

ADDITIONAL ENVIRONMENTAL AND SOCIAL MANAGEMENT AND MONITORING PLAN (ESMMP)

Expressway A2, section Rankovce – Kriva Palanka,

Lot 1 (km 10+308 to km 25+850), additional works

1. Introduction

The World Bank is supporting the Government of the Republic of North Macedonia (GoRNM) i.e. Public Enterprise for State Roads (PESR) through an investment loan to finance construction of a new expressway A2 Section Rankovce - Kriva Palanka. The section Rankovce – Kriva Palanka is part of the Corridor VIII East - West (BC Deve Bair – Kriva Palanka – Kumanovo – Gostivar – Kichevo – BC Kjafasan), which is one of the two most important international corridors in North Macedonia.

The proposed road is a 25 km section from Rankovce to Kriva Palanka, located in the north-eastern part of the territory of North Macedonia, near the border with Bulgaria.

The subject section is divided into two subsections, the first subsection is Kriva Palanka to Dlabochica, while the second subsection is Dlabochica to Stracin (Chatal). The expressway section A2, Rankovce – Kriva Palanka is under construction.

Above mentioned works are part of the expressway A2 section road Rankovce - Kriva Palanka, which is part of the road network of RN Macedonia, that starts near the village of Rankovce and ends near Kriva Palanka. For the entire expressway section Rankovce – K. Palanka PESR has prepared ESIA study for which the competent authority MoEPP has issued a positive Decision. The ESIA and ESMP were approved by the World Bank.

This additional ESMMP is prepared to address the new works envisaged on the expressway Rankovce – Kriva Palanka, Lot 1 (km 10+308 to km 25+850), as addition to the already approved ESIA and ESMP. The additional works are along Lot 1 within the previously assessed expressway corridor and will include: new road junction Rankovce, dislocations of the existing water supply pipes, changes in the foundation of the viaduct 18 - “Jabucin dol” and build new connection – crossing roads on the part where the new express road cuts the existing earthen roads.

The road junction Rankovce, dislocation of the water supply pipes and changes in the foundation of the viaduct 18 “Jabucin dol” are part of the project “**Development, completion and adaptation on project documentation for construction of state road A2, section Rankovce – Kriva Palanka, at the level of the expressway**”. Also, parallel crossing roads will be built where the new express road cuts the existing earthen roads, providing proper crossings to help the local communities.

PESR has sent Letter of intention for the construction of the road junction Rankovce to the MOEPP. The Ministry has issued a letter no. 11-2312/3 dated 11.12.2020 with opinion that **no** additional Environmental Protection Report and measures are required for the road Junction Rankovce.

2. Project description

The levelled road junction "Rankovce" is located in the vicinity of the village Rankovce, at chainage on the expressway km 22+200 (chainage taken over from the project - "**Development, completion and adaptation on project documentation for construction of state road A2, section Rankovce – Kriva Palanka, at the level of the expressway**"), while being at a sufficient distance from the road junction "Chatal" for cross signalization of the two road junctions as required by the technical standards.

Also, at this location, the road junction would provide a connection of the expressway with the existing road A2 and thus with all settlements in its vicinity.

The road junction "Rankovce" is a road node of the crescent type, where the ramps are provided from the same side (symmetrical crescent).



Figure 1. location of the road junction Rankovce

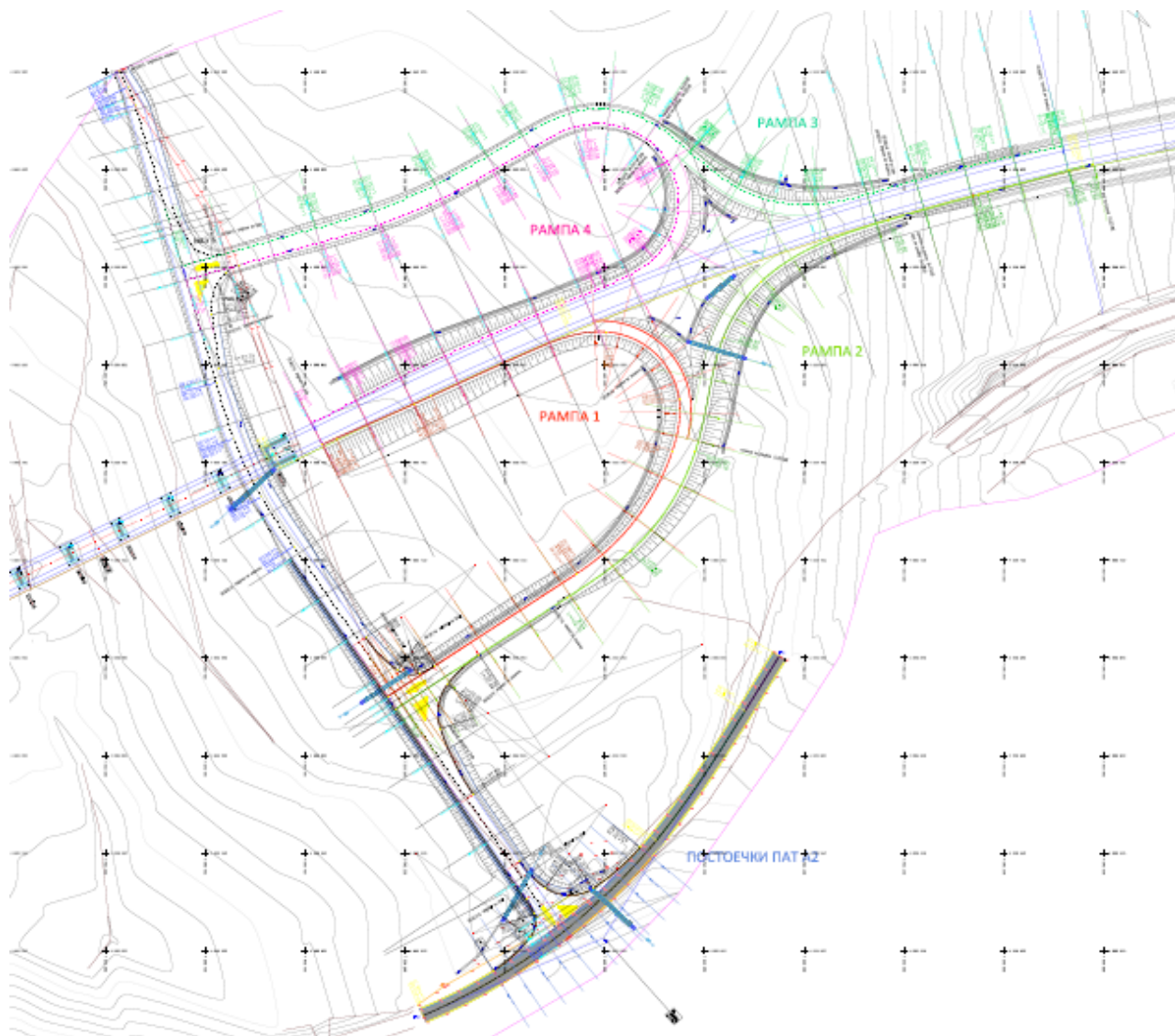


Figure 2. Road junction Rankovce

Characteristic transverse profiles

The transverse profile of the road is defined by the Project Program received from the Investor PE for State Roads of the Republic of North Macedonia in accordance with the rank and significance of the road and it is:

