REPUBLIC OF SERBIA
Ministry of Construction, Transport and Infrastructure

Serbia Railway Sector Modernization Project

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN (ESMP) CHECKLIST

SER-SRSM-RFB-PLANT-24-71

Reconstruction of railway level crossings

September 2024

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ABBREVIATIONS

Abbreviation	Full term
CHMP	Cultural Heritage Management Plan
RLC	Railway Level Crossing
E&S	Environmental and Social
EHSG	World Bank Group Environmental, Health and Safety Guidelines
EPR	Emergency preparedness and response plan
ESF	Environmental and Social Framework
ESMF	Environmental and Social Management Framework
ESMP	Environmental and Social Management Plan
ESS	Environmental and Social Standards
GIIP	Good international Industry Practices
GRM	Grievance Redress Mechanism
OG	Official Gazette
OHS	Occupational Health and Safety
PPE	Personal Protective Equipment
RLC	Rail Level Crossing
SEA	Sexual Exploitation and Abuse
SH	Sexual Harassment
WB	World Bank
IŽS	Serbia Railway Infrastructure (Infrastruktura Železnice Srbije)
RoS	Republic of Serbia
SRSM	Serbia Railway Sector Modernization Project
PIU	Project Implementation Unit
WB	World Bank

1 INTRODUCTION

Railway signaling is a vital component of railway infrastructure and operations. Its functionality is crucial for the safety of staff and passengers as well as of other participants in the traffic – drivers of motor vehicles, cyclists and pedestrians. It is of utmost importance that the rail traffic, signaling and infrastructure is organized in the way that ensures safety of all traffic participants.

There is a total of 2,121 level crossings managed by IZS and all of them are secured with some type of signaling, however, the locations financed as part of this sub-project currently are not equipped with any safety devices or are equipped with outdated and obsolete mechanical devices (e.g. gates), also none have pedestrian crossing. How a particular level crossing will be secured is regulated by several factors, mainly the road category, traffic loads and visibility. The Component financed by WB has been split into two groups of RLCs (Railway Level Crossings), in accordance with their individual scope of work, and which will be contracted independently of each other. For one group of RLCs, a replacement of existing devices with semaphores is planned. This group is not the subject of this ESMP. For the other group of RLCs, which is the subject of this ESMP, full reconstruction is planned, including reconstruction of the road on the road crossing area, replacement of the rail grid in the zone of the road crossing etc.

This ESMP Checklist covers reconstruction of RLCs.

The Scope of works includes 11 RLCs, whose locations are spread widely apart on the RoS railway network. The scope of work includes installation of modern safety systems, repair of the railway track in the RLC area and installation of rubber panel structure over the railway, with new pedestrian access over the railway and lighting installations, installation of traffic signalization and adequate vertical signalization, and installation of video surveillance system.

SUB-PROJECT DESCRIPTION AND LOCATION

1.1 General information

General information is listed in the table below. More information about each location is in section 1.2 Description of locations.

Table 1: General information

Name of the sub-project	Reconstruction of Railway Level Crossings
Purpose	The main purpose of the activity is upgrading security and safety of the railway network.
Beneficiary	Ministry of construction, transport and infrastructure of the Republic of Serbia
Location	Multiple (11 Locations)

No	Location	Plot
1	Western outskirts of Vršac *Northeastern Serbia*	Cadastral Municipality Vršac plot 27453/2 and 9709/6 (both public)
2	Vitanovac, East of Kraljevo *Central Serbia*	Cadastral Municipality Vitanovac, plot 4189 (public)
3	Kraljevo, near the railway station *Central Serbia*	Cadastral Municipality Kraljevo, Plot 4242/1 (public)
4	Tavankut, southwest of Subotica *Northern Serbia*	Cadastral Municipality Tavankut Plot 10646 (public)

	5	Kovačica, north of Pančevo *Northern Serbia*	Cadastral Municipality Kovačica Plot 3499 (public)
	6	Kikinda *Northeastern Serbia*	Cadastral Municipality Kikinda Plot 21476/1 (public)
	7	Northeast of Kruševac *Central Serbia*	Cadastral Municipality Dedine, plot 2818/1 (public)
	8	East of Kraljevo *Central Serbia*	Cadastral Municipality Ratina, plot 2025 (public)
	9	Southeast of Smederevo *Central Serbia*	Cadastral Municipality Vranovo, Plot 1920 (public)
	10	Knjaževac *Southeastern Serbia*	Cadastral Municipality Knjaževac, Plot 1 (public)
	11	Southeast of Negotin *Eastern Serbia*	Cadastral Municipality Kobišnica, Plot 3625 (public)

Landowners	The affected land plots are all located within the railway infrastructure zone; they are owned by the Republic of Serbia and used by Serbian Railways Infrastructure. By the law on railway of the RoS, the "infrastructure area" is defined as 25 meters around the railway. This area is reserved for the needs of railway operations the user is IŽS.
Are there any associated facilities[1] related to the sub-project?	No
Is the sub-project aligned with spatial planning documents?	N/A
Documentation	Yes. The scope of reconstruction 11 RLCs includes design, supply, and installation RLCs.
Is the sub-project protected cultural heritage?	No
Is the sub-project located within the archaeological/cultural protection zones?	No
Is the sub-project located within the nature protection areas or special nature management sites?	No

1.2 Description of the locations

The activity takes place on eleven locations:

1. RLC no. 70489, Stražara 419, Vršac

Figure 1: Map of the railway level crossing in Vršac

Table 2: Description of RLC no. 70489, Stražara 419, Vršac

Surrounding overview	**The RLC is in northeastern Serbia, on the western side of Vršac. The design for reconstruction and modernization of this railway line is within the activity 122A of the SRSM project.** **The RLC is at the western edge of the town, about 1 km north of the train station. On the northeastern side there is a cemetery, whose entrance is on the other side, away from the RLC. On the two plots near the RLC there are three railway objects. 60 meters southeast there is transport company, and a food production company connected to the railway by an industrial railway track.** **Apart from the RLC that will be reconstructed, there is another RLC about 800 meters north**				
Railway:	**107 Beograd Centar - Pančevo Glavna - Vršac - državna granica - (Stamora Moravita);** Category: D2; Max. speed: 80 km/h; Not Electrified			# of tracks 2 of 2	
Location	**Km 83+813; PP: Municipality Vršac; cadastral parcel 27453/2, 9709/6 . The plots 27453/2 and 9709/6 of the cadastral municipality of Vršac belong to the Republic of Serbia, with the user being the three railway companies (IŽS, Srbijavoz and Srbija Cargo). RLC crosses the state road IB No 10. The entrance to the cemetery is from state road 10, about 150 from RLC.**		**Road: State road level IB 10 Pančevo Vršac Državna granica sa Rumunijom (Vatin)**		
Works:	Civil works	Signaling and safety	Lighting installations	Video Surveillance	Other info
Required:	Yes	Yes	Yes	Yes	-
Additional Note:	• B = cca 2x9.0m • Add pedestrian crossing	-	-	-	• Heavy road traffic

2. RLC no. 70568, Vitanovac blok 2, Kraljevo

Figure 2: Map of the railway level crossing in Vitanovac near Kraljevo

Table 3: Description of RLC no. 70568, Vitanovac blok 2, Kraljevo

Surrounding overview	**The RLC is located in the Cadastral municipality of Vitanovac, in central Serbia, east of Kraljevo.. Vitanovac railway station is just northeast of the RLC. There are two private houses near the RLC, of which the closest one is about 20 meters from the RLC. About 50 meters south of the RLC there is a "FK Gruža" football field, on public land. The most inhabited part of Vitanovac is on the western side of the tracks, but on the eastern side there is a small neighborhood of about 15 households. There is another RLC about 200 meters south of the RLC that will be reconstructed, which might be important for keeping the neighborhood connected to the rest of Vitanovac in case the RLC has to be closed for road and pedestrian traffic.**				
Railway:	**109 Lapovo-Kraljevo-Lešak-Kosovo Polje-Đeneral Janković-Državna granica-(Volkovo);** Category: C3; Max. speed: 40 km/h; Not Electrified			# of tracks 1 of 1	
Location	**Km 74+202; Municipality Kraljevo, cadastral Municipality Vitanovac. The plot 4189 of the cadastral municipality of Vitanovac belongs to the Republic of Serbia, with the user being Serbian Railway Infrastructure. RLC crosses the road 187, after which this road enters to state road No 24, Kragujevac.**		**Road: State road II A 187, Vitanovac Ugljarevo Velika Drenova Mijatovac, under the jurisdiction of the JP Putevi Srbije**		
Works:	Civil works	Signaling and safety	Lighting installations	Video Surveillance	Other info
Required:	Yes	Yes	Yes	Yes	-
Additional Note:	• B = cca 9.0m • Add pedestrian crossing(s)	-	-	-	• Heavy road traffic

3. RLC no. 70577 Ložionica, Kraljevo

Figure 3: RLC Ložionica near the railway station Kraljevo

Figure 4: Google street view of the RLC in Kraljevo: The railway station is on the left, and the cemetery is on the right

Table 4: Description of RLC no. 70577 Ložionica, Kraljevo

Surrounding overview	**The RLC is located in the central Serbia, on the way out of the station Kraljevo, in the direction to Čačak. Most of the objects, on both side of the railway, before the RLC belong to IŽS.. On the right side of the railway, after the RLC there is a residential settlement with a network of several uncategorized roads which connect to the local road (mentioned above). Near the site, on the left side of the RLC, there is a cemetery The entrance to the cemetery is from the local road, about 50 m from the RLC.**

	The nearest way to the other side of the town is about 250 meters north of the RLC, and there is also a pedestrian overpass about 450 meters south, near the railway station				
Railway:	**109 Lapovo-Kraljevo-Lešak-Kosovo Polje-Đeneral Janković-Državna granica-(Volkovo);** Category: C3; Max. speed: 60 km/h; Electrified			# of tracks 2 of 2	
Location	**Km 85+316; PP Ložionica, Municipality and Cadastral Municipality Kraljevo; cadastral parcel 4242/1. This parcel covers an area of almost 33 ha, and the owner is the RS. The road is local under the jurisdiction of the directorate for planning and construction Kraljevo.**		**Road: Local, under the jurisdiction of the directorate for planning and construction Kraljevo**		
Works:	Civil works	Signaling and safety	Lighting installations	Video Surveillance	Other info
Required:	Yes	Yes	Yes	Yes	-
Additional Note:	• B = cca 2x11.0m • Add pedestrian crossing(s)	-	-	-	• Medium road traffic

