which have been partially or fully transposed into the legal framework of Republika Srpska.

- EIA Directive (2011/92/EU as amended by 2014/52/EU)
- Public Participation Directive (2003/35/EC)
- Access to Environmental Information Directive (2003/4/EC)
- Regulation (EU) 2021/1767
- Aarhus Convention
- Habitats Directive (92/43/EEC)
- Birds Directive (2009/147/EC)
- Water Framework Directive (2000/60/EC)
- Waste Framework Directive (2008/98/EC as amended by 2018/851)
- Road Infrastructure Safety Management Directive (2008/96/EC)
- OHS Framework Directive (89/391/EEC)
- OHS Construction Sites Directive (92/57/EEC)
- European Climate Law (Regulation (EU) 2021/1119)
- Bern Convention (Convention on the Conservation of European Wildlife and Natural Habitats, ETS No. 104)

## 5 Environmental and Social Impacts and Measures

A summary of E&S impacts and risks during the construction and operation is provided below, followed by measures to be put in place to mitigate any such impacts/risks.

## 5.1 Biodiversity and Protected Areas

Extensive biodiversity desktop and field surveys were conducted between April and July 2025 to identify key ecological values, assess potential impacts, and inform mitigation and monitoring measures in line with national regulations and international standards, including EBRD PR6 and WB ESS6. The surveys covered: habitat types, periphyton and phytoplankton, flora and vegetation, invertebrates, herpetofauna, fish, birds, bats, and non-volant mammals. Protected areas and transboundary conservation zones were also considered within a 15 km buffer of the Project corridor.

The area supports high biodiversity, with 350 vascular plant species, 143 invertebrate taxa, 15 species of herpetofauna, eight fish species, 67 bird species, 15 bat species, and 26 non-volant mammal species. The Project area encompasses a mosaic of natural and modified habitats. Dominant forest types include oak and beech forests, with turkey oak-sessile oak forests (on southern slopes) and montane beech forests (on northern slopes) being dominant. However, due to historic logging, many forest areas have been converted into shrubs, grasslands, and orchards. Riparian habitats along the River Drina are ecologically valuable but locally fragmented due to tourism and recreation activities.

Key flora of conservation interest includes the species ladybells and purple cyclamen protected under the EU Habitats Directive and Bern Convention. Three invasive plant species were confirmed: black locust, tree of heaven, and annual fleabane, with others expected to occur seasonally.

Algal surveys confirmed good ecological status of the Drina River based on species composition and saprobic indices. Among invertebrates, 39 sensitive taxa were identified, many of which are protected under the EU Habitats Directive and Bern Convention, including the scarce fritillary and great capricorn beetle listed as vulnerable on IUCN Red List.

Most recorded herpetofauna species are commonly found across BiH and are well-adapted to anthropogenic and semi-natural habitats. The most frequently observed species included the yellow-bellied toad, European green lizard, and nose-horned viper. All but one species are classified as protected according to the EU Habitats Directive. One species fire salamander is listed as vulnerable on the IUCN Red List.

Fish surveys confirmed the presence of eight native fish species, including the regionally endemic and vulnerable huchen, which uses the Project area as a migration corridor and overwintering site.

Bird surveys confirmed eight species are protected by the EU Birds Directive, four listed in the Bern Convention, and eight species classified as vulnerable in Montenegro. The Drina and Tara canyons are ecologically important, providing critical breeding and migratory habitats, especially for raptors and passerines.

Bats were recorded across various habitats along the River Drina canyon. All species are protected under the EU Habitats Directive, and four under the Bern Convention. Only one colony was recorded, located 2.5 km from the Project and will not be disturbed by the Project implementation activities.

A total of 14 small mammal species and 12 large mammal species were identified in desktop and field surveys. The most important confirmed species of conservation concern is the Eurasian otter.

In the **pre-construction phase**, key risks to biodiversity arise from inadequate or delayed planning and lack of detailed baseline data. These may lead to the encroachment of sensitive habitats, fragmentation, and degradation especially affecting species with limited mobility. To avoid or minimise impacts, all avoidance zones (e.g. River Drina, critical habitats and riparian belt) must be integrated in the Main Design. Several spoil disposal sites will be relocated to avoid sensitive areas unless justified otherwise.

Design measures include bat hop-overs, culverts, and guiding fences to support species movement and reduce collision risk.

The **construction phase** is associated with habitat loss, degradation, and fragmentation due to vegetation clearance, earthworks, and noise. Sensitive riparian zones, stagnant water bodies, and forest habitats may be affected. Direct impacts are most intense within 20 m of the construction footprint, with indirect impacts expected up to 500 m. Key risks include: disturbance to flora and fauna, aquatic and riparian habitats; impacts on amphibians and reptiles from altered water flow and sedimentation; loss of foraging and roosting habitats for bats and birds; temporary disruption to habitat connectivity for semi-aquatic species like the Eurasian otter; spread of invasive species; pollution of soils and water from runoff; noise, vibration, and artificial light affecting behaviour, reproduction, and foraging of nocturnal species. Key mitigation measures include appointing an Ecological Clerk of Works, enforcing seasonal restrictions for vegetation clearance, and applying pre-clearance surveys to identify potential new roosts and slow-moving fauna. Construction activities will be limited to designated areas, and compensatory measures such as bat boxes, artificial shelters, and habitat restoration will be implemented. Invasive species management, and environmental training for workers will be performed.