- Width of the road5.60 (7.60) m
- Left shoulder 1.50 m
- Right shoulder 1.50 m
- Planum8.60 (11,10) m
- Transverse slope in the direction 2.5%
- Maximum transverse slope in a turn 5%
- Maximum longitudinal slope 6%

ROAD CONSTRUCTION

Road construction is designed according to the database of average year daily traffic. The following road construction was obtained by dimensioning as follows:

- Asphalt concrete with polymer: AB 16c d = 6.0 cm
- Bituminized load-bearing layer: BNS 32SA d = 8.0 cm
- Buffer layer of crushed stone material: d = 30.0 cm
- Improved bedding of crushed stone in excavation: d = 20.0 cm

The recommended slope of the embankments is 1:1.75, and the excavations 1.5:1. For higher excavations, it is recommended to carry out a berm with a minimum width of 3.0 m to 7.0 m high.

Dislocation of the water supply pipes

Dislocation of the water supply pipes will be on the following chainage:

- km 10+520 L= 500m,
- km 14+020 L= 150m,
- km 14+120 L=100m,
- km 14+395 L= 240m,
- km 15+445 L= 400,
- km 15+595 L= 70m,
- km 16+670 L= 70m,
- km 19+420 L= 300m.

It is predicted to change PVC or plastic pipes with new propylene pipes with a minimum flow of 10 bar.

Viaduct 18 “Jabucin dol”

It is planned to change the type of foundation for three pillars of the viaduct 18. It is going to be with deep foundation piling.

Need for construction of local road intersected by the construction of the Expressway

Due to intersecting with the existing local road that is used by the local inhabitants, there is a need to build new connection to adjust the new situation from the construction of the Expressway Rankovce – Kriva Palanka. There is a need to intervene on one location – so called crossing presented below. All previous crossings were secured with the original expressway alignment design.

2.1. Planned materials

The scale of the works is made to cover the positions defined by the technological process for construction of this type of facilities, as well as the requirements of the Investor. The basic raw materials that will be used for the construction of this road junction will be: bitumen emulsion, reinforcement, sand, asphalt - concrete layer, oil for construction machinery, etc. Materials for dislocation of water supply pipes are follow: revision manholes complete with medium type covers, pipes Ø90, Ø75, Ø50, Ø32, sump pipes Ø150, Ø90 etc. Separate Bill of Quantity will be prepared for road junction Rankovce, dislocation of the water supply pipes, changes in the foundation of the viaduct 18 and build new crossroad.

The produced waste such as excess earth materials and biodegradable waste during the project implementation, will be taken over and safely transported for disposal or properly stored and properly used by the contractor same way as the waste from the construction of the expressway – Rankovce – Kriva Palanka.

During the implementation of the project, asphalt and similar materials will be used from the existing asphalt and concrete plants from the construction of the expressway Rankovce – Kriva Palanka.

The quantities and type of construction materials will be determined in the Bill of Quantities, in accordance with the performed geotechnical surveys. During the construction activities, a small amount of construction waste - earthen material from the field cleaning will be generated and if it is not used for the road subgrade, it will be disposed of at the already determined locations of dump sites for excess excavated earth material that are currently in use for the needs of the construction of the expressway Rankovce – Kriva Palanka. The excavated earth for dislocation of the water supply pipes will be reused for covering the pipes. There is no need of new dump site for construction of the junction, dislocation of the water supply pipes and deep foundation of the pillars on the Viaduct no. 18. The Contractor should act in accordance with the Law on Waste Management and all activities should be in accordance with the technical documentation for the Project for construction of expressway A2, section Rankovce – Kriva Palanka given by the Investor PESR and the Public Utility Companies.

3. Location of the additional activities along expressway Rankovce – Kriva Palanka (Lot 1)

The Expressway Rankovce – Kriva Palanka is situated in the north-eastern part of the Republic of North Macedonia, in the municipality of Kriva Palanka and Rankovce. The expressway is divided into two subsections, the first subsection is Kriva Palanka to Dlabochica, while the second subsection Dlabochica to Stracin (Chatal). The subsection Kriva Palanka - Dlabocia at the beginning of the express road passes through hilly landscape, which continues as mountain landscape north of the road line. On the south of the road is the town of Kriva Palanka. In all its length in this part the route is going in parallel buth further away with river Kriva Reka. In this section the road is passing above several valleys that are coming from the mountains on the left side of the road. On km 6+220 the road line is passing below the village T'Iminci and below the village Dlobocica at km 8+000. The villages in this region of the R. Macedonia are scattered, with groups of houses. Around the villages there are gardens and plots. There is agricultural land on both sides of the Kriva Reka. After the village Dlobochica on km 9+750 there is a valley of the Rashka River.

From where up to km 11+320 the road is passing on small hills, after which the road is entering in the Slavisko Pole (field area). Slavisko Pole is representing a landscape unit. It is spread to the end of the express road at km 25+850. The main landscape features in this part of the road are agricultural land, the settlements and river Kriva Reka.

First 2.5 km from the second sub-section Dlabochica to Stracin (Chatal), lot 1, is quite wavy and can be classes as mountainous, the rest km the site is quite hilliness and wavy. The second sub-section is located in the valley of River Kriva reka and runs downstream through a terrain where the implementation of the construction works would be relatively easier. The route goes through hilly terrain intersected with ravines where the Mountain German storm water is drained to the River Kriva basin. On km 15+680 the road line is passing below the village Ginovci and below the village Ljubinci at km 17+000. The villages in this region of the R. Macedonia are scattered, with groups of houses. Around the villages there are gardens and plots. At km 19+207, the express road is intersecting the Rankovska River, north of the settlement Rankovci. River Vetunica is intersecting the express road on km 22+237 Vetunica village is blow the road and Otosnica is above. Blidesh river is on km 23+483 chainage and the road finishing at Stracin with Chatal interchange.