4. RLC no. 70662, Tavankut, Subotica

Figure 5: Map of the RLC Tavankut, near Subotica

Table 5: Description of RLC no. 70662, Tavankut, Subotica

Surrounding overview	**out 200 meters west of the Tavankut, a village located about 15 kilometers southwest of Subotica ia). The surrounding area comprises mostly agricultural land. On the left side of the railway there which belong to IŽS, and on the right side, outside of the 25m wide infrastructure zone, is a lement with a road that connects to a local road. The buildings closest to the RLC belong to Serbian structure, and the nearest private house is about 40 meters south of the RLC.**				
Railway:	**110 Subotica-Bogojevo-Državna granica-(Erdut);** Category: D3; Max. speed: 60 km/h; Not Electrified			# of tracks	
				1 of 1	
Location	**Km 115+163; PP Tavankut; City Subotica, cadastral parcel Tavankut c.p, 10646 owner RS, user IŽS. RLC crosses the local road.**		**Road: Local, under the jurisdiction of the Directorate for construction Subotica**		
Works:	Civil works	Signaling and safety	Lighting installations	Video Surveillance	Other info
Required:	Yes	Yes	Yes	Yes	-
Additional Note:	• B = cca 6.0m • Add pedestrian crossing	-	-	-	• Medium road traffic

5. RLC no. 70750 Kovačica Blok 2 Kovačica

Figure 6: Top: Map of the RLC location

Table 6: Description of RLC no. 70750 Kovačica Blok 2 Kovačica

Surrounding overview	The RLC is on the northeastern side of the town of Kovačica, on the road connecting Kovačica with the town of Idvor. Kovačica is only 6 kilometers north of Debeljača, Kovačica has a declining population of 6,259 (2011 census), mostly of Slovakian ethnicity (82%). The rest are Serbs (9%), Hungarians, Roma and many others. As the rest of the region, the town is in the plains well suited for farming. Many inhabitants (mostly women) commute to work. The RLC is located on the edge of town, not far from "Green Life Agro Export", a factory for agricultural production and transportation. The road is not very busy, so no major road traffic disturbances are expected. The settlement Kovačica is located on the right side of the railway, surrounding area on the left side is mostly agriculture land. Close to the station area there is private company for purchase and sale of grain, Green Life Agro Export. By an internal street they have direct contact to the state road and the municipal street	
Railway:		# of tracks

	202 Pančevo Glavna - Zrenjanin - Kikinda - državna granica - (Jimbolia) Category: C3; Max. speed: 60 km/h; Not Electrified	1 of 1
Location	**Km 46+442; PP Kovačica Blok 2; Municipality Kovačica c.p 3499 owner RS, user IŽS. RLC crosses the state road IIA.**	**Road: State road IIA No 129 Kać - Šajkaš - Titel - Perlez - Kovačica - Sečanj - državna granica sa Rumunijom (granični prelaz Jaša Tomić).jurisdiction of the JP Putevi Srbije ad**

Works:	Civil works	Signaling and safety	Lighting installations	Video Surveillance	Other info
Required:	Yes	Yes	Yes	Yes	-
Additional Note:	• B = cca 10.0m • Add pedestrian crossing	-	-	-	• Heavy road traffic

view of the town of Kovačica from the RLC.

current state of the RLC

6. RLC no. 70810: Stražara 56 Kikinda

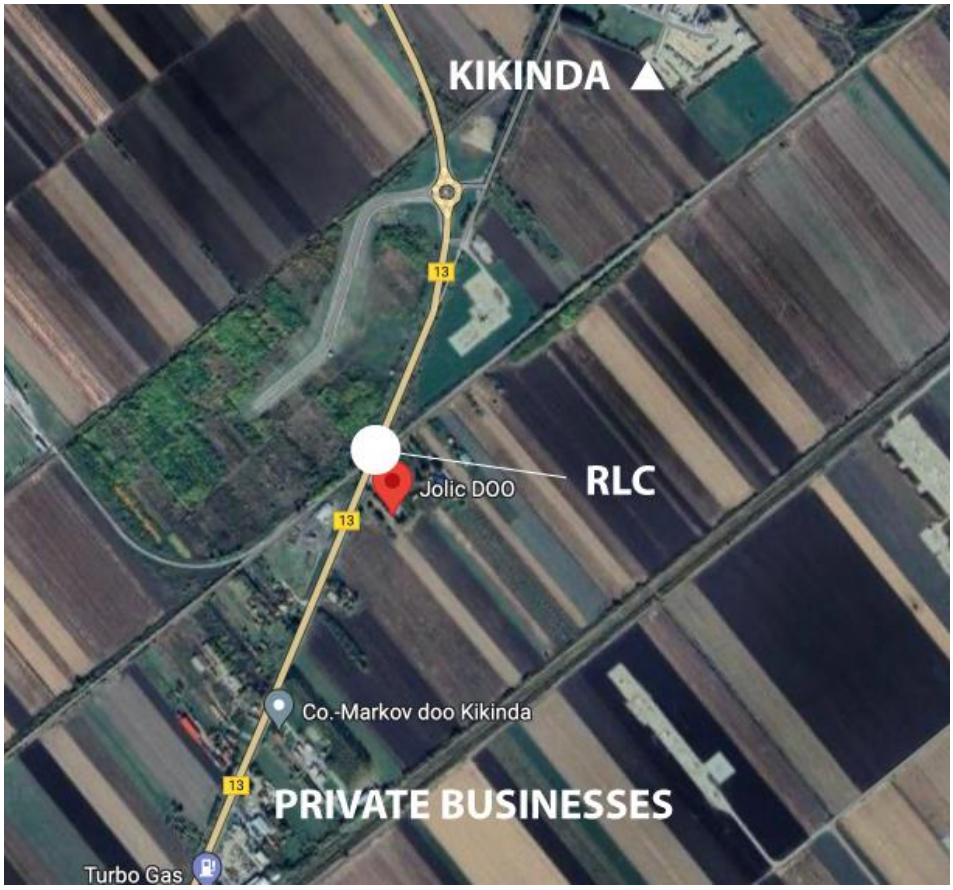


Figure 7: Map of the railway level crossing in Kikinda

Table 7: Description of RLC no. 70810: Stražara 56 Kikinda

Surrounding overview	**The RLC is located in the cadastral municipality of Kikinda and is located 1,5 kilometers south of the town of Kikinda, on the road that connects Kikinda to the small village of Bašaid, and further down, the town of Zrenjanin. The surrounding area is mostly agriculture land. However, at a distance of more than 25 m there is one residential structure, and one small company. Also, parallel with the railway there is an uncategorized dirt road, which connects to the state road. Distance from the RLC is about 30m.** **Next to the RLC there is a building material store, and 200 meters further south there is a transport company, car dealership, and a gas station.**				
Railway	**202 Pančevo Glavna - Zrenjanin - Kikinda - državna granica - (Jimbolia)** Category: C3; Max. speed: 60 km/h; Not Electrified			# of tracks 2 of 2	
Location	**km 153+239 PP Stražara 56, Municipality Kikinda, cadastral parcel 21476/1. RLC crosses the state road IB No 13, Horgoš - Kanjiža - Novi Kneževac - Čoka - Kikinda - Zrenjanin - Čenta – Beograd.**		**Road: State, IB 13 Horgoš - Kanjiža - Novi Kneževac - Čoka - Kikinda - Zrenjanin - Čenta – Beograd, jurisdiction of JP Putevi Srbije**		
Works:	Civil works	SS	Lighting	Civil works	Other info
Required:	Yes	Yes	Yes	Yes	-
Additional Note:	• No road surface and track works • Cca B= 2x19.0m • Add pedestrian crossing	-	-	-	• Heavy road traffic

7. RLC no. 71059 Goodyear Dedina Kruševac

Figure 8: Map of the railway level crossing in Kruševac - Dedina

Table 8: Description of RLC no. 71059 Goodyear Dedina Kruševac

Surrounding overview	**The RLC is located northeast of the town of Kruševac. In the municipality of Dedina. The surrounding area is mostly agricultural, except on the right side of the railway where a private company (chemical industry), Goodyear, Serbia. The RLC is next to the Goodyear factory, which has other access roads.**				
Railway:	**213 Stalać-Kraljevo-Požega;** Category: C3; Max. speed: 50 km/h; Not Electrified			# of tracks 1 of 1	
Location	**Km 11+034; Municipality Kruševac, cadastral municipality Dedine cadastral parcel 2818/1. RLC crosses the uncategorized road which connects the company area with the state road IB No 38, Kruševac (Makrešane) - Blace-Beloljin.**		**Road, industrial: jurisdiction of Cooper tire & Rubber company Serbia**		
Works:	Civil works	Signaling and safety	Lighting installations	Video Surveillance	Other info
Required:	Yes	Yes	Yes	Yes	-
Additional Note:	• B = cca 7.2m + Pedestrian crossing(s)	-	-	-	• Medium road traffic

8. RLC no. 71107: APP Ratina Kraljevo

Figure 9: Map of the railway level crossing in Ratina, Kraljevo

Table 9: Description of RLC no. 71107: APP Ratina, Kraljevo

Surrounding overview	**The RLC about 3 kilometers east of Kraljevo. The plot is public land belongs to the Republic of Serbia, and the user is Serbian Railway Infrastructure. The surrounding area on the right side of the railway is mostly agriculture, while on the opposite side there are a few houses, with a distance of more than 50m from RLC. Around the RLC there are a couple of businesses. 150 meters southwest of the RLC there is an animal feed factory. 200 meters south there is a small car dealership, and 100 meters north there is a motorbike repair shop. There is also a home goods store and a hair salon in two small private houses about 100 meters south of the RLC. The nearest alternative crossing is 80 meters southeast of the RLC within the SRSM project. The surrounding area on the right side of the railway is mostly agriculture, while on the opposite side there are a few houses, with more than 50m from RLC.**				
Railway:	**213 Stalać-Kraljevo-Požega;** Category: B2; Max. speed: 40 km/h; Not Electrified			# of tracks 1 of 1	
Location	**Km 66+631, Municipality Kraljevo, Cadastral Municipality Ratina, cadastral parcel 2025, which belongs to the RS. The RLC crosses the local road, under the jurisdiction of the directorate for planning and construction Kraljevo.**		**Road: Local , under the jurisdiction of the directorate for planning and construction Kraljevo**		
Works:	Civil works	Signaling and safety	Lighting installations	Video Surveillance	Other info
Required:	Yes	Yes	Yes	Yes	-
Additional Note:	• B = cca 10.0m	-	-	-	• Medium road traffic