During **operation**, ongoing pressures include habitat degradation from edge effects, light and noise pollution, and potential mortality from vehicle collisions. Key risks include barrier effects impacting wildlife movement; reduced quality of habitats near the road due to dust, emissions, and heavy metals; increased collision risk for fauna; continued spread of invasive species; disruption of aquatic ecosystems through polluted runoff affecting sensitive species like stone crayfish and fish dependent on clean gravel substrates. While most impacts are considered low to medium in magnitude, targeted mitigation is essential to prevent long-term biodiversity loss and maintain ecological connectivity. During operation, regular maintenance of mitigation structures (fencing, culverts, wildlife crossings) will be ensured. Collision risk will be monitored through roadkill surveys, and if increased mortality is recorded, adaptive management measures will be implemented.

The Project does not intersect any nationally or internationally designated protected areas. However, it is located in proximity to several conservation sites, including Tara Nature Park, Piva Nature Park, the proposed Natura 2000 site Maglic-Volujak-Zelengora, Sutjeska National Park, the Tara River Basin Biosphere Reserve, and several candidate Emerald Network sites in both BiH and Montenegro. These areas are situated in marginal zones and are separated from the Project by natural topographic features, including the Rivers Drina and Tara, which serve as effective ecological buffers.

As a result, direct habitat loss, fragmentation, or barrier effects on these protected areas are not expected. Potential indirect impacts such as noise, light, or air pollution are considered negligible due to the limited ecological connectivity, distance from the alignment, and the presence of natural and vegetative buffers. During the operation phase, long-term disturbance is expected to remain minimal, particularly given the low ecological sensitivity of the adjacent habitats.

## 5.2 Hydrogeology and Groundwater

The Project area lies in a geologically and geomorphologically complex zone shaped by fluvial, colluvial and tectonic processes. The alignment traverses steep terrain between the Drina River and surrounding mountain slopes, with elevations ranging from 420 to 590 m, rising to over 1,800 m in nearby massifs. The terrain is prone to erosion, landslides and gravitational movement, particularly along slopes exceeding 32°. The underlying geology includes Carboniferous, Triassic and Quaternary deposits, with widespread colluvial and foothill sediments over impermeable bedrock. Fault systems are present throughout the valley, contributing to geological instability and influencing groundwater movement.

Hydrogeologically, the area is underlain by low-permeability formations, limiting groundwater flow. Groundwater generally appears as small-scale seepage or spring activity along contact zones or within fissured rock. Field surveys identified several springs used by local residents and rafting camps for water supply. These sources are typically located above the road alignment and are not part of any protected public supply zones. However, informal water supply lines, often rubber hoses, cross the alignment and may be disrupted during construction.

Site inspections in 2025 recorded low groundwater yields, confirming that inflows into excavations are likely to be minor and manageable. No significant groundwater obstacles are expected for foundation works or deep excavation. The terrain is classified as moderately seismic, and no special constraints are anticipated provided Eurocode seismic design standards are followed.

During **construction**, the main risks include accidental pollution from fuel or waste discharge, short-term turbidity from earthworks and potential disruption to local water supply systems. These impacts are expected to be localised and temporary, and standard dewatering and containment measures will be sufficient to manage groundwater inflow. A key concern is protecting private water lines supplying rafting camps; technical solutions will be required to maintain their function. To minimise construction-phase impacts, water from excavations will be collected and treated before discharge. All water supply connections must be mapped and preserved through culverts or alternative piping. Wastewater from concrete batching will be treated and refuelling and hazardous material storage will follow strict protocols to prevent spills.

During **operation**, the primary risk is pollution from untreated road runoff, including hydrocarbons, heavy metals and de-icing agents. However, given the low permeability of underlying soils and absence of karst aquifers, groundwater vulnerability is assessed as low to moderate. During operation, road runoff will be monitored and must not be discharged near springs or wells. Collectively, these measures are expected to reduce groundwater-related risks to negligible levels.

### 5.3 Surface Water

The Project area features a dense hydrological network, including the Rivers Drina and Tara, numerous streams and seasonal gullies. The alignment follows the Drina River for over 13 km and then the Tara River. Most watercourses along the route ultimately discharge into the Drina, with only one feeding into the Tara. A total of 107 surface water bodies were identified, 74 of which are within Section B. The area includes both perennial and intermittent streams, many of which are small and unregulated. Surface water quality is generally good, although past and recent monitoring recorded elevated lead levels in some sections of the Drina. No industrial pollution sources are present, though household waste and poor maintenance of culverts were observed. Sampling in 2025 confirmed good water quality in most locations, with one area near the Tara-Drina confluence showing moderately reduced quality.

The Project will intersect multiple water bodies through open drainage systems, culverts, bridges and spoil disposal sites. Culverts will regulate over 60 streams, while 13 bridge crossings are planned without placing pillars in riverbeds. Drainage infrastructure will direct road runoff into nearby watercourses through 48 discharge points. Two spoil disposal sites are located in sensitive areas with high soil saturation and low flow velocity, increasing the risk of localised flooding and pollution. However, the Main Design does not currently provide mitigation measures for watercourse regulation at spoil disposal or access road sites.

During **construction**, stream diversion, culvert installation and earthworks may alter water flow and recharge, especially in natural and low-resilience streams. If poorly designed, culverts may disrupt flow, cause flooding or drying and fragment aquatic habitats. Pollution risks from sediment runoff, fuel spills,

wastewater discharge and improper waste handling are high, particularly in areas where streams are regulated or near spoil disposal sites.

Mitigation begins in the design phase, where the hydrological study must be updated to reflect current rainfall patterns and flow conditions. Culverts should be optimally located and designed using ecological principles to maintain natural flow, bed conditions and aquatic continuity. Drainage systems should include sediment traps and vegetative buffers, particularly in seven identified water retention zones. At spoil disposal sites and access roads, surface water flows must be preserved and properly regulated with appropriate drainage measures.

During construction, erosion control, sediment barriers, spill containment and proper waste management will be critical to prevent water contamination. Pollution prevention protocols will be enforced through an Emergency Response Plan and daily site monitoring.