Figure 4 Location of the expressway Rankovce - Kriva Palanka (Lot 1)

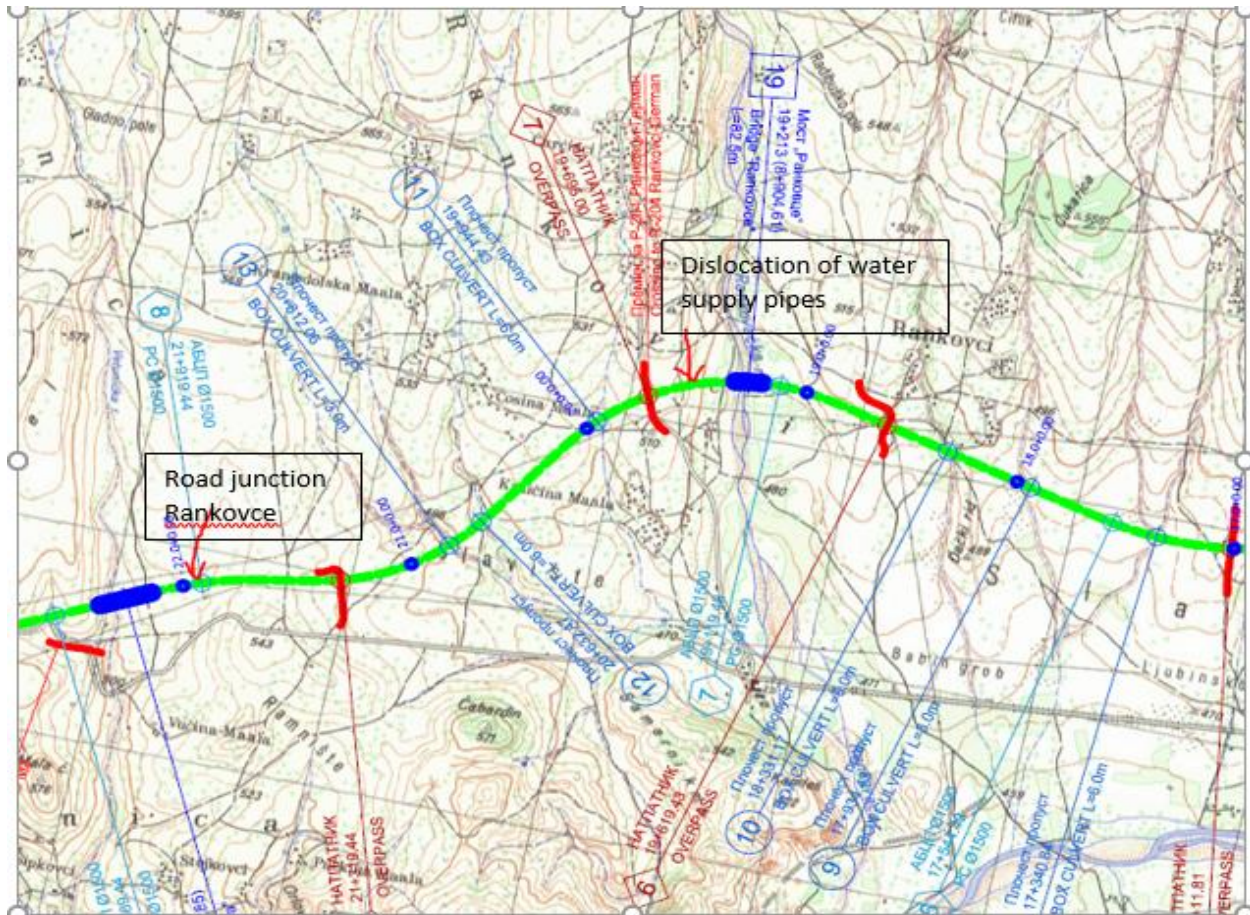


Figure 5 location of the road junction Rankovce and dislocation of the water supply on km 19+420

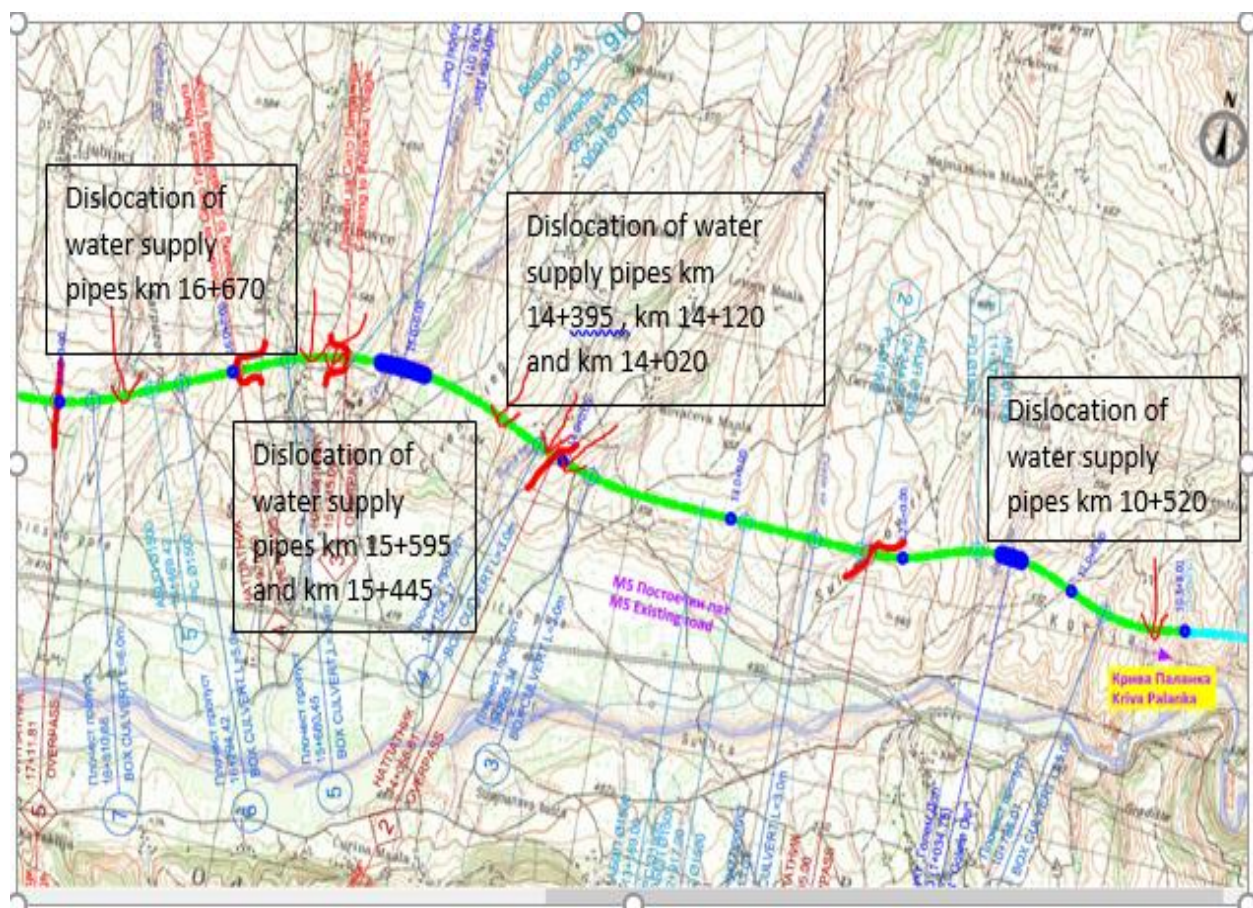


Figure 6 location of the dislocation of water supply on km 16+670, km 15+595, km 15+445, km 14+395, km 14+120, km 14+020, km 10+520



Figure 7 location of the viaduct 18

The location of the crossing road is given in Section 2 - Project description of this document.