	• Add pedestrian crossing				

9. RLC no. 71147: RLC Vranovo Smederevo

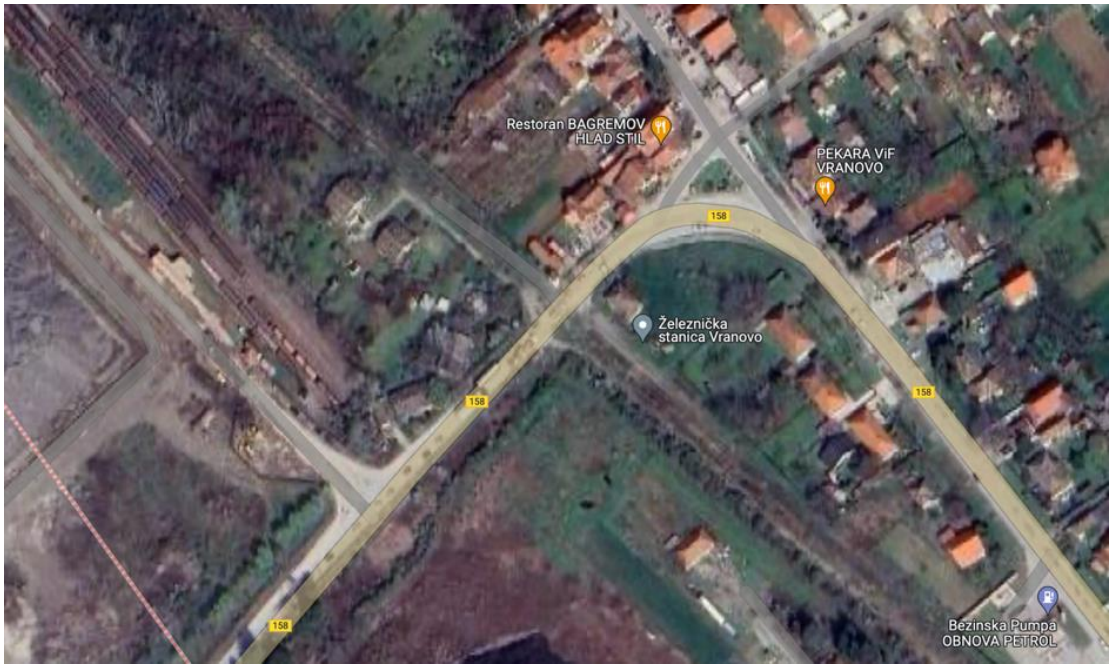


Figure 10: Map of the railway level crossing in Vranov, Smederevo

Table 10: Description of RLC no. 71147: RLC Vranovo, Smederevo

Surrounding overview	**The RLC is in the cadastral municipality of Vranovo, about 6 kilometers south of Smederevo. Southeast of the RLC there is the Vranovo train station, and the Smederevo steel plant (northwest) with other access roads and its own connection to the railway. The nearest alternative crossing is 380 meters south. On the right side of the railway, on agricultural land there is a house, less then 10m from railway. A major part of the settlement is closer to the local road, far away from the railway.**				
Railway	**216 Smederevo - Rasputnica Jezava - Radinac - Mala Krsna;** Category: C3; Max. speed: 30 km/h; Electrified			# of tracks 1 of 1	
Location	**km 9+455; Location Municipality Smederevo, cadastral municipality Vranovo, cadastral parcel 1920, owner RS, user IŽS. RLC crosses the local road, under the jurisdiction of the directorate for construction Smederevo.**		**Road: Local, under the jurisdiction of the directorate for construction Smederevo**		
Works:	Civil works	SS	Lighting	Video Surveillance	Other info
Required:	Yes	Yes	Yes	Yes	-
Additional Note:	• B = cca 8.0m • Add pedestrian crossing(s)	-	-	-	• Heavy road traffic

10. RLC no. 71311, PAPP Knjaževac

Figure 11: Map of the railway level crossing, PAPP Knjaževac

Table 11: Description of RLC no. 71311, PAPP Knjaževac

	The RLC is the northeastern part of the Kruševac town. The RLC is located near the entrance to Knjaževac station and it the state road (Ive Lole Ribara.) Both the road and the railway line go through urban area of Knjaževac, On both sides of the railway, before and after the RLC there are industrial companies for food and textile production. There is a water tower and a paintball center nearby the nearest alternative way to cross the railway is 200 meters southwest of the RLC.				
Railway:	**219 (Niš)-Crveni Krst-Zaječar-Prahovo Pristanište;** Category: B2; Max. speed: 65 km/h; Not Electrified			# of tracks 1 of 1	
Location	**Km 68+023; Municipality Knjaževac, cadastral municipality Knjaževac Cadastral parcel 1; All the plots around the RLC are public and belong to the Republic of Serbia.**		**Road: State, IIA 219 Boljevac-Bučje-Knjaževac , jurisdiction JP Putevi Srbije**		
Works:	Civil works	SS	Lighting	Video Surveillance	Other info
Required:	Yes	Yes	Yes	Yes	-
Additional Note:	• B = cca 13.0m • Add pedestrian crossing(s)	-	-	-	• Heavy road traffic

11. RLC no. 71392: Kobišnica Negotin

Figure 12: Map of the railway level crossing in Kobišnica, Negotin

Table 12: Description of RLC no. 71392: Kobišnica, Negotin

Surrounding overview	**The RLC is located about 5 kilometers southeast of Negotin in Eastern Serbia. The RLC is at the south entrance of the settlement Kobišnica, about 450 meters south of the first houses, and is surrounded by agricultural land. The state road on which the RLC is located leads further south towards the border with Bulgaria. Wider area of the RLC is an agricultural area, without residential or industrial structures.**				
Railway:	**219 (Niš)-Crveni Krst-Zaječar-Prahovo Pristanište;** Category: C3; Max. speed: 40 km/h; Not Electrified			# of tracks 1 of 1	
Location	**Km 167+159; Municipality Negotin, Cadastral Municipality Kobišnica, cadastral parcel 3625. RLC crosses the state road category IB No 33, which is under the jurisdiction of JP Putevi Srbije.**		**Road: State , IB No 33, connection to state road A1 under the jurisdiction JP Putevi Srbije**		
Works:	Civil works	SS	Lighting	Video Surveillance	Other info
Required:	Yes	Yes	Yes	Yes	-
Additional Note:	• B = cca 9.0m	-	-	-	• Heavy road traffic

1.3 Technical description

The scope includes 11 RLCs, which in current condition are either not equipped with any safety devices or are equipped with outdated and obsolete mechanical devices. The 11 RLC locations are spread widely apart on the RoS railway network. The scope of the contract includes installation of modern safety systems, repair of the railway tracks in the RLC area and installation of rubber panel systems over the railway, with new pedestrian access over the railway and lighting installations, installation of traffic signalization and adequate vertical signalization, and installation of video surveillance system. There will be no substantial earthworks, no removal of stone aggregate or wooden sleepers.

No additional land is needed as all works will be performed on public land within the railway infrastructure zone. The contractor has the right to, if needed, build temporary structures for worker accommodation and toilets, and temporary access roads, which will be detailed within the design.

The reconstruction of 11 railway level crossings shall include the design services, reconstruction work, supply and installation of equipment, testing and commissioning, including services related to Trainings and preparation of Operational and Maintenance Manuals (documentation).

The total number of RLCs in scope is 11, which have been chosen based on their current condition and critical importance on the network. The scope of work shall include:

- Site investigation and surveys works;
- Dismantling of existing equipment;
- Installation of rubber panel system in the level crossing (panels, edge beams, edge beam foundations. Reconstruction or reparation of road superstructure in RLC);
- Reconstruction of drainage system in level crossing area;
- Reconstruction/construction pedestrian crossing on side(s) of RLC and installation of labyrinth gates for pedestrian crossing (ensure it is not too narrow, and is bicycle friendly);
- Installation of automatic, semi-automatic or button-activated systems, boom barriers railway signals, light and sound signals, bumpers (half-bumpers, with accompanying devices, equipment and housing on a case-to-case RLC basis, traffic lights (semaphores), etc;
- Installation of power supply and other cable infrastructure for lighting sources;
- Video surveillance works on installation of video surveillance and monitoring equipment for road and railway traffic.

Figure 12: Existing RLC before reconstruction

Figure 12: Example of a RLC after reconstruction

2 POTENTIAL ENVIRONMENTAL AND SOCIAL IMPACTS

Minor to moderate environmental and social risks and impacts are expected during the construction and operation phase. Although there are no direct potential environmental and social adverse impacts during design phase, if design documentation is not prepared in accordance with the environmental protection standards, implementation of the project may cause degradation of certain components of the environment, as well as human health and safety. Main and Detail Design will be in line with WB Environmental and Social Standards and national legislative requirements, WB Environmental, Health and Safety Guidelines (EHSG) and Good international Industry Practices (GIIP)to make sure no unpredicted negative impacts occur.

2.1 Potential impacts during design phase

No negative impacts are expected in the design phase.

2.2 Key potential impacts during construction

The main risks during the construction phase are related to occupational and community health and safety, and traffic management. The contractor must have a Health, Security and Safety Management Plan, approved by the Supervising engineer/appointed person within the PIU. This Plan will reflect the requirements of the Rulebook for Traffic N° 227 and N° 227a, Manual for the application of safety measures against electric current on the contact network of the single-phase system 25kV 50Hz of Yugoslav railways, and requirements of this ESMP Checklist. It is mandatory for Contractor to prepare a Traffic management plan, which must be approved by competent authority, and in timely manner published in the media. Most often, the Contractor, in cooperation with Supervising Engineer and competent road manager, inform stakeholders through local radio stations.