During **operation**, road runoff will carry oil, heavy metals, tyre particles and de-icing agents directly into streams. As no treatment system is included in the open drainage design, this presents a medium risk to surface water quality, especially in low-lying retention zones where runoff accumulates more easily. Biodiversity surveys confirmed the presence of salmonid species, increasing ecological sensitivity in affected streams. In the operation phase, regular cleaning and maintenance of drainage structures, use of eco-friendly de-icing agents and monitoring of discharge quality will help maintain water quality. While open drainage presents limitations, the combined measures are expected to reduce surface water risks to low levels, though not entirely eliminate them.

## 5.4 Soil and Land Use

The Project area is characterised by low-fertility soils such as Distric Cambisols, Calcocambisols and Rendzinas, mainly developed on limestone and dolomite. Fertile soils are limited to small alluvial patches along the River Drina, while most of the land is forested and unsuitable for agriculture due to steep slopes, erosion and shallow profiles. Land cover is dominated by broadleaf forest, herbaceous vegetation and a minor share of sealed surfaces. According to spatial planning data, the road passes through nearly 5 hectares of farmland. The corridor is also highly prone to landslides due to unstable geology, steep terrain and erosion-prone conditions. Previous assessments identified active and high-risk landslide zones, often worsened by human activity. Soil quality testing near the planned bridge over the River Tara revealed no contamination, indicating limited pollution risks from existing activities.

During **construction**, key impacts on soil include topsoil removal, compaction from machinery, slope destabilisation, land use change and the potential for contamination from fuel or construction materials. Approximately 42 hectares of vegetated land will be affected, reducing soil fertility and increasing erosion risks if not properly managed. Landslides may be triggered by slope cuts and vegetation clearance, particularly in geotechnically unstable areas already identified in the Main Design. Without adequate mitigation, soil loss and long-term degradation could result. The conversion of land from forest to infrastructure also leads to permanent ecological change and habitat fragmentation.

To minimise impacts, a Topsoil Management Plan will guide proper stripping, storage and reuse of fertile soil. Soil compaction will be reduced through controlled machinery movement and use of low-impact technology. Landslide and erosion risks will be managed through structural and vegetative slope stabilisation, revegetation and erosion control measures. Land use change will be limited to essential areas and cleared zones will be restored using native species. Potential contamination will be addressed through strict handling procedures for fuel and chemicals, designated washing areas and emergency response planning.

During the **operation** phase, the main risks include soil erosion on cuts and embankments, surface runoff pollution and accidental spills. Poor maintenance of drainage systems or erosion control measures could worsen these impacts over time, particularly if vegetation is not restored and stabilisation measures are not implemented as designed. During operation, regular drainage maintenance, slope inspections and spill response plans will ensure long-term soil protection. With full implementation, all soil-related risks are expected to reduce to low significance.

## 5.5 Air Quality

To assess current conditions, one-time measurements were taken at two locations along the proposed road. Results were within legal thresholds under the *Regulation on Air Quality Values*<sup>4</sup>, indicating good air quality across the road corridor.

Road construction and use can affect local air quality. During construction, dust and exhaust from machinery and equipment may temporarily worsen air quality. After the road opens, increased traffic can lead to higher levels of air pollutants like nitrogen oxides, carbon monoxide and fine particles.

Impacts during construction have been assessed per the Institute of Air Quality Management's Guidance<sup>5</sup>, which considers the type and amounts of materials used and the location of nearby people and ecosystems. Risk of dust impacts from earthworks, demolition and material transport is rated as medium.

Diesel-powered machinery will emit NO<sub>x</sub>, SO<sub>2</sub>, CO, VOCs and particulates. The number and type of machines, hours of use, fuel quality and maintenance will influence overall emissions. However, with the road designed as a two-lane alignment and only moderate number of machineries is expected to be operational simultaneously, combined with favourable dispersion conditions (forest cover, river valley), exhaust impacts are expected to remain low. Effects will be temporary and more pronounced downslope due to wind and terrain.

To reduce dust during construction, Contractors will apply wetting of exposed surfaces in dry conditions near residential areas, cover stockpiles and transport loads and revegetate disturbed areas promptly. Operations near communities will be paused during strong winds. Trucks will be covered and cleaned when leaving the site. Machinery will be maintained regularly, with defective equipment removed and low-sulphur fuel and modern engines used where feasible. Stationary emitters will be placed away from sensitive areas. These measures reduce the overall air quality risk from medium or low to low or negligible.

Traffic emissions during operation will be both exhaust and non-exhaust, including wear from tires and brakes and dust resuspension. Dispersion will depend on traffic volumes, speed, terrain, meteorology and vegetation. The area's rural, forested character and the River Drina valley provide strong natural ventilation. Few receptors are located within 200 m of the road and no highly sensitive uses are nearby. Projected traffic is relatively low, ranging from 940 vehicles/day in 2028 to 1,689 by 2057. These levels, combined with the favourable setting, suggest negligible operational air quality impacts, with concentrations expected to remain below national and international standards.

## 5.6 Climate and Climate Change

The Project area is characterised by a moderately continental climate, with mountain climate conditions prevailing at higher altitudes. Long-term climate projections under the RCP8.5 scenario indicate a rise

<sup>4</sup> Official Gazette of Republika Srpska, No. 124/12

<sup>5</sup> Institute of Air Quality Management (2024) Guidance on the assessment of dust from demolition and construction, version 2.2. available at [iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf](http://iaqm.co.uk/wp-content/uploads/2013/02/Construction-Dust-Guidance-Jan-2024.pdf)  
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in average temperatures by approx. 5°C and a 5-10% decline in total annual precipitation by the end of the century.