Pipe dislocation plan will be prepared beforehand, in which the dynamics of the work will be defined. The pipe dislocation will not be done at once, but rather in different days for separate locations. With this, if the dislocation time is prolonged for unforeseen reasons, only that location will be left without water until the work is completed. New pipes will be cleaned and chlorinated before use. The estimated time for the water supply pipe dislocation per location is 2 hours. After the water pipes has been changed and the water service has been restored the pipes need to be flushed for 30min to 1 hour to ensure safety of the consumers. The general population will be properly notified prior enough any construction activity regarding the dislocation of water supply pipes.

4. Environmental impacts

4.1. Air emissions

The following environmental impacts are expected during the preparatory and construction phase:

- Occurrence of fugitive dust emission from the clearing of the terrain;
- Exhaust gases from construction machinery and transport vehicles;
- Occurrence of fugitive dust emission during loading and unloading of the earth material;
- During the application of the asphalt will occur fugitive emissions of volatile organic compounds;
- Emission of exhaust gasses from the construction machinery and transport vehicles;

In the phase of exploitation of the section, the operational phase, the following environmental impacts are expected:

- Gases emissions from mobile sources of pollution (vehicles).

4.2. Water pollution

Impact on water quality can be expected from:

- From rinsing the ground during heavy rainfall and flooding in surface waters;
- From excesses of improper disposal, untimely removal of small excavated masses;
- Excessive dissolution of stored and used motor oils;
- From leaks of fuels such as oil, water-soluble paints, insulating coatings, lubricating oils and paints (for protection of metal structures, etc.) as well as the treatment of waste materials that occur as a result of maintenance of machinery (parts, waste washing water, used lubricating oils, etc.);
- From washing / maintaining machines near rivers especially Rankovacka and Vetnicka, waters and arable lands.
- From discharge of untreated municipal waste and waste directly thrown into the water;
- From direct discharge of faecal water from construction sites.

The river Vetunica is 110m away from the road junction, no direct negative impacts are expected on it.

Rankovacka river is approximately 400m away from the chainage km 19+420 where the dislocation of the water supply pipes will be.

4.3. Soil pollution

The impact on soil quality such as reduction of organic matter content, soil salinization, soil contamination, soil conversion, loss of soil biodiversity, can be expected from:

- Clearing and levelling the site;
- Removal of humus;
- Removal of vegetation - uprooting of trees;
- Excavation of the ground when making incisions;
- Transport of surplus land and supply of construction materials;
- Inadequate handling of fuels and derivatives used for construction machinery, i.e. tar dispersion and insulating coatings;
- Temporary storage of construction waste at temporary landfills;
- Pollution with municipal waste;
- Excessive pollution as a result of accidents - traffic accidents on the construction site (collisions, overturning of vehicles), fires from burning vehicles, spills of fat and oils, etc.

4.4. Noise and vibration

Increased noise levels are expected during the road junction construction process and dislocation of the water supply pipes; this increase is a result of the operation of the construction machinery. The noise from the construction activities will be temporary, the levels will vary and will have increased intensity during the operation of the vehicles' engines, the noise will be uneven and intermittent, with maximum values during the engagement of the construction machines.

The propagation of sound decreases to the extent that certain objects naturally or artificially created appear on the road. Orographic conditions and natural vegetation are considered as natural obstacles, and various obstacles on the road and subsequent protection with vegetation are considered artificial obstacles.

Significant impacts are not expected on the population because the construction of the expressway Rankovce - Kriva Palanka is already underway. Some discomfort and harassment of the population is expected.

Noise during construction is of short-term nature and will be overcome.

4.5. Waste generation

During the construction activities of the road junction, dislocation of the water supply pipes, build new connection - crossing on the part where new express road cut the existing earthen road providing crossing to help the local communities and foundation change of the Viaduct 18 will be produced the following types of waste: inert waste, biodegradable waste, and hazardous waste.

Inert waste is earth, stones, concrete, etc. Inert waste does not cause chemical contamination of the environment, but has an impact on the landscape. Excess soil and earth material will be disposed on

the existing dump site for excess excavated soil material for the needs of construction of the expressway Rankovce - Kriva Palanka.

Solid and liquid waste produced by the workers will be consisted by biodegradable waste from food, plastics, paper, glass, metal, and fecal matter. If this type of waste is not properly managed, it will cause pollution and negative visual impact to the site.

Biodegradable waste is from the remains of trees, roots and leaves of the present vegetation. This type of waste should not end up in watercourses because its decomposition will cause water eutrophication. This waste will be disposed on the existing dump site for the needs of construction of the expressway Rankovce - Kriva Palanka.

Hazardous waste will be consisted mainly of petroleum products, lubricants and oils for the vehicle and construction machinery, bituminous substances containing tar, as well as used packages of these substances. Hazardous waste, if it is not properly handled and landfilled, causes pollution to all environmental media, especially to soil, water and groundwater, and has toxic effects on the wildlife.

For proper waste management, waste produced by the workers, and inert waste which won't be reused, have to be disposed on landfill for municipal solid waste. Public Communal Enterprise (PCE) "Chist den" - Rankovce is responsible for the collection and disposal of municipal waste for the settlements in municipality of Rankovce.

Hazardous waste should be collected by company specialized for hazardous waste management.

4.6. Biodiversity

Negative impact on the flora and fauna is expected from cleaning the vegetation. Compaction of the ground due to the manipulation of construction machinery will be reflected in altered conditions for plant growth and development.

Due to the increased noise level during the construction phase, it is possible disturbance of local fauna and migration from its micro location. The time of construction is limited so that when periods of high noise and vibration will complete, the fauna will return to the micro locations. But the local fauna is adapted to increased noise level because of the construction work on the expressway Rankovce - Kriva Palanka. The construction site should be limited to a minimum area for road work and storage of material / equipment should be within construction site in order to avoid unnecessary loss of biotypes.

Taking into account the fact that we are already working on the expressway these impacts will be of low intensity and will not be of great importance to the fauna, ie in the course of construction activities will be temporarily disturbed, but with the completion of things, these influences will disappear.