Some impacts related to road and pedestrian traffic are expected. Generally, the trains will operate as usual during construction, with possible minimal impacts. In case both road lanes need to be closed at the same time, an alternative crossing for vehicles and pedestrians must be provided, especially in places like Vitanovac where multiple houses may be separated from the rest of the town. All of this will be described in Traffic management plan.

Since the works will take place in existing infrastructure area, reduces and limits the possible spreading of negative effects, on short-length sections. There will be no major environmental impacts. All of them are temporary and they are related to:

- The traffic of motor vehicles and construction equipment as well as construction work will generate noise which can affect workers, and the people and animals living or moving in the vicinity of the working points. This noise is temporary and will cease upon the completion of the works;
- impact on the soil and the surface during reconstruction caused by excavations, waste generation and accidental spillage from the construction equipment;
- temporary disposal of material (both the new and old ones) on surrounding area, chemical toilets, containers for accommodation of workers;
- Atmospheric pollution is possible due to dust which is potentially contaminated with other polluting substances from earthworks, loading and unloading of raw materials, etc., emission of polluting substances from transport and construction motor equipment; including emissions from diesel engines, NOx, volatile organic compounds, carbon monoxide and various other hazardous pollutants, including benzene;
- There is no surface water close to the locations thus impact to surface waters is not expected;

- The traffic of motor vehicles and construction equipment as well as construction work will generate noise which can affect workers, and the people and animals living or moving in the vicinity of the working points;
- Potential partial devastation of the existing agriculture vegetation in areas close to the RLCs;
- with where preparatory works on land will be carried out, the construction of temporary facilities for the workers, the dismantling of existing tracks and related infrastructure, the digging up of soil, the hauling of equipment to and from the site as well as establishing temporary storage areas for the proper storage of the material needed for the rehabilitation and construction, or the temporary disposal of generated waste until it can be disposed properly;
- since the fauna near the railway line has already been exposed top railways in the operation phase, a negative impact from works will be of low intensity and little significance;
- Waste management includes waste generation, separate collection of different types of special waste, waste collection, transportation, handling and final disposal in landfills/processing plants. Proper waste management compliant with national and EU standards, and Guidelines for waste management in Serbian Railways, stricter ones prevailing;
- -Expected waste product are: Ballast contaminated with oil or mixed with other fine-grained material; Wood sleepers; Tracks; other demolition material from existing RLCs;
- The impact on owners of land along the route is not expected, so there will be no appropriation and relocation of people;
- The inhabitants will be informed about the start and the duration of the works on the reconstruction of RLCs.

The changes in the train schedule are not expected. To avoid any potential accidents, the Railway Rulebook for Traffic N° 227 and N° 227a Manual for the application of safety measures against electric current on the contact network of the single-phase system 25kV 50Hz of Yugoslav railways, must be strictly respected. The communication between the stations are explained in detail on these rulebooks.

The organizational unit that requests the closure of the railway during the validity of the timetable, submits a request to the manager of the railway infrastructure no later than ten days before the start of the closure.

The manager of the railway infrastructure informs key participants in writing about a specific closure, no later than five days before the beginning of the closure; the following personnel/units are informed:

1) stations between which the railway closure is requested for;
2) competent operational service;
3) neighboring dispatching stations, as well as starting and branching stations on that dispatching section;
4) the organizational unit that requested the closure of the railway;
5) other interested/relevant departments of railway infrastructure managers and railway carriers.

The units that have received a written notification of a certain track closure shall immediately confirm in writing the receipt of the notification to the manager of the railway infrastructure and the organizational unit that requested the track closure;

On the day of the planned closing of the tracks, approval for the immediate start of the closing is given by neighboring stations, and on tracks by the TK-dispatcher (communication and track monitoring dispatcher), with the prior consent of the competent operational service.

The manager of works on the railway records in the traffic log of one of the neighboring stations the time of the start and end of the railway closure. This entry is immediately communicated by the station as evidence to the neighboring station.

On the station switchboard, i.e. on the telephone and the signal and switchboard device of the train conductors and switchmen during the closure of the railway, a sign with the inscription: "TRACK IS OCCUPIED" stands/is displayed. The switch operator is informed about the beginning and end of the railway closure, as well as whether the work site is protected or not.

Consent for the immediate start of track arrest in the station is given verbally by the train dispatcher (and will be also logged in for the purposes of this Project), and on the TK (telecommunication and monitoring)-line by an authorized station worker with the consent of the (telecommunication)TK-dispatcher, and the works manager writes the start and end of the works, as well as the condition and capacity of the tracks and traffic facilities in the traffic log, about which on TK-tracks the authorized station worker informs the TK-dispatcher (telecommunication and monitoring).

After the closure of the railway or tracks, the works manager and all supervisory authorities enter the conditions for the continuation of traffic in the traffic log, and if there is a change compared to the condition before the closure of the railway or tracks (light driving, reduced speed due to a change in the level of insurance, etc.).
.In addition to sound sirens, in according to the Procedures, there will be continuous communication between the train driver, workers, station chefs, etc. The workers will be informed of the upcoming train as well as having the train schedule.

A communication/alertness plan between the Contractor, near stations, switchboard operator and other relevant parties, will be prepared and approved by the PIU before works commence. The plan will ensure that communication and signaling alert and danger to workers on the tracks will be possible at any moment.

The construction site must be organized and operated in safe manner, and secured in line with national legislation (The contractor must put visible signs and barriers to ensure safety of community as well as safety of workers). There will be no night works and the local residents will be timely informed of works.

Most RLCs are currently equipped with mechanical devices, which after dismantling are delivered to IZS for use as spare parts. Spare parts will be stored properly by IZS. Minimal surface concreting is expected (2sqm/RLC). Asphalt reconstruction is expected in amounts of 18-20sqm/RLC.

Small amount of excavated mixed earth material, crushed stone, and asphalt will be hauled to the landfill. (cca 20-30 cubic meters). Virgin earth material will be reused or deposited to the site selected and approved by the local authorities.

Management of all materials generated during works will be carried out in accordance with Rulebook on the method of recording, storage, movement and sale of inactive stocks and materials acquired in the work process, (Official gazette of IZS 16/16). There will be no sale of materials, unless they are recyclables and guaranteed safe. There will be no removal of wooden sleepers and stone aggregate.

For any community grievances, the grievance mechanism must be in place on the construction site, visible and accessible.

To be able to accept and address any community grievances, the grievance mechanism must be in place on the construction site, visible and accessible on all locations.

2.3 Key potential impacts during operational phase

Risks and impacts in the operations phase are negligible except in the dismantling phase. A plan for maintenance and dismantling must be prepared before the operations phase.

Impact of the sub-project activities on the use phase are predominantly positive: Stopping a car in front of a road crossing, cause emissions of various pollutants, which are an important factor which contributes to increased CO2 concentration in the atmosphere and hence to global warming.

After the works have been completed, due to the construction of new superstructure, the noise emission caused by the rolling of wheels on the rails will be generally reduced in comparison to the existing condition.

The detention of motor vehicles in the area RLCs will be shorter, so less noise and emissions are expected In close area of the RLCs, the maintenance of the railway line will be carried out by mowing, trimming, cutting and physically removing the vegetation from the railway line.

3 ESMP CHECKLIST

Following the requirements which arise from ESF, the Environmental & Social Screening Questionnaire has been prepared in order to screen for the potential environmental and social risks and impacts of this activity, as well as to establish an appropriate E&S risk rating and specify the type of environmental and social assessment required, including specific instruments/plans. ESMP Checklist is prepared as a deemed adequate E&S instrument for the activities financed under this sub-project. ESMP Checklist prescribes and organizes mitigation and monitoring measures based on requirements and recommendations of EMSF, WB EHSG, national regulation, and GIIP (EU directives and guidelines), stricter ones prevailing.

Purpose and Concept of the ESMP Checklist

The ESMP Checklist provides "pragmatic good practice" and it is designed to be user friendly and compatible with WB safeguard requirements. The checklist-type format attempts to cover typical mitigation approaches to common works with localized impacts.

This document will help assess potential environmental and social impacts associated with the proposed sub-project, identify potential environmental and social improvement opportunities and recommend measures for the prevention, minimization and mitigation of adverse environmental and social impacts.

3.1 Application of the ESMP Checklist

ESMP Checklist is a document prepared by the Project Implementation Unit (PIU) of the Ministry of Construction, transport and infrastructure, while the final beneficiary is IŽS. The ESMP checklist has one (1) introduction section and three (3) main parts

Introduction or foreword part consists of the following sections:

- introduction, in which the characteristics of the proposed activity are described, the environmental and social category, as well as the potential environmental and social impacts are defined, and the concept and application of the ESMP checklist are explained;
- monitoring and reporting (brief description of the monitoring and reporting distribution of responsibilities and process including responsibilities of involved stakeholders).

The three main parts included are:

- part 1 - constitutes a descriptive part ("site-passport") that describes the sub-project details in terms of physical location, the institutional and legislative aspects, the sub-project description, inclusive of the need for a capacity building program and description of the public consultation process, if applicable;
- part 2 - includes the environmental and social screening in a simple Yes/No format followed by mitigation measures for any given activity;
- part 3 - is a monitoring plan for activities during sub-project implementation (it retains the same format required for standard World Bank ESMPs).

4 MONITORING AND REPORTING

In the table part of (Part 2 and Part 3) clear mitigation and monitoring measures are explained in detail and will be included in the works contract.

Design mitigation measures include reduction measures, fire safety measures, waste management measures and climate change, and other relevant mitigation measures. Mitigation measures for works subject to this ESMP Checklist include also environmental protection measures, measures for occupational health and safety and community health and safety, cultural heritage chance finds clause, etc. Moreover, the mitigation measures for construction phase include the general measures related to site organization and OHS, community health and safety, measures to prevent the risk of pollution of surface water/ground water/soil due to spill leakage, as well as the risks related to generation of construction and other waste. Finally, mitigation measures for the operations phase include community health and safety and waste generation and management.

Good communication between all involved stakeholders (Designer/Contractor, Supervising engineer, PIU and other relevant stakeholders) is very important for providing undisturbed performance of the project activities and successful completion of overall project.

Environmental and social monitoring during project implementation will provide information about key environmental and social aspects of the sub-project, particularly the environmental and social impacts and the effectiveness of mitigation measures. The Monitoring Plan for monitoring the implementation of mitigation measures ensures daily and periodic monitoring of the implementation of the Mitigation Plan and reporting to the Project Implementation Unit.