The implementation of the Project is expected to result in a slight reduction in Scope 2 emissions<sup>6</sup>, primarily due to a reduced number of lighting poles and a projected decline in the grid emission factor, with emissions decreasing by approx. 14% in both 2028 and 2057 compared to the baseline scenario. Scope 3 emissions<sup>7</sup> associated with vehicle use are expected to increase as a result of higher traffic volumes and road capacity improvements, rising by 15.4% in 2028 and 22.4% in 2057. Additionally, one-time Scope 3 emissions from construction materials are estimated at 120,191 tCO<sub>2e</sub>. Despite the overall increase in emissions driven by intensified road use, the shadow cost of carbon in the project scenario is 20.6% lower, indicating improved long-term carbon efficiency.

On the climate adaptation side, the assessment confirms the project is exposed to several climate risks, with landslides and pluvial flooding rated as high risks, and wildfires and snow/ice events considered medium risks. A range of technical resilience measures have already been integrated into the design, including slope stabilisation, improved drainage, geotechnical investigations, and modifications to retaining structures. Additional mitigation measures propose cover design, as well as the construction and operational phases and include emergency planning, erosion and sediment control, fire prevention measures, and ongoing maintenance of critical infrastructure. Nature-based solutions, such as the replanting of native vegetation and afforestation of spoil disposal sites, also form an essential part of the project's resilience strategy.

## 5.7 Noise and Vibrations

The main existing sources of noise in the Project area are traffic on the M18 and M20 roads, along with local vehicle movement, community activities and wood processing in Brod. To assess current conditions, daytime noise levels were measured at two representative locations near sensitive receptors. The results showed compliance with permissible daytime limits. No significant sources of vibration exist in the area such as active mines or heavy industry.

Road construction and operation will generate noise and, to a lesser extent, vibration. These impacts vary between phases, with machinery and blasting dominating during construction and vehicle traffic being the primary source of noise during operation.

Machinery, earthworks and vehicle movement are the main sources of noise near active sites. Some machines such as bulldozers may exceed 66 dB at 50 m. Noise levels drop with distance and terrain or vegetation may provide shielding. Exposure will be temporary and shift as works progress, with the impact assessed as moderate. Vibration may exceed structural damage thresholds up to 27 m from piling and 8 m from other machinery. Human sensitivity thresholds may be exceeded up to 144 m from piling. As construction advances, these effects will shift and diminish. Localised mitigation will be required for buildings within 50 m. During construction, noise will be managed through working-hour restrictions, equipment selection and maintenance and communication with local residents. Temporary acoustic barriers and adjusted work schedules may be used in sensitive zones. For vibrations, low-vibration methods will be applied near buildings and monitoring conducted if complaints arise.

Operational noise was modelled. All receptors fall within regulatory thresholds, except two houses located 7 and 9 metres from the alignment, which may experience moderate impact. Passive noise protection (e.g., improved joinery) is recommended for these buildings, if post-construction monitoring indicates a need. For all other locations, the impact is negligible. Vibrations from road traffic are not

<sup>6</sup> Indirect greenhouse gas emissions resulting from the generation of purchased electricity, steam, heating, or cooling.

<sup>7</sup> Indirect greenhouse gas emissions that occur in the value chain, including both upstream and downstream activities such as transportation, production of purchased materials, and use of sold products.

expected to be perceptible or damaging, even at 15 m distance, provided surfaces remain smooth and well maintained. After mitigation, all noise and vibration impacts are expected to remain within acceptable levels.

## 5.8 Waste and Materials Management

**Construction activities will generate various types of waste**, including from site clearance, excavation, concrete and asphalt works, blasting, equipment maintenance and the presence of workers. Expected waste categories include construction and demolition waste, municipal waste, packaging, oils and coatings. A Waste Management Plan (WMP) has been prepared as part of the Environmental Permit documentation. It outlines procedures for waste documentation, minimisation, segregation, storage, treatment and disposal. Approximately 750,000 m<sup>3</sup> of surplus material is anticipated and will be managed at designated disposal sites. Improper waste handling during construction could negatively affect air, soil, water, biodiversity and landscape, particularly if hazardous components are not correctly managed. Municipal waste from workers is expected to be minimal but must still be properly handled.

The Contractor must implement the existing Waste Management Plan and develop a Construction Waste Management Plan as part of the CESMP. These will include procedures for classifying, separating and storing waste in safe, designated locations, and transferring responsibilities to authorised waste handlers. Burning or burying waste on site is strictly prohibited and all non-reusable materials must be properly disposed of.

Fifteen **spoil disposal sites** were proposed in the 2017 Main Design. However, due to land use changes, several of these are no longer suitable, including sites now located near rafting camps or within critical habitats. These issues are addressed under the Tourism and Biodiversity sections of this NTS. The Designer will be required to identify alternative disposal sites as part of the new Main Design. The 2017 site selection was based on geotechnical and hydrogeological conditions, but these require reassessment. Some locations may be unsuitable due to erosion risks, flood exposure, ecological sensitivity or nearby settlements.

Impacts from the proposed spoil disposal sites will depend on local topography, hydrogeology and proximity to receptors. Spoil disposal must follow geotechnical and drainage design principles to prevent erosion and contamination. Disposal areas must be stabilised and revegetated. Sites must be located away from watercourses and critical habitats. Where steep slopes are present, lined ditches will be constructed to control runoff. The Designer must update site suitability based on current field investigations.

The **procurement of additional construction materials**, such as gravel and stone, will be managed by the Contractor and must be sourced exclusively from licensed suppliers with valid environmental and water permits. Material procurement also presents indirect risks if third-party suppliers fail to meet environmental standards. Illegal sourcing, if not prevented through proper oversight, could result in permanent environmental damage. Therefore, due diligence, documentation and supplier verification are necessary. For market-sourced materials, the Contractor must procure only from licensed suppliers with valid permits. A Materials Management Plan will be prepared to cover procurement, storage, tracking, quality control and contingency arrangements, and to ensure alignment with the Project's environmental and resource efficiency targets.