There are no endangered species of flora and fauna.

4.7. Socio – Economic Impact

It is important to bear in mind that for the realization of the junction, there is a need for land acquisition of nineteen land parcels. For dislocation of the water supply pipes and viaduct 18 there will be no need for land acquisition. For building of the new connection - crossing on the part where the new express road cuts the existing earthen road on km 20+045, land acquisition of land parcels is needed. Therefore, an abbreviated RAP will be prepared.

Negative impact of the work is permanent dislocation of the water supply pipes. Positive impact from dislocation of the water supply pipes will be that the affected population will get new water supply pipes. The affected population will not be left without water for more than 2 hours. New pipes will be cleaned and chlorinated before use. The estimated time for the water supply pipe dislocation per location is 2 hours. After the water pipes has been changed and the water service has been restored the pipes need to be flashed for 30min to 1 hour to ensure safety of the population. The general population will be properly notified prior any construction activity in regard to the water pipes. For dislocation of the water supply pipes there will be no need for expropriation.

Negative impact is that the new expressway intersects with the existing road that local population is using in daily agricultural activities and access to local properties. Positive ones are the improvement of the selected community eathern roads with asphalt or gravel material. Communitie benefiting from this upgrade of the crossing road is Rankovce.

The construction of the road junction Rankovce has a positive impact on the society, especially in the terms of style and life quality of the community and the environment. According to the data from the Makstat database of population (30.06.2020), there are 3622 inhabitants in the Municipality of Rankovce, who will mainly benefit from the junction construction and provision of direct link to the expressway.

The socio-economic aspect during the road junction construction process will not cause negative impacts, because the project concerns the connection of the local population from the surrounding settlements (Rankovce, Vetunica, Otoshnica, etc.) with the designed express road Rankovce - Kriva Palanka to enable their proper and proximate connection to the expressway.

The construction of the road junction will enable faster and more secure access to some places in the municipalities which will positively impact on the development of the economy. Namely, this construction will support the further growth of the commercial entities located in the municipality of Rankovce and foster the creation of new ones. In general, this construction of the junction will positively affect the following sectors: transport of people and goods, agriculture, tourism etc.

Most of the local traffic in the municipality of Rankovce will be diverted to the constructed road junction so that transiting through the express road will be avoided. In terms of this, the traffic safety of the local population will be increased. At the same time the transit traffic through the constructed road junction will be both faster and more efficient.

In general, the constructed junction Rankovce will improve the overall safety.

This project has various beneficiaries: residents, employees, schoolchildren, private car owners, taxi-drivers, organized private transport operators, truck operators, businesses, motorcyclists, visitors, tourists, etc.

The constructed road Junction Rankovce will give the residents an immense access to the local services such as health care, social work centres which cover the area of the affected settlements and municipality.

The involvement and continuous interaction with different stakeholder groups is crucial to increase acceptance of the planned measures and for their successful implementation.

Public and especially stakeholders will be able to use the grievance procedure. All the information regarding the grievance procedure will be widely disseminated to affected municipality and affected local government.

The Grievance Form (in Macedonian and English) will be made available on the web site www.roads.org.mk and all the concerned municipalities will receive pre-printed forms to be readily-available for the public. A worker`s Grievance Mechanism will also be established for the employees of construction companies (as a separate system).

PESR is truly committed to receiving and responding to all comments or complains, either verbally or in writing in relation to the Project. PESR recognizes that consultation is an ongoing process and different concerns may arise as the project moves into construction phase. All comments and complaints will be forwarded and processed by the responsible person of the PESR services.

Mr Joze Jovanovski

Tel: + 389 (0) 78 242 319

e-mail: j.jovanovski@roads.org.mk; contact@roads.org.mk

Address: Public Enterprise for State Roads

Dame Gruev 14, 1000 Skopje, Republic of North Macedonia

Web: www.roads.org.mk

The response time for grievances will be in accordance with national legislation for this subject. Comments on the Project, and complaints, can also be submitted to the responsible contact person of the municipality of Rankovce.

Municipality of Rankovce

Tel: + 389 (0) 31 380 440

Address: Opstina Rankovce, Rankovce 1316

It is recommended that all grievances should be processed by a Commission which would be composed of at least three persons: representatives of the Investor (PESR), local self-government and the local population. The names and contact information of the authorized persons from PESR and the municipality should be also indicated on the boards which are posted before the beginning of the construction activities. The inhabitants of the affected municipalities are recommended to elect a person in charge of the grievances on the side of their village. The local inhabitants will be able to submit their comments and complaints to that appointed person. Being a part of the Commission, that person would be also to inform on the course of the grievance procedure.

Other complaints regarding the environmental impact and the social environment will be entered in the complaints record.

The Grievance Form (in Macedonian and English) will be made available on the web site www.roads.org.mk and all the concerned municipalities will receive pre-printed forms to be readily-available for the public. A worker`s Grievance Mechanism will also be established for the employees of construction companies (as a separate system).

PESR will monitor the entire process of comments and complaints and the information will be transposed in the corresponding reports, which will be prepared and posted on its website. PESR is obliged to respond to all complaints according to procedures prescribed in national legislation.

In their complaints, the stakeholders may use legal assistance provided by the North Macedonian legislation.

This ESMMP will be published on the PESR website www.roads.org.mk

4.8. Community and Occupational Health and Safety

The Contractor is obligated to sign a Contract with local Medical Care Facility to ensure sufficient provision healthcare for the engaged workers.

If any of the employees is injured and requires medical treatment, Health and safety service shall report the incident:

- Procedure for injury at work – If any employee of a contractor is injured, a documentation for the incident shall be prepared according to the procedures of the contractor, however, copies from the documents must be delivered to Health and safety service within 24 hours after the accident. In case of an accident the procedure goes according to the procedures of the contractor.

General instructions in case of work:

1. to provide first aid;
2. to follow the "Occupation, Health and Safety Plan";
3. to report the work damage;
4. to follow the agreed clauses in case of injury.

Medical examinations of the employees

1) According to article 22 from the Law for safety and health at work (Official Gazette of RM 53/13), the employer must provide medical examinations for the employees at least every 24 months, i.e. 12 months for employees who work at high risk positions.

2) The type, means, and the volume of the medical examinations are prescribed by the minister appointed for works from the area in health, in accordance with the minister appointed for works from the area of labor.

The medical examinations for the employees are carried out regularly according to the legal requirements. The Contractor's Human Resources Department is responsible for keeping the records for the medical examinations for all employees.

In their complaints, the stakeholders may use legal assistance provided by the legislation of North Macedonia.