Monitoring and reporting of compliance with this ESMP Checklist during design phase will be ensured by PIU E&S specialists, while during construction phase it will be ensured by Supervising engineer and PIU (Environmental and Social specialists). Supervising engineer will report on E&S compliance to PIU. PIU (E&S Specialists) will submit ESMP Implementation Report to WB semiannually. Since this subproject (replacement of light signals on railway level crossings) is potentially shorter-time activity, at least one ESMP Implementation Report will be prepared and submitted before works are completed.

In line with Project procedures in the case of accidents/incidents defined in the Project's ESCP, the Supervising engineer will inform PIU on occurrence of accident without delay and within 12 hours. The PIU will inform the WB immediately and within 48 hours of an accident in line with the accident procedure. E&S Specialists at PIU will prepare and implement an incident reporting procedure, indicating details of the incident, institutional responsibilities, immediate measures to address the reported incident and information requirements to be provided by the Supervising engineer. Supervising engineer will have to fulfil the Notification Report.

An acceptable E&S measures implementation and monitoring report from the contractor or supervising engineer would be a condition for full payment of the contractually agreed remuneration, the same as technical quality criteria or quality surveys. In the case of significant incompliance as well as failure to implement corrective E&S measures, the PIU and WB reserve a right to cease works as well as payments until compliance is re-established.

5 ESMP CHECKLIST FOR RECONSTRUCTION OF RLCs

5.1 Part 1. General project and site information

General project and site information are listed in the following table.

Table 13. General project and site information

INSTITUTIONAL & ADMINISTRATIVE				
Country	Serbia			
Project title	Reconstruction of Railway Level Crossings			
Scope of the sub-project and activity	In total, the reconstruction works include: Installation of modern safety systems; Reconstruction of the railway track in the RLC area and installation of rubber panel structure over the railway; Construction of pedestrian access over the railway; Lighting installation; Installation of traffic signalization and adequate vertical signalization; Installation of video surveillance system.			
Institutional arrangements (WB)	Daniel Pulido (Task Team Leader)	Environmental/Social Specialists: Ivana Novaković Olivera Kovacević Ivana Ivičić		
Implementation arrangements (Republic of Serbia)	Safeguard/Environment Supervision Sonja Markov Ivan Radovanović	Works supervisor	Inspectorate Supervision	Contractor
SITE DESCRIPTION				
Name of site	11 Locations			
Describe site location	Locations are described in more detail in the section 1.2 Municipalities/Cadaster municipalities: Subotica/Tavankut, Donji Grad; Vršac/Vršac; Kikinda/Kikinda; Smederevo/Vranovo; Kraljevo/Vitanovac, Kraljevo, Ratina; Kruševac/Dedine; Negotin/Kobišnica; Knjaževac/Knjaževac.			
Who owns the land?	Republic of Serbia, Used by IŽS			
Valid operating permit, licenses, approvals etc.	For reconstruction it is mandatory to get the Decision on approval for the execution of works. As per Serbian law, the project does not require a full Environmental impact assessment. In the previous period, IZS has obtained the opinion from the Ministry of Environmental Protection that there is no legal obligation to start the impact assessment procedure for the works on the construction of railway crossings with the replacement of the track grid. However, this will have to be confirmed once again.			
LEGISLATION				
Identify national &local legislation & permits that apply to sub-project activity(s)	**Environment and Nature:** Law on Environmental Protection (LEP) ("Official Gazette of RS" No 135/2004, 36/2009, 36/2009 – other law, 72/2009 – other law, 43/2011 – CC ruling, 14/2016, 76/2018, 95/2018 – other law and 95/2018 – other law. The Law on EIA (LOEIA) ("Official Gazette of RS" No. 135/2004 and 36/2009) Law on chemicals ("Official Gazette of the RS. 36/2009, 88/2010, 92/2011, 93/2012 and 25/2015), Law on Strategic Environmental Impact Assessment (Official Gazette of RS of the RS, no. 135/04) transposes into Serbian legislation the SEIA Directive (2001/42/EC)			

	The Law on Protection against Environmental Noise, (“Official Gazette of RS” No 36/2009 and 88/2010) **Water:** The Law on Water (“Official Gazette of RS” No. 30/10, 93/12, 101/2016, 95/2018 and 95/2018 – other law) **Occupational and Community Health and Safety:** The Law on Occupational Safety and Health organized (“Official Gazette of RS” No. 101/2005, 91/2015 and 113/2017 -other law) The Labor Law (LL) (“Official Gazette of RS” No. 24/2005, 61/2005, 54/2009, 32/2013, 75/2014, 13/2017- CC ruling,113/2017 and 95/2018 – authentic interpretation) **Construction and Spatial Planning:** The planning and construction law was published in "Official Gazette of the RS", No. 72/09 of September 3, 2009, corrected "Official Gazette No. 81/09 (Corrigendum), changed by Constitution Court of RS ruling 64/10 (CC), 24/11, 121/12, 42/13 (CC), 50/13 (CC), 98/13 (CC), 132/14 145/14, 83/2018, 31/2019, 37/2019 (other law), 9/2020, 52/2021 and 62/2023 **Labor management and Gender Equality:** The Labor Law (LL) (“Official Gazette of RS” No. 24/2005, 61/2005, 54/2009, 32/2013, 75/2014, 13/2017- CC ruling,113/2017 and 95/2018 – authentic interpretation) Law on gender equality (official Gazette of the RS no 52/2021) **Waste Management:** The Law on Waste Management (“Official Gazette of RS” No. 36/2009, 88/2010, 14/2016, 95/2018 and 36/2023) **Fire protection:** Law on Fire Protection (“Official Gazette of RS” no. 111/09 and 20/15) **Cultural heritage:** The Law on Cultural property (“Official Gazette of RS” No. 71/94, 52/11 – other law, 92/11 – other law) **Stakeholder Engagement:** The Law on Free Access to Information of Public Importance (Official Gazette or the RS 120/04, 54/07, 104/09 and 36/10) **Other:** Law on road traffic safety ("Official Gazette of RS", No. 41/2009, 53/2010, 101/2011, 32/2013 - decision US, 55/2014, 96/2015 - law, 9/2016 - decision US, 24/2018, 41/2018, 41/2018 – other law, 87/2018, 23/2019, 128/2020 – other law and 76/2023)

	Law on Amendments to the Law on Road Traffic Safety ("Official Gazette of RS", No. 76/2023) Law on Safety in railway traffic ("Official Gazette of RS", No. 41/2018)
PUBLIC CONSULTATIONS	
Identify when / where the public consultation process took place and what were the remarks from the consulted stakeholders	The ESMP Checklist will be published and made available for public for 14 days at the Ministry of Construction, Transport and Infrastructure web site with a call for comments and suggestions. A hard copy will be made available at the PIUs reception desk/office during the consultations. All received complaints and suggestions, comments will be logged in and addressed. Minutes of the consultations will be added as an annex to the final version of the ESMP Checklist.
INSTITUTIONAL CAPACITY BUILDING	
Will there be any capacity building?	**[x] N or [] Y**
ATTACHMENTS	
Minutes of the meeting	

5.2 Part 2. Environmental and Social Screening

Results of environmental and social screening are shown in Table 14, while environmental and social mitigation measures are shown in Table 15.

Table 24: Environmental and social screening

PART 2: ENVIRONMENTAL /SOCIAL SCREENING			
Will the site activity include / involve any of the following potential issues / risks:	**Activity**	**Status**	**Additional references**
	General conditions and social risk management	[**X**] Yes [] No	If "Yes", See Section A below
	Reconstruction of RLCs	[**X**] Yes [] No	If "Yes", See Section A,B, C, E, F, H below
	Impact to cultural and historical heritage	[] Yes [] No Maybe [**X**]	If "Yes", See C below.
	Biodiversity and Nature protection areas / Natura 2000 sites	[] Yes [**X**] No	If "Yes", See Section D below
	Waste management	[**X**] Yes [] No	If "Yes", See Section E below
	Traffic safety	[**X**] Yes [] No	If "Yes", See Section A,B,F below
	Land acquisition[2]	[] Yes [**X**] No	If "Yes", See Section G below
	Safety during works (from electricity and accidents)	[**X**] Yes [] No	If "Yes", See Section H below

Table 3. Environmental and social screening

[2] Land acquisition covers people's displacement, lifestyle changes, disturbance of private ownership and affecting people living and / or staying or running a business (kiosks) on the land or near by

Table 45: Environmental and social mitigation measures

Parameter	Mitigation measures checklist
A General conditions and social risk management	
General design WB EHS Guidelines[3] (DESIGN PHASE)	Designs will be prepared in accordance with Article 145 of Law on Planning and Construction ("Official Gazette of RS", No. 72/221A9, 81/221A9 - corrigendum, 64/2010 - US decision, 24/2011, 121/2012, 42/2013 - US decision, 50/2013 - US decision, 98/2013 - US decision, 132/2014, 145/2014, 83/2018, 31/2019, 37/2019 - other law, 9/2020 and 52/2021). The Consultant will be obliged to review it in accordance with the Rulebook on the content, manner and procedure of preparation and manner of control of technical documentation according to the class and purpose of the object ("Official Gazette of RS", No. 73/2019). The designs will be aligned with applicable WB EHSG requirements in General Guidelines (Occupational Health and Safety, Community Health and Safety, Construction and Decommissioning, Environmental ,etc.), Infrastructure (Railways), and other applicable.
Community Health and Safety and (DESIGN PHASE) **Fire protection**	The sub-project is designed, constructed, and operated in full compliance with local building codes, local fire department regulations, local legal/insurance requirements, WB EHSG, GIIP and in accordance with an internationally accepted life and fire safety (L&FS) standards
Site organization (CONSTRUCTION PHASE)	All legally required permits, authorizations, opinions, safety procedures, plans (e.g. traffic) etc. have been acquired and prepared for the project activities and are kept on site. Contractor/subcontractors have valid operating licenses. Align the work with weather conditions which can factor in safe organization of works and OHS measures (e.g. provide shelter or cease works during strong winds, provide sufficient amounts of water and electrolytes during heat, and other appropriate measures). Construction Work Plan is available at the construction site, and all occupational health and safety measures are ensured (all emergency response protocols and instructions have to be available at site, e.g. in case of earthquake, fire, etc.). Assign person who is in charge of establishment and management of GRM (communication with and receiving requests/complaints, local population and construction workers). The contractor has multiple copies of the SRSM external grievance mechanism submission form available on each construction site (digital copy available on the MoCTI website). Procedures for safe work are in place and communicated to all relevant parties before works commence; they include (but are not limited to) e.g. if the railway remains in operation according to IŽS procedures, or if the devices at the crossing are not functional, the train driver is informed by a general order at one of the previous stations, and in that case he/she must stop in front of the crossing before continue driving. Also, if there are works in the railway zone, all workers must be trained to work on the railway in the safe way and be informed by the IŽS representative about all precautionary measures, especially for railways with KM (overhead lines). There is also a railway warning sign that is placed along the track on the length of the stop way, which is a notification to the train driver that work is being carried out in the track area and he gives sound signals all the way to the potential collision point, which is a signal to the workers to get off the track and that the train is approaching. The speed of the train approaching the point will be significantly reduced (to maximum 30 km/h).