Under normal conditions, the **operation of the road** will not generate significant waste, though minor quantities may arise during periodic maintenance of road surfaces, signage and structures. During operation, waste from routine maintenance (e.g. signage, asphalt, guardrails) must be managed by licensed contractors in accordance with waste legislation. During road operation, Waste Management Plan will be updated, outlining roles and responsibilities for managing waste generated during

maintenance. Licensed operators will be engaged to handle waste treatment and disposal. Emergency procedures will be formalised through an Emergency Preparedness and Response Plan, supported by hazard assessments and staff training.

## 5.9 Landscape and Visual Setting

**Landscape Baseline Conditions.** As BiH lacks an official Landscape Character Assessment (LCA), this study relied on desktop analysis and field surveys. Existing references cover only climate, soil and vegetation and do not fully capture landscape character. Therefore, this assessment also considered settlement patterns, land use, cultural features and visual elements to form a context-specific LCA. Key aspects include:

- **Landscape features:** The River Drina valley is the dominant landscape feature, with steep, forested sides and terraces shaped by natural processes. Vegetation shifts with elevation, from riparian willow and poplar to oak-hornbeam forests and conifer stands at higher altitudes. Despite visible human activity (settlements, agriculture, roads), the area retains a largely natural, enclosed and remote character.
- **Topography:** The route crosses rugged karst terrain marked by steep valleys, rock outcrops, and fluvial terraces. The Drina canyon, especially near Foca and the Montenegro border, is visually dramatic, with narrow passage and high cliffs.
- **Land cover:** Broadleaf forests dominate, though many are degraded. Vegetation varies by elevation and exposure, with thermophilous species in the canyon and mixed forests at higher elevations. Grasslands and limited riparian zones add to landscape diversity.
- **Settlements:** The route passes sparsely populated areas. The largest settlement is Brod (~400 residents), with other small clusters such as Kopilovi. Infrastructure is limited and most homes beyond km 6+800 are isolated.
- **Protected areas:** The route partially overlaps with Tara Nature Park (at the bridge site) and lies near several Natura 2000 and Emerald sites. Piva Nature Park also starts at the BiH-Montenegro border, meaning the bridge falls within its boundary.

The most sensitive landscape areas are the Drina River corridor and Tara Nature Park, addressed with targeted mitigation. Remaining sections mostly traverse hilly terrain with degraded forest and landslides, with lower visual sensitivity.

**Visual Baseline Conditions.** A Zone of Theoretical Visibility (ZTV) analysis was carried out using a DEM model in QGIS, assuming a worst-case scenario (bare earth, no vegetation). Visibility was assessed within a 5 km radius, but topographic constraints reduced effective visibility to ~3 km, primarily from the western bank of the Drina. Woodland, especially deciduous cover, provides additional seasonal screening.

Residents in approximately 10 to 20 properties located in Donji Kopilovi and Celikovo Polje may be visually affected by the Project, with their sensitivity assessed as medium. Users of the M18 road will experience only brief, intermittent views of the alignment in Section B, and are therefore considered to have low visual sensitivity. Among the 34 rafting camps along the corridor, five camps located between km 12.3 and 16.0 will have direct views of the new bridges and spoil disposal sites and are assessed as highly sensitive; the remaining camps, which are oriented toward the river and at lower elevations, are considered to have low sensitivity.

Based on visibility modelling and field observations, three key receptor groups were selected for detailed assessment and photomontages were prepared for the viewpoints located near these locations. The first group includes residents living near km 5+750, at the start of Section B and a photomontage illustrating the current state and the planned Project for this location is provided in Figure 2. The second group consists of tourists staying in rafting camps around km 12+300 and a viewpoint

with the corresponding photomontage from this location is shown in Figure 3. The third group includes visitors to the Bastasi campsite and the nearby mosque, located between km 15+600 and 16+200, as presented in the Figure .

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Overview of Sensitive Receptors Locations  
Viewpoint 1

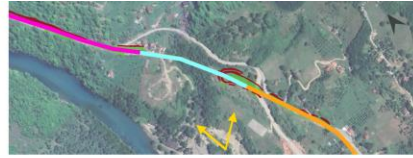


Figure 2: Viewpoint 1

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Overview of Sensitive Receptors Locations  
Viewpoint 2



Figure 3: Viewpoint 2

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Overview of Sensitive Receptors Locations  
Viewpoint 3



Without Project



With Project



**Figure 4: Viewpoint 3**

During **construction**, vegetation clearance will lead to permanent changes in the landscape. The formation of cuttings and embankments is expected to significantly alter the existing topography, creating new, visually prominent landforms. In areas where buildings are removed to accommodate the new alignment, the local landscape character will be further disrupted. The presence of machinery, construction compounds, fencing and lighting will temporarily dominate views, especially near residential areas and tourist camps. Additionally, dust generation and artificial lighting may affect both residents and tourists, degrading visual quality and tranquillity.

To minimise visual disruption, temporary opaque fencing will be installed around construction zones to screen machinery and works from view. Directional, low-intensity lighting will be used to reduce light pollution, particularly near sensitive receptors such as residential areas and rafting camps. Soil erosion

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prevention measures, outlined in chapters on Hydrogeology and Surface Water, will be applied to protect riverbanks and forested slopes, especially near the River Drina and Tara Nature Park. Construction compounds and access roads will be restored to their original condition following completion of works.