4.9. Impact on cultural and historical monuments and archeological sites

There are no significant archeological and historical sites along the route monuments. The Law on Protection of Cultural Heritage will be respected if it is encountered some archeological facts, sites, etc., construction activities will be stopped, and will be a notified competent institution.

5. Table 1 Environment and Social Management Plan (ESMP)

This ESMP shall form part and follow the implementation of the overall ESMP for Rankovce – Kriva Palanka expressway and it is prepared to justify the E&S requirements arising from the additional works along the expressway section (Lot 1) described above.

Phase	Issue	Mitigation measures	Cost		Responsibility		Comments
			Install	Operate	Install	Operate	
Preparation	<i>Material supply chain</i>	Contractor needs to provide materials (sand gravel, and asphalt) from the facilities (quarries and asphalt plant) that have obtained IPPC permissions from the MoEPP	To be proposed by the Contractor in the General item of the BoQ		Contractor in coordination with the Engineer	Contractor Engineer	Providing materials from facilities that already have obtained IPPC Permit, will ensure maximal protection to all environmental components
Construction	<p><i>Air quality pollution</i></p> <p>Dust occurrence during opening and moving along construction site</p> <p>Fugitive emission of dust, emission of exhaust gases from construction mechanization</p>	<ul style="list-style-type: none"> - Use of standardized fuels for mechanization, - Minimizing emissions through regular spraying the ground with water during the construction works, establish a dust control program: In the vicinity of settlements or where the local population might be affected through material transport the contractor will be required to regularly water haul routes. This will also apply to temporary access routes to aggregate sites, - Using technically correct machinery, - Clean truck's tires before entering and using public roads, - Route planning and factor of loading and unloading to reduce of fuel consumption and emissions of exhausted gases and fugitive dust emissions, -Avoid working on machinery in so called "idle", turn off mechanization when is not necessary, - Trucks which carrying material 	To be proposed by the Contractor in the General item of the BoQ	Contractor Engineer	Contractor Engineer	/	

Additional Environmental and Social Management and Monitoring Plan – ESMMP

Phase	Issue	Mitigation measures	Cost		Responsibility		Comments
			Install	Operate	Install	Operate	
		<p>to be covered.</p> <p>-Using trucks by not exceeding their load capacity; Trucks shall be covered to minimize dust and material spillage,</p> <p>- Dust suppression during construction in dry periods</p>					
Construction	<p><i>Soil pollution</i></p> <p>Removal of humus; • Removal of vegetation - uprooting of trees;</p> <p>Inadequate handling of fuels and derivatives used for construction machinery, i.e. tar dispersion and insulating coatings;</p>	<p>- Provide minimal size of work site,</p> <p>- Top soil shall be stripped and be reused. Long-term stockpiles of topsoil will immediately be protected to prevent erosion or loss of fertility.</p> <p>- Termination of construction activities in case of uncontrolled spills of fuel, oil, lubricants and other chemicals, sprinkle with sand and removal of polluted soil layer. Polluted soil layer would be treated as a hazardous waste,</p> <p>- Proper handling of lubricants, oil, fuel.</p> <p>- Implementation of the measurement from ESMMP of the express road Rankovce – Kriva Palanka</p> <p>- After finishing the construction works, site need to be properly clean.</p> <p>- Construction work must not go on in conditions of torrential rains.</p>	To be proposed by the Contractor in the General item of the BoQ	Contractor Engineer	Contractor Engineer	/	
Construction	<p><i>Water pollution</i></p> <p>From direct discharge of faecal water from construction sites</p>	<p>- Placing mobile toilets on certain places along the section and contracting with the company which will undertake and clean them,</p> <p>-Implementation of waste management procedures as given in this Table (see waste management). The waste,</p>	To be proposed by the Contractor in the General item of the BoQ	Contractor Engineer	Contractor Engineer	-Do not organize a construction site, change oil and service mechanization in a zone of 100 meters along the bed of the river Vetunicka,	

Additional Environmental and Social Management and Monitoring Plan – ESMMP

Phase	Issue	Mitigation measures	Cost		Responsibility		Comments
			Install	Operate	Install	Operate	
	<p>From excesses of improper disposal</p> <p>From washing / maintaining machines near rivers</p> <p>From leaks of fuels such as oil, water-soluble paints, insulating coatings, lubricating oils and paints (for protection of metal structures, etc.) as well as the treatment of waste materials that occur as a result of maintenance of machinery (parts, waste washing water, used lubricating oils, etc.);</p>	<p>including the waste from the mobile toilets has not to be disposed on the riverbanks and waters.</p> <ul style="list-style-type: none"> - Disposal of wastes, materials, as well as filling and parking of vehicles is restricted within 100 m of water drainage zones; - Washing of the vehicles or any equipment in the river Vetunicka, Rankovacka, or any other temporary ponds will be strictly forbidden. The contractor shall instruct his workforce accordingly. Prevent washing of construction mechanization and vehicles near water especially along the river Vetunicka and in addition to arable land. - Proper handling of lubricants, oil, fuel. - Barrels with materials for work (oils, oil, etc.) should be accommodate in certain brackets safe areas in place of build; also all barrels (oils, oil, etc.) should have inlet control taps and should be properly marked; - Fuel, oil and other liquid chemicals storage facilities, should be put on a solid surface. 					Rankovacka, temporary ponds and arable land.
	<i>Waste pollution and management</i>	<ul style="list-style-type: none"> - Contractor to prepare Waste Management Plan for the project site <p>Contracting with authorized companies for collecting and further management of different types of waste;</p> <ul style="list-style-type: none"> - Separation of different types of waste, - Implementation of key principles for 	To be proposed by the Contractor in the General item of the BoQ	Contractor Engineer	Contractor Engineer	Contract with authorized legal entities. Additional excavated earthen materials	

Additional Environmental and Social Management and Monitoring Plan – ESMMP

Phase	Issue	Mitigation measures	Cost		Responsibility		Comments
			Install	Operate	Install	Operate	
Construction	<p>Possibility for pollution of all environmental media as a result of improper management of municipal, construction and hazardous waste</p> <p>Possibility for pollution of the soil and underground waters, as well as the re-usable earth and rock material, if on the temporary disposal site are disposed waste materials</p>	<p>sustainable waste management according Waste Management Law;</p> <ul style="list-style-type: none"> - Placement of appropriate containers for collection of municipal waste on location, - Municipal waste that will be created on site (first needs to be selected) then collected in bags charging to tie and store in the nearest placed containers. -Waste produced by the workers (communal waste) to be handled to the PCE Chist Den – Rankovci - Inert waste - excess soil to dump to the already approved places for construction needs on the Expressway Rankovce - Kriva Palanka. The surplus earthen material from excavation works on all additional works covered with this ESMP – mainly by road junction Rankovce and water supply pipes dislocation shall be placed on the existing approved dump areas for the expressway. - The inert waste of the water pipe dislocation should be disposed on the location for inert waste approved by the municipality of Rankovce. - Part of the construction waste to be reused, the other part of the construction waste which cannot be reused, to be landfilled with appropriate contract/approval - Hazardous waste to be undertaken by the authorized company for hazardous waste management, covered with sand spieled oil and then collected and provide to authorized company for hazardous 					<p>from dislocation of water supply pipes and road junction shall be disposed on the existing approved depo areas for the expressway</p>