[3] According to the HCF Design Considerations described in the Environmental, Health, and Safety Guidelines for Health Care Facilities

Parameter	Mitigation measures checklist
	Appropriate installation of sign posting of the project sites will inform workers of key rules and regulations to follow. The location will have necessary elements of construction site (The works zone is the part of the road on which the changed traffic regime was determined during the replacement works), which includes and temporary physical barrier towards the road and railway tracks (e.g. fence). Ensure appropriate marking in and out of the construction sites /section by section and speed-reduction signs. Temporary material storage should be clearly marked. No temporary storage of construction materials and waste occurs within any type of private property. Limit construction activities to day hours. When necessary, carefully schedule night work, obtain approval form the competent and local authorities and inform affected community beforehand. No noisy activities shall be scheduled for the night work. The surrounding area near the project is kept clean and good housekeeping practices are applied at the site. Works are carried out in a safe way. Stockpiles are located away from drainage lines, natural waterways and places susceptible to land erosion. Stockpiles do not exceed 2 m in height to prevent dissipation and risk of fall. Producer of asphalt, gravel, concrete will possess all necessary concessions, working and OHS permits, and emission permits and quality certifications. If the works are to be undertaken during regular traffic, according to Rulebook for Traffic 227, Rules on the Types of Signals, Signal Markings and Railway Markings (adequate for alerting traffic/pedestrians, and other participants in the traffic), which define the type and length of the sound signal when a train approaches the place where work is being done, e.g. the sound signal must be sufficiently loud, and frequent to alert. Nearby the work zone, there will be road traffic signs informing car drivers, pedestrians and other, about the road works, which will be defined and approved before and during the execution of works. Warning signs will be installed in a visible place/position. The nature of the signs will depend on the road level and road features such as frequency of traffic. Signs, depending on the road category, are: speed limit signs (50 km/h) and a "traffic jam" sign will be posted, manual traffic regulation, then another correction will follow speed at 30 km/h. The existing signalization and traffic signs will remain, unless the change is initiated by changes in the law. This signaling will be placed on both sides of the level crossing. The auxiliary worker - the flagman or light signalization (or other adequate mean of safe traffic organisation will be in place) is located 20 meters in front of the first obstacle. The location will have necessary elements of construction site (The works zone is the part of the road on which the changed traffic regime was determined during the replacement works), which includes and temporary physical barrier towards the road and railway tracks (e.g. fence). Ensure that all transportation vehicles and machinery are equipped with appropriate emission control equipment, regularly maintained and attested. There will be no unlicensed borrow pits, quarries, or waste dumps in adjacent areas, especially not in protected areas.
Community Health and Safety (CONSTRUCTION PHASE)	Health, Security and Safety Management Plan, Elaborate on the Arrangement of the Construction Site and Traffic Management Plan is prepared for each site to ensure safety of workers and communities during works. The public is informed in a timely manner about the upcoming works, through appropriate notification in the media and/or at publicly accessible sites (including the site of the works). The local community is informed in a timely manner in case of interruptions in the supply of any local utilities (water, electricity, etc.) caused by the works and when they will end (be repaired). In an event where the traffic will be interrupted the Contractor needs to organize alternative routes and inform the public, in a timely manner,

Parameter	Mitigation measures checklist
	about the alternative traffic regulation. Safe passages are provided for pedestrians. Entry for unauthorized persons within the construction site is prohibited (fences or other markings should be used when/where needed). There is appropriate marking in and out of the construction sites /section by section and speed-reduction signs. Roads are regularly swept and cleaned at critical points. Spilled materials are immediately removed from a road and cleaned. Strictly respect the Railway Rulebook for Traffic N° 227 and Manual for the application of safety measures against electric current on the contact network of the single-phase system 25kV 50Hz of Yugoslav railways N° 227a. . Fire alarming and fire safety measures are in place. The contractor has a workers' internal grievance mechanism Workers do not engage in Sexual Exploitation, which means any actual or attempted abuse of position of vulnerability, differential power or trust, for sexual purposes, including, but not limited to, profiting monetarily, socially or politically from the sexual exploitation of another. Workers do not engage in Sexual Abuse, which means the actual or threatened physical intrusion of a sexual nature, whether by force or under unequal or coercive conditions. Works are organized in a safe manner for workers, communities and other stakeholders; All working and traffic signs must remain visible at the site – e.g. where traffic light has e.g. st andew's cross attached to it, the sign should be posted on a visible position before works; no vehicles will be parked to block view to the railway line or crossing, etc. Ensure works are not interfering safety of vehicles or pedestrians at crossings (e.g. ensuring good visibility at all times) The light must be replaced in one go. If the workers leave the site, alternative/auxiliary traffic light must be provided
Occupational Health and Safety (CONSTRUCTION PHASE)	OHS implemented in line with the national legislation and WB EHSG Communication between stations about possible incoming trains is described in detail in the rulebook 227, section business order of the station. This rulebook must be followed thoroughly to avoid any possible accidents. Key measures include: Speed of trains will be reduced to 20km/h in the area of works. According Rulebbok on the types of signals, signal markings and railway markings N° 160, signal sign for the announcement of danger is signal sign 3: "Danger" ●●● ●● ●●● ●● ●●● ●● ●●● ●● (three and two short rings, alternating at least four times). During the execution of the works, it is possible to close the tracks during the validity of the timetable (article 316 of the Rulebook for Traffic 227). According to IŽS procedures, if the devices at the crossing are not functional, the train driver is informed by a general order at one of the previous stations, and in that case he must stop in front of the crossing and continue driving. Also, if there are works in the railway zone, all workers must be trained to work on the railway and be informed by the IŽS representative about all precautionary measures, especially for railways with Overhead Lines (KM). There is also a railway warning sign that is placed along the track on the length of the stop way, which is a notification to the train driver that work is being carried out in the track area and he gives sound signals all the way to the collision point, which is a signal to the workers to get off the track and that the train is approaching. Whenever possible, the works will be organized while the trains are not running. In addition to sound sirens, in according to the Procedures, there will be continuous communication between the train driver, workers, station chefs, etc. The workers will be informed of the upcoming train as well as having the train schedule. The organizational unit that requests the closure of the railway during the validity of the timetable, submits a request to the manager of the railway infrastructure no later than ten days before the start of the closure, which contains: The manager of the railway infrastructure informs key participants in writing about a specific closure, no later than five days before the

Parameter	Mitigation measures checklist
	beginning of the closure; the following personnel/units are informed: 1) stations between which the railway closure is requested for; 2) competent operational service; 3) neighboring dispatching stations, as well as starting and branching stations on that dispatching section; 4) the organizational unit that requested the closure of the railway; 5) other interested/relevant departments of railway infrastructure managers and railway carriers. The units that have received a written notification of a certain track closure shall immediately confirm in writing the receipt of the notification to the manager of the railway infrastructure and the organizational unit that requested the track closure; On the day of the planned closing of the tracks, approval for the immediate start of the closing is given by neighboring stations, and on tracks by the TK-dispatcher (communication and track monitoring dispatcher), with the prior consent of the competent operational service. The manager of works on the railway records in the traffic log of one of the neighboring stations the time of the start and end of the railway closure. This entry is immediately communicated by the station as evidence to the neighboring station. On the station switchboard, i.e. on the telephone and the signal and switchboard device of the train conductors and switchmen during the closure of the railway, a sign with the inscription: "TRACK IS OCCUPIED" stands/is displayed. The switch operator is informed about the beginning and end of the railway closure, as well as whether the work site is protected or not. Consent for the immediate start of track arrest in the station is given verbally by the train dispatcher (and will be also logged in for the purposes of this Project), and on the TK (telecommunication and monitoring)-line by an authorized station worker with the consent of the (telecommunication)TK-dispatcher, and the works manager writes the start and end of the works, as well as the condition and capacity of the tracks and traffic facilities in the traffic log, about which on TK-tracks the authorized station worker informs the TK-dispatcher. After the closure of the railway or tracks, the works manager and all supervisory authorities enter the conditions for the continuation of traffic in the traffic log, and if there is a change compared to the condition before the closure of the railway or tracks (light driving, reduced speed due to a change in the level of insurance, etc.). In addition to sound sirens, in according to the Procedures, there will be continuous communication between the train driver, workers, station chefs, etc. The workers will be informed of the upcoming train as well as having the train schedule. A communication/alertness plan between the Contractor, near stations, switchboard operator and other relevant parties, will be prepared and approved by the PIU before works commence. The plan will ensure that communication and signaling alert and danger to workers on the tracks will be possible at any moment. Workers who will be engaged, will be trained and regularly use/wear Personal Protective Equipment (PPE) complying with national legislation international good practice (ESH and safety glasses, safety boots, harnesses when needed and other work specific protective equipment). All dangerous spots in the working sites such as pits, trenches, etc. are clearly marked and fenced (according to the rulebook 227a, GIIP and WB EHSG, stricter ones prevailing). Staff is properly trained for the positions and work performed (including OHS); workers hold valid workers certificates. First aid kits are available on the site and personnel trained to use it. Appropriate informative and warning signposting of the sites inform workers of key rules and regulations to follow. Machines and heavy vehicles are handled only by experienced and appropriately trained personnel, thus reducing the risk of accidents. Procedures for cases of emergency (including spills, accidents, fire etc.) are available at the sites and conveyed to all employees. Devices, equipment and fire extinguishers are always functional, so in case of need they could be used rapidly and efficiently. Supervision of