Once **operational**, the introduction of permanent infrastructure elements such as bridges and retaining walls will have a lasting visual presence, especially in areas with open or undeveloped surroundings. The movement of vehicles, use of road lighting and placement of signage will add dynamic visual activity to previously quiet landscapes, altering the experience of both residents and visitors.

Long-term mitigation focuses on reintegrating the infrastructure into the landscape. A Landscape Habitat Restoration Plan will guide the replanting of native vegetation on disturbed slopes, embankments and spoil disposal sites. Natural finishes and materials will be used on visible structures such as retaining walls and bridges to reduce contrast with the surrounding terrain. In visually sensitive locations, additional tree planting - especially using native evergreen species - will be carried out to soften the appearance of infrastructure and restore visual continuity.

## 5.10 Cultural Heritage

The **Hum-Bastasi Mosque**, which belongs to the Islamic Community, sits at around 20 meters from the future bridge. A small gravesite is located next to the mosque. Although they are close to the Project, neither the mosque nor the gravesite will be physically affected. The mosque was rebuilt between 2008 and 2009 and reopened in 2010, though the site has served a religious purpose since at least 1945. It is still used today, with more frequent activities taking place in summer and during major religious events such as Eid.

Construction activities near the mosque may cause temporary impacts such as noise, dust or vibration, especially during prayer periods in summer or on religious holidays. These impacts are not expected to disrupt mosque services but could reduce the sense of peace around the site. Some minor disruptions to access might also occur if construction is not well planned. To reduce temporary impacts during construction, regular communication with mosque representatives is planned, including advance notice of works and coordination to avoid major religious days. Common construction controls for noise and dust will be used to minimise disruption and continuous access to the mosque will be ensured.

During operation, a major positive impact will be the improved road access to the mosque. The new asphalt road will make it easier for visitors and worshippers to reach the site.

## 5.11 Tourism and Recreation

The Foca region is a well-established destination for nature-based tourism, particularly rafting on the Tara River, which is a UNESCO World Heritage Site and part of the Durmitor National Park.

**Rafting** is the dominant tourism activity, with dozens of camps operating along the Tara River and drawing thousands of visitors during the summer season. These camps contribute significantly to the local economy and rely heavily on the road infrastructure for guest access. Despite their distance from the direct road alignment, some of the planned spoil disposal areas are located near camps, raising concerns about potential operational disruptions.

**Fishing** in the region is predominantly recreational, covering over 200 km of watercourses with species such as trout, huchen and grayling. The sector includes regulated fishing zones and seasonal competitions. While no major impacts are expected on fishing activities, temporary disturbances such as vibration, noise and sedimentation during construction could affect aquatic ecosystems and fish migration patterns.

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The **hunting** sector manages a wide area overlapping with the project footprint and maintains a variety of wildlife species. While traffic-related wildlife casualties have occurred historically, the poor condition of the current road has helped limit speeds. Road modernisation may increase the risk of wildlife collisions without proper mitigation but is also expected to improve access for land and wildlife management purposes.

**Hiking** trails in the wider region are concentrated within Tara Nature Park and Sutjeska National Park, including areas near the Perucica primeval forest. Although the project does not intersect formal hiking routes, the improved connectivity is expected to support future trail development, joint tourist offerings and easier access to remote areas. The road alignment does not cross any protected core zones or habitats considered ecologically sensitive.

To avoid disruptions to rafting camps located near proposed spoil disposal sites, several sites (03A, 03B, 05A, 05B, 05C and 06) will need to be relocated during the design phase to more suitable locations further from active tourism facilities. This measure significantly lowers the risk of visual, noise and dust-related impacts during construction.

During the construction phase, direct coordination will be established with rafting operators to provide timely updates on construction activities, access limitations and expected disturbances. Heavy construction traffic will be limited during peak tourist months and weekends and spoil disposal activities will be restricted to weekdays and non-peak hours. Noise, vibration and dust control measures will also be implemented.

In the operational phase, improved road infrastructure is expected to enhance access to the region, reduce travel time and improve road safety, which could support further development of tourism in the area. Wildlife-vehicle collision risks will be addressed through formal coordination with the local hunting association. Their input will be used to determine the placement of wildlife warning signs and potential traffic-calming measures, reducing risks to both road users and wildlife.

## 5.12 Land Acquisition

The **land acquisition process commenced in 2021 based on the previous design and is almost completed**. To ensure compliance with the relevant requirements of EBRD and the World Bank, an audit of this past land acquisition will be conducted.

Once the final design and road alignment are confirmed and a revised Expropriation Study is prepared in line with the legal framework of Republika Srpska, a **Resettlement Action Plan/Livelihood Restoration Plan (RAP/LRP)** will be developed if any additional land acquisition proves necessary. At present, only minor design adjustments are foreseen. Such adjustments are expected to remain within the corridor already designated for the road and are therefore not anticipated to result in additional displacement or land take.

There is **one particular land-related issue that will require special consideration**. There is a sawmill business which employs 16 workers, representing a significant source of employment in a rural area with otherwise limited economic activity. It operates on state-owned land, which had previously been expropriated for the Buk Bijela Hydropower Project. Although that expropriation process was legally concluded, the sawmill was never removed, and the owner has continued to use the land for commercial purposes for several years. Under the current design of the road, the alignment is expected to pass either through or in close proximity to this land, which may necessitate the removal of the sawmill facility. This case will require further review during the preparation of the RAP. Specific areas of analysis will include verification of legal and tenure status, clarification of the project's precise footprint and resulting

impacts, assessment of technically and economically viable relocation options and identification of appropriate compensation or livelihood restoration measures. The aim will be to enable continued operation of the business without incurring disproportionate economic loss to the owner or the employees.