Additional Environmental and Social Management and Monitoring Plan – ESMMP

Phase	Issue	Mitigation measures	Cost		Responsibility		Comments
			Install	Operate	Install	Operate	
	Incidental leakages of fuel and hydraulic oils from construction and transport vehicles	<p>waste</p> <ul style="list-style-type: none"> - Regular clearing of septic tanks from worker's camp and other mobile toilets to prevent outbreak of diseases. - Concluding a contract for procurement of medical equipment and a contract for disposal of medical waste from a construction site; Medical waste generated during the provision of care for sick workers should be safely collected and disposed of in certain closed containers - containers or bags and treated and disposed of in accordance with the relevant requirements. If medical waste needs to be incinerated, it has to be done within shortest time frame as possible. Waste should be reduced so that only the smallest amount of waste is incinerated. - Local earthen crossing roads shall be upgraded with crash stone or similar materials in coordination with local community representatives. 					
Construction	<i>Noise and vibrations from construction activities</i> <i>Increased noise levels</i>	<ul style="list-style-type: none"> - Limit activities to daylight working hours from 8 am-7 pm, - Planning the construction procedures due to minimizing emitted noise (in time and intensity), - Turning off the engines of vehicles and construction machinery when they are not in use, - Information for the local population about the project activities. 	To be proposed by the Contractor in the General item of the BoQ	Contractor Engineer	Contractor Engineer	Control of technical features of the construction mechanization.	
	Impact on Biodiversity Removal of vegetation cover and tree stands	<ul style="list-style-type: none"> - Provide minimal size of work site; minimal removal of the vegetation alongside the section during the preparation activities; - Reuse of topsoil as appropriate and 	To be proposed by the Contractor in the General item of the BoQ	Contractor Engineer	Contractor Engineer	-Do not dispose waste on and near river Vetunicka,	

Additional Environmental and Social Management and Monitoring Plan – ESMMP

Phase	Issue	Mitigation measures	Cost		Responsibility		Comments
			Install	Operate	Install	Operate	
Construction	Illegal hunting	<p>replant any lost vegetation (native species only);</p> <ul style="list-style-type: none"> - Implementation of waste management procedures as given in this Table (see waste management); - Removal of the destroyed vegetation to be manual / mechanical, without using of pesticides. - Temporary waste disposal sites along the route not to be created, - On the river bed of Vetunicka river in vicinity of the section any kind of material disposal (construction material, waste etc.) and placement of temporary objects is forbidden. - Hunting and fishing, collecting forest berries, bird eggs etc, by the workers is not allowed. - Prohibition to lighting open fire. 					Rankovacka, Jabucin dol, temporary ponds and arable land.
Construction	Impacts on Cultural Heritage,	<p>Contractor to develop Chance Find Procedure</p> <ul style="list-style-type: none"> - In the event of the unexpected discovery of archaeological objects the Contractor should immediately notify local and archaeological authorities and follow their directions in accordance with the provisions of Article 65 of the Law on Protection of cultural heritage ("Official gazette of RM "no: 20/04 and no: 115/07). - Construction works would be stopped and the appropriate local executive authority would be immediately informed. Works will resume only after appropriate measures have been taken as requested by the appropriate authority, and confirmation has been received from them that works may 	To be proposed by the Contractor in the General item of the BoQ	Contractor Engineer	Contractor Engineer	/	

Additional Environmental and Social Management and Monitoring Plan – ESMMP

Phase	Issue	Mitigation measures	Cost		Responsibility		Comments
			Install	Operate	Install	Operate	
		continue.					
Preparation / Construction	<p>Socio – economic impact</p> <p>Disruption in water supplies.</p> <p>Loss of land, including crops and trees.</p> <p>Loss of access roads</p>	<p>-a plan for dislocation of the water supply pipes to be made in which the method of replacement will be given and where it will be stated that the dislocation will not be performed in one day. New pipes will be cleaned and chlorinated before use. The estimated time for the water supply pipe dislocation per location is 2 hours. After the water pipes has been changed and the water service has been restored the pipes need to be flashed for 30min to 1 hour to ensure safety of the population. The general population will be properly notified prior any construction activity regarding the water pipes. For dislocation of the water supply pipes there will be need for expropriation.</p> <p>- Abbreviated RAP will be prepared for the road junction Rankovce and other areas needed for land acquisition right after the approval of Amended Infrastructure design. The abbreviated RAP will be prepared and implemented by the Investor.</p>	To be proposed by the Contractor in the General item of the BoQ		<p>Contractor</p> <p>Engineer</p> <p>PESR for the abbreviated RAP</p>	<p>Contractor</p> <p>Engineer</p> <p>PESR for the abbreviated RAP</p>	
Construction	<p><i>Material transport</i></p> <p><i>Increased noise levels</i></p> <p>Increased accident risk from traffic diversions</p>	<p>- In the vicinity of settlements material transport will be restricted to between 7.00h to 21.00h hours</p> <p>- Implementation of waste management procedures and air quality protection as given in this Table (see waste management, air quality protection);</p> <p>- Implementation of Traffic Management plan,</p> <p>- Implementation of waste management plan.</p>	To be proposed by the Contractor in the General item of the BoQ		<p>Contractor</p> <p>Engineer</p>	<p>Contractor</p> <p>Engineer</p>	/
		<p>- Experienced and appropriately skilled and licensed personal will be engaged and will also receive Occupational Health and Safety training.</p> <p>- Contractor to organize training before construction activities starts;</p>	To be proposed by the Contractor		<p>Contractor</p> <p>Engineer</p>	<p>Contractor</p> <p>Engineer</p>	

Additional Environmental and Social Management and Monitoring Plan – ESMMP

Phase	Issue	Mitigation measures	Cost		Responsibility		Comments	
			Install	Operate	Install	Operate		
Construction	Worker's health and safety issues	<ul style="list-style-type: none"> - The contractor must provide a one-day personal health training and methods how workers to identify early symptoms of a potential threat, not only for personal lives, but also for the local community living in the project area. - Provide workers with safety instructions and appropriate protective gear such as protective clothing, safety boots, helmets, gloves, goggles, ear protection, etc., All workers must wear protective gear during construction, including helmets. - The contractor must provide drinking water for employees in accordance with the national quality standards. Before the beginning of the worksite operations, the contractor must seek approval on the source of drinking water from the local competent authority. - Septic tanks, mobile toilets and other sanitary facilities must be cleaned daily in order to prevent outbreaks of diseases. <p>COVID - 19</p> <ul style="list-style-type: none"> - Providing personal protective equipment for all workers at the project site in accordance with the proposed measures: keeping records of cases infected with COVID 19, supporting quarantined workers and regularly informing the competent institutions in case of occurrence of an infected person with COVID 19. 	in the General	item of the	BoQ			Plan on Safety and Health at Work will be prepared by the Contractor