Parameter	Mitigation measures checklist
	fire protection/fire-fighting facilities to be carried out by a designated staff. Constant presence of attested firefighting devices will be ensured on sites in case of fire or other damage. Their position is communicated to workers and marked. The level of fire-fighting equipment must be assessed and evaluated through a typical risk assessment. The transportation routes outside the construction areas (local, county and state roads) will be kept clean. Provide adequate lavatory facilities (toilets and washing areas) with adequate supplies of hot and cold running water, and soap. Materials and chemicals must be handled by professionally trained persons according to Material Safety Data Sheet and Technical Sheet. Wages and contract conditions offered to all staff should be in keeping with Serbian labor laws or higher set standards which should be competitive in all categories of workers, and all workers should be informed about their rights. Internal GRM mechanism for contractor and sub-contractor workers established and implemented. Access to good conditions sanitary facilities (toilets, washing facilities, etc.) and potable water is provided for all workers.
Accidents and emergencies (CONSTRUCTION PHASE)	In the case of significant accident/incident (fatality, serious injury, larger spilling, fire, and similar) the PIU must be notified within 12 hours. Activities will be carried out in accordance with the Project's Incident/Accident Procedure. Emergency Preparedness and Response (EPR) plan prepared for construction works shall cover actions that must be taken to ensure staff/worker's safety from fire and other accidents.
Community Health and Safety (OPERATIONS PHASE)	Regular control and maintenance of installed equipment . Before end of works prepare Emergency Preparedness and Response for the operations phase;
B Construction activities	
Water and groundwater quality Soil (CONSTRUCTION PHASE)	Community is informed in advance of any work activities to occur outside of normal working hours or on weekends. Obtain permission form competent authorities Regularly maintain and service the construction machines. Employees are asked to use personal hearing protection equipment in the cases defined by the article 8 of Ordinance on the protection of workers from noise exposure at work. During operations the engine covers of generators, air compressors and other powered mechanical equipment are closed, and equipment is placed as far away from nearby residential houses as possible Responsible handling of liquid waste. Adding fuel oil activities carry out on the part of the construction site that is derived from an impermeable working surface. Handle all materials in accordance with instructions included in Material safety data sheets (MSDS) and Technical Sheets which have to be available at the construction site. Adhere the measures and standards for construction machinery. Try to avoid fuel and lubricant storage on construction site. If installation of fuel storage tanks will be needed, they should have secondary tanks with sufficient volume to contain a spill from the largest fuel tank in the structure as well as be protected from the impact of weather. The containment area has to have a device (pump) to remove accumulated water. The containers with hazardous substances will be kept in a leak-proof container to prevent spillage and leaking. This container should possess secondary containment system such as bunds (e.g. bunded-container), double walls, or similar. Secondary containment system must be free of

Parameter	Mitigation measures checklist
	cracks, able to contain the spill, and be emptied quickly. The containers with hazardous substances must be kept closed, except when adding or removing materials/waste. They must not be handled, opened, or stored in a manner that may cause them to leak. In the case of an accident, any hazardous liquid will be removed from the soil using adsorption materials such as sand, sawdust or mineral adsorbents. Such waste material you have to collect in tanks, store in the space provided for hazardous waste storage and hand over to authorized companies. Prevent hazardous spillage coming from tanks, containers (mandatory secondary containment system, e.g. double walled or bunded containers), construction equipment and vehicles (regular maintenance and check-ups of oil and gas tanks, tend to park (manipulate) machinery and vehicles only on asphalted or concrete surfaces with surface runoff water collecting system. Isolate wash down areas of concrete and other equipment from watercourse by selecting areas for washing that are not free draining directly or indirectly into watercourse. Do not extract groundwater, nor discharge cement slurries, or any other contaminated waters into the ground or adjacent streams or rivers. This is strictly prohibited. Ensure proper storm water drainage systems installed and take care not to silt, pollute, block or otherwise negatively impact natural streams, rivers, ponds and lakes by rehabilitation activities.
Noise (CONSTRUCTION PHASE)	Avoid performing works during the night. If this is unavoidable, organize works so that the noisy works are not carried out during the night. Maximum permissible noise level for the construction site is 65dB. It is allowed to exceed that level for additional 5 dB in the period from 8 to 18 hours. It is allowed to exceed that level for additional 5 dB in the period from 8 to 18 hours. When performing construction works during the "night" time period, the equivalent noise level must not exceed 40 dB. Exceeding the permissible noise levels shall be allowed if necessary for the technological process of the construction site and for up to three (3) nights within a consecutive period of thirty (30) days. A minimum of two full night periods shall be provided between periods when exceeding allowable noise levels is anticipated without exceeding allowable noise levels during the night period. It is desirable to carry out works in the period from 8 to 18 hours and not to carry works during the nights. Community should be informed in advance of any work activities to occur outside of normal working hours or on weekends. Obtain permission form competent authorities. All equipment must be maintained in good operating condition and be attested. Employees have to be asked to use personal hearing protection equipment in the cases defined by the article 8 of Ordinance on the protection of workers from noise exposure at work (OG 46/08). During operations the engine covers of generators, air compressors and other powered mechanical equipment shall be closed, and equipment placed as far away from nearby residential houses as possible.
Materials management (CONSTRUCTION PHASE)	There will be no water extraction at the site. Ensure the subcontractor has all the necessary skills and experience and precautionary systems in place to prevent a wash off of bituminous materials (primer or primer binder). Water in bitumen emulsion production or concrete should not be contaminated (however, technological water is preferred). Equipment shall be cleaned in areas where there will be no impact to the environment or danger of surface run-off (e.g. areas where water is collected to retention basins and transported to proper water treatment, and waste is separated and appropriately disposed). All materials have to be approved by the site engineer. Materials temporarily stored on site shall be protected and separated. HDPE pipes are not to be in touch or stored next to oil, coatings,

Parameter	Mitigation measures checklist
	solvents,etc.
C. Cultural Heritage Protection	
Cultural Heritage Protection (CONSTRUCTION PHASE)	In the case of chance finds, the works will be stopped immediately, WB and competent authority informed without delay and instructions of the competent authority adhered to. Wors can recommence only when the competent authority allows this, in writing. In the case accidental damage takes place to cultural heritage, the activity causing the damage will be stopped immediately, WB and competent authority informed without delay and instructions of the competent authority adhered to. Wors can recommence only when the competent authority allows this, in writing. Transport and delivery routes will be planned away from the protected cultural heritage buildings and objects. Server room cannot be installed near any cultural heritage building or object.
E. Waste generation and management	
Waste generation and management (CONSTRUCTION PHASE)	Each type of generated waste on the location is separately collected (main fractions including hazardous) temporary stored in separate waste container which have to be labelled with waste type name and waste code and located at the solid surface foreseen for that purpose on the construction site. All waste, including construction waste is handed over to the licensed collectors and disposed exclusively on the licensed landfills or licensed processing plants. The generated waste is separated, identified and collected at the point of generation in packaging adapted to its properties (toxic, flammable, etc.), quantity, method of temporary disposal, transport and final treatment. All specified by the documentation that follows the waste generated during the work process in IŽS (point 4.4. WMP). In case of hazardous waste is generated primary selection is carried out, packaging and labeling, and Internal transport non-hazardous waste. All material declared as waste in "IŽS . it is handed over/sold to authorized operators for further treatment All waste is handed over with appropriate documentation to the companies authorized for the waste management (companies that have adequate waste permit).Whenever feasible the contractor reuses and recycles appropriate and viable materials. In the case of hazardous waste, information on handing over waste to the final destination must be obtained. Whenever feasible the contractor should reuse and recycle appropriate and viable materials. Mineral (natural) construction wastes is separated from general refuse, organic, liquid and chemical wastes by on-site sorting and temporarily stored in appropriate containers. Depending on its origin and content, mineral waste has to be reapplied to its original location or reused with an approval from the competent authority and the beneficiary. Burning or illegal dumping of waste is strictly prohibited
Waste generation and management (OPERATIONS PHASE, including end use)	Ensure separate collection of waste at the place of origin, keep records, store waste in appropriate containers and temporarily store waste in a specially separated area until processing or until handing over to an authorized person. Dismantled material will be handed over to the licensed waste collector. If applicable, parts that can be recycled will be disassembled and processed separately.
F Traffic safety	
Traffic safety (CONSTRUCTION	Traffic management plan based on the conducted Study on safety of traffic (Elaborat o sigurnosti) will be prepared for the works, subject to approval of competent authorities.

Parameter	Mitigation measures checklist
PHASE)	Traffic management have to be conducted in accordance with provisions of traffic legislation (e.g., appropriate lighting, traffic safety signs, barriers and flag persons that are seen easily or are easy to follow, road speed should be clearly posted). Works will not be carried out in the way that causes a visual obstacle to train drivers (to traffic lights, traffic signs, level crossings, and other signalization and in other needs for the clear view). Spilled materials are immediately removed from tracks and cleaned. Tracks are well maintained. Access of the construction and material delivery vehicles are strictly controlled, especially during the wet weather. Provision of safe passages and crossings for pedestrians where construction traffic interferes. Avoiding major transport activities during rush hours or times of livestock movement.
H. Safety during works (from electricity and accidents)	
Protection measures from electric shock and other accidents (including traffic)	Works will be organized in the safe manner including to prevent electric shocks. All electrical work must be carried out only by a licensed electrical worker. Checking all electrical cords, cables, and hand power tools for frayed or exposed cords and following manufacturer recommendations for maximum permitted operating voltage of the portable hand tools. Double insulating / grounding all electrical equipment used in environments that are, or may become, wet; using equipment with ground fault interrupter (GFI) protected circuits. Protecting power cords and extension cords against damage from traffic by shielding or suspending above traffic areas. Conducting detailed identification and marking of all buried electrical wiring prior to any excavation work. Attend specific training on protection from high-voltage and electricity shocks provided by Serbian Railways Infrastructure. Works are supervised by authorized supervisor. Provide a detailed schedule with names of all working personnel, of where and when work is done. It is prohibited to place or stock next to the track, and especially near visible railway signals and markings, colored lights or any other things that are colored, shaped or light, or otherwise make it difficult to detect railway signals or may affect off. Do not change of position of switches or other devices that provide train traffic, take action or use a braking device, unless this could prevent the risk to train safety, safety of passengers and other persons. Stockpiling in zones close to high voltage systems and contact lines is not allowed. Works are performed by experienced workers equipped by appropriate helping devices especially adapted for these purposes. Any connection or closeness of contact wire, side wire, or parts for its fixing or leaning (isolators, parts of cantilever etc.) is forbidden. In such zones, working with water is forbidden. Next to the pillars of contact line, it is forbidden to set up, or place any kind of material. Approach to the pillars has to be clean. Throwing of metal parts in zone of contact wire is forbidden. There are some records with fatal consequences, as for example, fast withdrawing of steel measuring ribbon. On certain positions and according to appropriate regulation books, the safety of working space should be ensured by pole grounding. Poles are placed and removed only by authorized person. Identification of these certain positions and application of the regulation books are with the contractor, OHS and works coordinator.