### 5.13 Community Health and Safety

The area along the planned road alignment is sparsely populated, with most of the terrain consisting of steep, forested slopes prone to landslides and not suitable for permanent settlement. One populated segment, between kilometre points 5+500 and 6+800, includes several houses and one restaurant located in close proximity to the existing road. Two houses in particular are very close to the alignment. Beyond this segment, the remaining route passes through uninhabited mountainous terrain, with only three isolated homes identified over an 8-kilometre stretch.

During the construction phase, **temporary impacts may arise for households and businesses situated near the road, especially in terms of noise, vibrations and dust.** These disturbances may affect daily living conditions. The movement of heavy machinery and the presence of construction vehicles also introduce short-term safety risks for pedestrians, local drivers and livestock. In These impacts will be mitigated through dust and noise control measures and by implementing a comprehensive Traffic Management Plan. This includes maintaining alternative access routes, enforcing safe driving practices, using signage and barriers and deploying traffic marshals where needed.

One specific risk was identified in relation to **spoil disposal site 02**, shown in Figure 5 below, **which is located near a house** that may have been constructed after the original road design in 2017. This proximity was not anticipated during the earlier stages of Project planning. To prevent adverse effects, the site will need to be relocated in consultation with the Municipality of Foca during the final design phase.

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scale: 1:1000

**Legend:**

- Section A
- Spoil disposal site 02

Indicative location of spoil disposal site 02



**Figure 5: Indicative position of spoil disposal site 02**

Once the road is operational, noise impacts are expected to be minimal for the majority of receptors due to low population density, favourable dispersion conditions and modest traffic volumes. However, two homes located particularly close to the road have been identified as potentially sensitive, and targeted noise mitigation measures are proposed to ensure compliance with applicable standards.

A key operational risk concerns increased vehicle speeds, which could heighten the likelihood of collisions with pedestrians, animals or local drivers, particularly in the few areas where homes or small businesses are located close to the new road. This risk is especially relevant given that the poor condition of the current road surface naturally restricts speed. In response, the Project design incorporates a range of road safety measures, including improved alignment, visibility and signage, aimed at reducing accident risks and enhancing safe use of the road by all users.

Road operation is not expected to affect air quality in a meaningful way, given the limited traffic flows and distance from population centres.

In the long term, the upgraded road is expected to deliver significant health and safety benefits. Better surface quality, drainage and alignment will improve driving conditions and reduce the probability and severity of accidents in a region currently affected by poor infrastructure.

## 5.14 Occupational Health and Safety

The construction of the road will involve complex technical operations, including major earthworks, bridge building and slope stabilisation in difficult terrain. These activities present high occupational risks such as falls from heights, equipment-related injuries, exposure to noise, dust, vibration, electrocution and manual handling injuries. Additional concerns include slope instability, confined space hazards, scaffolding failures and crane accidents, particularly during bridge and retaining wall construction. Adverse weather, poor visibility and encounters with venomous wildlife may further increase risks.

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To mitigate these hazards, the design developer will ensure structural integrity and OHS integration through critical design calculations, preparation of an OHS Study and Fire Safety Plan and submission of the design package for independent third-party review. Contractors will implement a comprehensive OHS management system aligned with national legislation and international best practice. This includes detailed task-specific risk assessments, use of personal protective equipment (PPE), fall protection systems, confined space procedures and safety plans for excavation and lifting operations. Daily briefings, worker training, supervision and monitoring will be enforced. Activities will be suspended during hazardous weather and dedicated protocols will be applied for wildlife encounters. These measures aim to reduce the residual risk from high to low.

Although **operational risks** are lower than during construction, maintenance personnel will face hazards such as falls during bridge inspections, collisions near live traffic and exposure to chemicals or machinery. Mitigation will focus on maintenance protocols that include fall protection, traffic control during roadside works, training in chemical handling and safe operation of tools and equipment. These measures are designed to ensure a safe working environment throughout the operational life of the road.

### 5.15 Labour and Working Conditions

All road construction works will be carried out by a Contractor selected through a formal procurement process. The Contractor and any subcontractors must comply with the RS Labour Law. However, **risks of non-compliance** remain due to common sector practices such as subcontracting chains, seasonal labour and cost-cutting. Due to labour shortages in recent years, the engagement of foreign workers may be necessary. A **substantial influx of workers** is likely, given the Project's scale and community sensitivity is high due to the rural, low-density setting. However, the risk of Gender-Based Violence and Harassment (GBVH) is considered low, as most works will take place in uninhabited areas, with workers based in camps rather than dispersed through local communities. During construction, several measures will be implemented to ensure compliance with labour standards and to address associated risks. Contractors and subcontractors will be required to formally commit, during the tendering process, to full adherence to the RS Labour Law, EBRD PR2, WB ESS2 and the Project's Labour Management Procedure (LMP). A worker grievance mechanism must be established by all Contractors, and all workers must undergo induction training covering labour rights, grievance procedures, the code of conduct, and the identification and prevention of GBVH. For foreign workers, Contractors must ensure legal employment through valid work and residence permits. Employment contracts will be bilingual.

It is not yet confirmed whether separate **worker accommodation** will be needed. Where worker accommodation is required, all camps will follow the IFC and EBRD guidelines on workers' accommodation.

The construction phase also offers an **opportunity for local economic benefits** through the employment of unskilled and semi-skilled labour from nearby communities. To maximise local benefits, the Project will promote the employment of local workers for general labour roles wherever possible. Job opportunities will be advertised locally, and training or upskilling programs will be implemented to increase local employability.

### 5.16 Transboundary Impacts

The planned bridge over the River Tara will partially extend into Piva Nature Park in Montenegro, part of the broader Tara River Basin and a proposed UNESCO Biosphere Reserve. While other internationally protected sites may also be indirectly affected, no significant harm to their integrity is anticipated. Impacts on Piva Park are expected to be temporary and localised with mitigation measures in place.