5.3 Part 3. Monitoring Plan

Monitoring plan is presented in the following table.

Table 16. Project components and sub-components

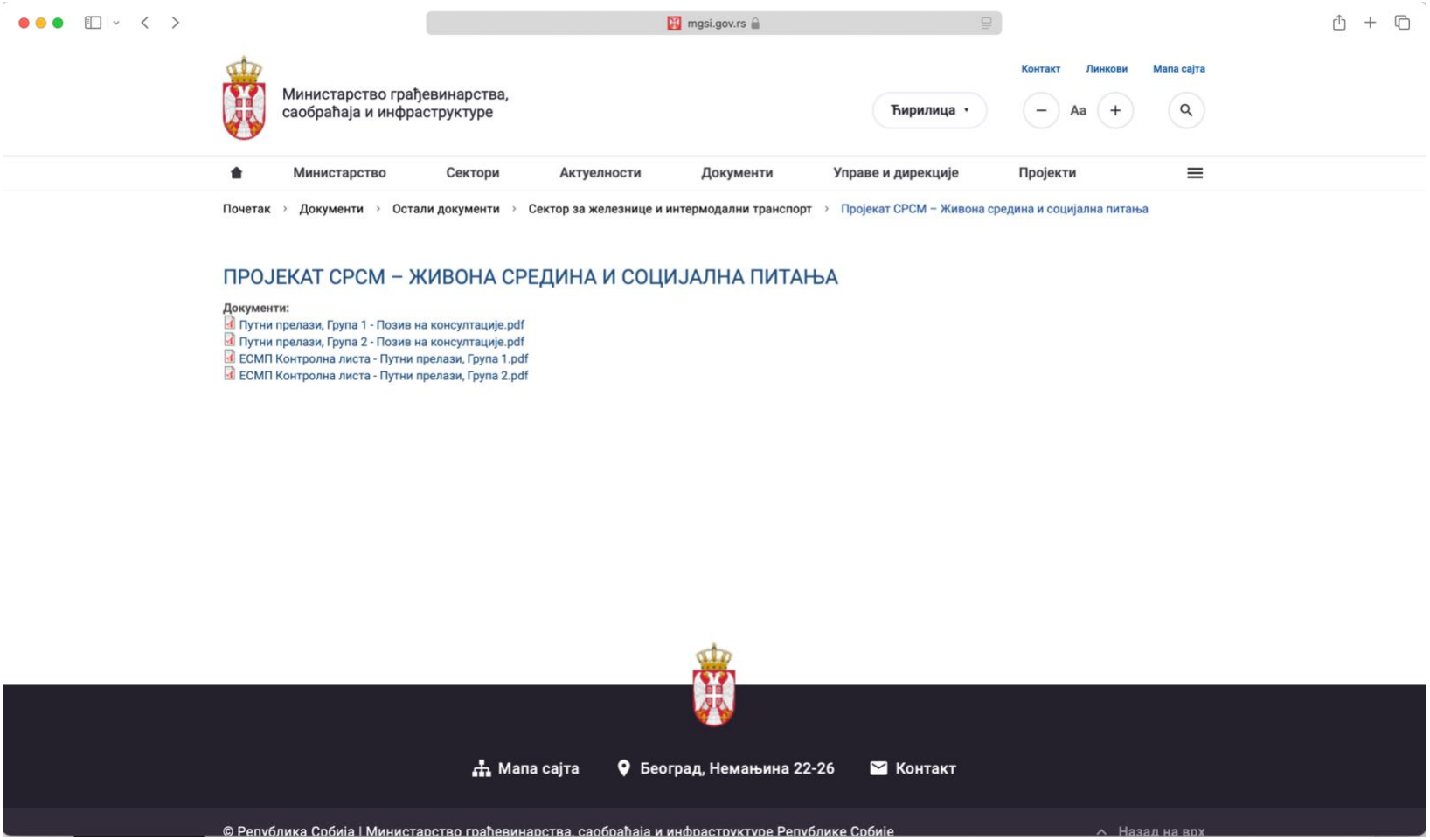
What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)	
						Implementation	Supervision
PREPARATORY PHASE							
All required permits are obtained before construction works start	Office	Desk review	Before works	Ensure safety and quality	Within the Project costs/budget	Contractor	Contractor
All required trainings will be carried before the works commence	Office	Desk review	Before works	Ensure safety and quality	Within the Project costs/budget	Contractor	Investor
Project and Worker's grievance mechanism (GRM) established before works commenced	Office	Desk review	Before works	Ensure safety and quality	Within the Project costs/budget	Contractor	Investor
Public and relevant institutions are notified	Office	Desk review	Before works	Ensure safety and quality	Within the Project costs/budget	Contractor	Investor
Safety measures related to traffic of trains are approved by the competent authorities and	Office	IŽS standard procedures and ESMP Checklist measures	Before works	Ensure safety and quality	Within the Project costs/budget	Contractor	Investor

What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)	
						Implementation	Supervision
communicated to operators. Supervision is in place.							
Alertness and communication plan is prepared satisfactory to the PIU	Office	Desk review	Before works	Ensure safety and quality	Within the Project costs/budget	Contractor	Employer/Supervising person
CONSTRUCTION PHASE							
The project is executed in accordance with design documentation and obtained permits, and the ESMP Checklist	Site	Visual, site and document inspection	During installation	Ensure safety and quality	Within the Project costs/budget	Contractor	Supervising engineer/appointed person
The construction site has a work plan and is kept tidy and safe.	At the project site	Visual, site and document inspection	During installation	To ensure community and worker safety	In the Project budget	Contractor	Supervising engineer/appointed person
The construction site is fenced and properly marked.	At the project site	Visual, site inspection	During installation	To ensure community and worker safety	In the Project budget	Contractor	Supervising engineer/appointed person
All hazardous places on the construction site (e.g. ditches, holes, materials) are marked and protected in such a way as to prevent injury.	At the project site	Visual, site and document inspection	During installation	To ensure community and worker safety	In the Project budget	Contractor	Supervising engineer/appointed person

What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)	
						Implementation	Supervision
Protective clothing and equipment, is available in sufficient quantity and used regularly.	At the project site	Visual, site and document inspection	Before works, during installation	To ensure community and worker safety	In the Project budget	Contractor	Supervising engineer/appointed person
The safety of pedestrians and workers is ensured.	At the project site	Visual, site and document inspection	Before works, during installation	To ensure community and worker safety	In the Project budget	Contractor	Supervising engineer/appointed person
All machinery and vehicles are switched off when not in use.	At the project site	Visual, site	During installation	To ensure community and worker safety, air quality	In the Project budget	Contractor	Contractor
Sufficient number of containers for municipal and other waste is provided on the construction site	At the project site	Visual, site	Before works, during installation	To ensure community and worker safety	In the Project budget	Contractor	Supervising engineer/appointed person
Protection of workers from electric shocks and high voltage measures are in place.	At the project site	Contractor OHS document inspection	Before works, during installation	To ensure community and worker safety	In the Project budget	Contractor	Supervising engineer/appointed person
Measures for protection from high-voltage and other OHS measures are in place and adhered to.	At the project site	Visual, site	Before works, during installation	To ensure community and worker safety	In the Project budget	Contractor	Supervising engineer/appointed person

What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)	
						Implementation	Supervision
If soil or water contamination occurs, will it be disposed of and managed in accordance with national legislation (as hazardous waste)	Site, Office	Visual inspection, Desk review	During works	Maintain soil and water quality, prevent contamination	Within the Project costs/budget	Contractor	Employer/Supervising person
All certificates and accompanying document sheets are kept.	At the project site	Visual, site and document inspection	During installation	To ensure community and worker safety	In the Project budget	Contractor	Supervising engineer/appointed person
Sub-project stakeholder engagement	Office	Regular, existing communication procedures, Announcements about works beginning and duration	Before works	Ensure safety and quality	Within the Project costs/budget	Contractor	Employer/Supervising person
Project GRM is established and operational	At the project site	Visual, site inspection	Before, During works	Ensuring good cooperation with stakeholders and closing the feedback loop	In the Project budget	Contractor	Employer
Workers GRM for contractor and sub-contractor workers is established and operational	At the project site	Visual, site inspection	Before, During works	Ensuring worker grievances are addressed and resolved	In the Project budget	Contractor	Supervising engineer/appointed person
AFTER CONSTRUCTION WORKS							

What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Cost (if not included in project budget)	Who (Is responsible for monitoring?)	
						Implementation	Supervision
All proofs of technical conformity are obtained before the use permit	In the IŽS archive	By inspecting all documents required and works executed	Before issuing use permit	To ensure technical conformity prior to use	Included in project budget	Main designer, supervising engineer, competent authorities	supervising engineer, competent authorities
Waste management plan is written	In the Serbia Railway Infrastructure official gazette	By inspecting all documents required and works executed	Every 3-5 years	To ensure technical conformity	Included in project budget	IŽS	IŽS competent authorities

5.4 Minutes of public consultations

An invitation to participate in public consultations was published on September 12th, along with this ESMP Checklist, on the website of the Ministry of Construction, Transport and Infrastructure, and the printed copies were also available in the PIU office in Belgrade. The stakeholders and general public could submit their suggestions for 15 days, until September 26th. No comments were received.