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Construction works near the border may affect the River Tara, a shared water body, and lead to temporary noise, dust and vibration disturbances on both sides. There is also potential for increased congestion and emissions at the border crossing. While the Project improves cross-border connectivity and tourism between BiH and Montenegro, construction could disrupt travel and tourism flows, especially during peak months.

Standard E&S measures (dust, noise, vibration, water quality and traffic management) will address most transboundary impacts. A bilateral agreement ensures coordinated implementation between BiH and Montenegro. A construction permit from Piva Nature Park will be obtained if current zoning remains.

## 6 DISCLOSURE AND COMMUNICATION

A Stakeholder Engagement Plan (SEP) has been developed for this Project. It defines the approach to stakeholder engagement, public disclosure, consultations and grievance management. A summary of the key disclosure and engagement activities is provided below. Full details are presented in the SEP.

**Table 3: Summary of stakeholder engagement and disclosure requirements**

Activity	Timing/other details
<b>DISCLOSURE OF PROJECT DOCUMENTS:</b>	
The following documents will be published as part of the Disclosure Package:	
<ul style="list-style-type: none"> <li>■ Site-specific SEP with the Project Grievance Form</li> <li>■ Environmental and Social Management Plan</li> <li>■ Non-technical Summary</li> <li>■ Biodiversity Management Plan</li> <li>■ Updated Resettlement Policy Framework</li> <li>■ Updated Labour Management Plan (to be disclosed exclusively by the World Bank, in line with its disclosure requirements)</li> </ul>	
Documents will be available in the local language(s) of Bosnia and Herzegovina/Montenegrin and in English, both electronically and in print, at:	
<ul style="list-style-type: none"> <li>■ PRS: <a href="http://www.putevirs.com">www.putevirs.com</a>, address: Trg Republike Srpske 8, Banja Luka</li> <li>■ Municipality of Foca: <a href="http://www.opstinafoca.rs.ba">www.opstinafoca.rs.ba</a>, address: Kralja Petra I, Foca</li> </ul>	
Disclosure will be announced via locally accessible, well-frequented channels to ensure broad community awareness, including:	
<ul style="list-style-type: none"> <li>■ LCO Brod office</li> <li>■ Public notice board near Brod bus station</li> <li>■ Community gathering spots such as local restaurants</li> <li>■ Notice board at the Hum-Bastasi Mosque in the Project area</li> </ul>	
PRS will also share a link to the full Disclosure Package via email with interested NGOs (list provided in the SEP – the list will be updated by PRS as needed).	
<b>CONSULTATION MEETINGS:</b>	
PRS will hold two public consultation meetings:	
<ul style="list-style-type: none"> <li>■ One after the Main Design is developed – to present the Project scope and gather stakeholder feedback</li> <li>■ One before construction begins – to explain construction timelines, alternate routes, the grievance mechanism and other relevant details</li> </ul>	
Meetings will take place at the LCO Brod office or the “Skadarlija” restaurant to ensure easy community access.	

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Stakeholders will be notified at least 10 days in advance via:

- PRS and Municipality of Foca websites
- Radio Foca announcements
- Local newspapers and media
- Facebook page: <https://www.facebook.com/focavijesti/>

All feedback will be considered. All meetings will be documented. A summary report (“comments matrix”) with responses will be published on the PRS website.

For those unable or unwilling to attend public meetings, PRS will offer individual or small-group consultations on a case-by-case basis.

PRS will also share the meeting invitations via email with interested NGOs (list provided in the SEP – the list will be updated by PRS as needed).

**DISCLOSURE OF INFORMATION ON CONSTRUCTION ACTIVITIES:**

PRS and the contractors will proactively inform affected communities and stakeholders about construction activities, including:

- Start/end dates of major construction phases
- Working hours, including night/weekend works
- Traffic changes or detours, with duration and alternate routes
- Land access restrictions near work zones
- Planned noise/dust-intensive works, especially near sensitive areas
- Public safety measures during construction

Information will be shared via:

- Public notice boards at Local Community Office and municipal buildings
- Posters in frequently visited places
- PRS and municipal websites
- Local radio announcements

Special coordination will be maintained with rafting camps and tourism operators along the Drina and Tara Rivers:

- A contractor focal point will manage tourism-related communication
- Monthly work schedules will be shared with rafting camps via their Association
- Unexpected changes affecting tourist flows will be promptly communicated
- Where possible, works impacting river access or key weekends will be adjusted in consultation with operators

**GRIEVANCE MECHANISM AND CONTACT DETAILS:**

To ensure transparency and accountability, a formal Grievance Mechanism has been established as part of the Project’s SEP. This mechanism enables all stakeholders (including individuals, communities, organisations and other interested parties) to raise concerns, ask questions or submit complaints related to any aspect of the Project. Grievances or questions may relate to E&S impacts, land acquisition, construction-related disturbances, worker behaviour or any other issue of concern. All grievances will be treated seriously, addressed promptly and handled in a respectful and confidential manner. The grievance mechanism is accessible to all, free of charge, and will not result in any form of retaliation.

The PIU will acknowledge receipt of each submission, follow up as needed and provide a written response within a defined timeframe, as outlined in the SEP.

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Grievances and enquiries can be submitted using the following contact details:

**Foca-Hum road in Bosnia and Herzegovina**  
**Public Enterprise Roads of Republika Srpska – Project Implementation Unit**  
**Communication Specialist**  
**Tel: + 387 51 330 330**  
**Fax: + 387 51 334 545**  
**E-mail: [ifi.projekti@putevirs.com](mailto:ifi.projekti@putevirs.com)**  
**Address: Trg Republike Srpske 8, Banja Luka**