Additional Environmental and Social Management and Monitoring Plan – ESMMP

Phase	Issue	Mitigation measures	Cost		Responsibility		Comments
			Install	Operate	Install	Operate	
		<ul style="list-style-type: none"> - Start-up checks (measuring and recording the temperature of all workers entering and leaving the site); - General and personal hygiene, - Cleaning and disposal of waste, - Training and communication with workers, - Communication and contact with the community, - Providing local medical and other services (disinfection, etc.) - Organizing education of all workers for implementation of the recommendations, measures and protocols for protection from COVID-19; - Placing posters and signs with the measures and recommendations from the government in a visible place that is accessible to all in the local languages; - Establish a hygiene protocol with best practice; - Providing protective equipment and disinfectants (masks, soap gloves, alcohol; -Observance of the measures for protection from the CORONA virus (recommended distance); - Appropriate examination of employees with symptoms; - The contractor should report sick employees through reports and monitor them continuously; 					
		<ul style="list-style-type: none"> - Informing the public about the construction activities: part of the day when they will be implemented, 			Contractor	Contractor	

Additional Environmental and Social Management and Monitoring Plan – ESMMP

Phase	Issue	Mitigation measures	Cost		Responsibility		Comments
			Install	Operate	Install	Operate	
Construction	<i>Community safety issues</i>	<p>duration etc.,</p> <ul style="list-style-type: none"> - Limit activities to daylight working hours. - Establishing complaint mechanism (Grievance Redress Mechanism) and involving the stakeholders (local communities and workers) before and during the construction of the road section. There is a regular practice of raising local awareness on the risks of illegal crossing practice. Continuously, local residents, particularly the youth, must be educated and reminded on the possible consequences of the disrespect of the security infrastructure and traffic signs along the construction site. - Within the framework of the regular campaign for raising local awareness on the risks of illegal crossing practice, prevention measures for spread of diseases will be involved. - A Social Assistance Action Plan will be created during construction and the Inter-Municipal Centre for Social Work will also be involved, - Local community will be informed for upgrade of local access roads and the solution will be made with their involvement - Local community will be informed in timely manner for dislocation of water supply pipelines. 	To be proposed by the Contractor in the General item of the BoQ		Engineer	Engineer	/

Table 2 Monitoring Plan (MP)

This MP shall form part and follow the implementation of the overall MP for Rankovce – Kriva Palanka expressway and it is prepared to justify the E&S requirements arising from the additional works along the expressway section (lot 1) described above.

Costs for the MP’s implementation shall be borne by the Contractor and presented in the BoQ, as per the requirements below.

Phase	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored? Frequency	Costs		Responsibility	
					Install	Operate	Install	Operate
Construction phase								
Road safety Road safety (Increased vehicle speed)	Traffic signs; vehicle speed limitation signalization, replacement of the new road equipment)	At and near job site	Inspection; Observation; Comparison with Contractor's method statement	Before works start and once a week at peak and non-peak periods; during construction period once per week in the evening / in the dark			Contractor	Contractor Engineer
Worker's safety and health Safety of the employees, visitors on site	Availability of appropriate personal protective equipment	Job site	Inspection; Interviews;	During construction phase On daily bases Unannounced inspections during construction and upon complaint			Contractor	Contractor Engineer

Phase	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored? Frequency	Costs		Responsibility	
					Install	Operate	Install	Operate
Air pollution (fugitive emission of dust, emission of exhaust gases from construction mechanization)	Exhaust fumes (CO, NO _x , SO ₂ , PM), Dust	On project Site where is the road junction Rankovce, viaduct 18 and on the chainage of the dislocation of the water pipes and crossing road	Visual inspection; Measurements if required by concern public or authorities	Unannounced inspections during work			Contractor	Contractor Engineer
Potential pollution of soil and surface and groundwater/ contamination of surface water	Soil quality Water quality	On project Site where is the road junction Rankovce, places where will be dislocation of the water pipes, river Vetunicka, Rankovacka, viaduct 18 Jabucin dol, temporary ponds, arable land and crossing road.	Inspection; Observation; Visual inspection for spills and leaks which might impact soil quality (and potentially groundwater), Stockpiling and means of protection.	Upon preparation of the construction site, after stockpiling and after completion of works on shoulders.			Contractor	Contractor Engineer

Phase	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored? Frequency	Costs		Responsibility	
					Install	Operate	Install	Operate
Waste generation (municipal waste from engaged employees, demolition waste etc.)	Implementation of Waste Management Plan	On project Site where is the road junction Rankovce, places where will be dislocation of the water pipes, river Vetunicka, Rankovacka, Jabucin dol, temporary ponds arable land, and crossing road	Visual inspection, contracts with authorized legal entities for waste handling in compliance with national legislation	During construction activities			Contractor	Contractor Engineer
Noise and vibrations	Noise levels (in dB)	On project Site where is the road junction Rankovce, places where will be dislocation of the water pipes and crossing road	If the junction is close to houses, <100 to perform at least one noise measurement during the construction nearby receptors.	During construction activities During material delivery			Contractor	Contractor Engineer

Phase	What parameter is to be monitored?	Where is the parameter to be monitored?	How is the parameter to be monitored?	When is the parameter to be monitored? Frequency	Costs		Responsibility	
					Install	Opeate	Install	Operate
Material supply Asphalt Stone Sand and gravel	Possession of official approval or valid operation license	Asphalt plant Stone quarry Sand and gravel borrow pit	Inspection	During construction activities Before work begins			Contractor	Contractor Engineer
Material transport	Truck load covered	Job site / haul routes Job site / haul routes Job site / haul routes	Supervision Supervision spot checks Supervision	Unannounced inspections during work			Contractor	Contractor Engineer

6. Roles and responsibilities for implementation of ESMMP

Company/Unit	Responsibilities
<p align="center">International Project Management Unit - IPMU (PESR)</p>	<p>In coordination with the EPSA Unit in the PESR, this PIU will be responsible for overseeing the project implementation, for monitoring the overall project implementation, including environmental compliance of the project. IPMU will have the final responsibility for environmental performance of the project, during project implementation. Specifically, IPMU will: i) closely coordinate with local authorities in the participation of the community during project preparation and implementation; ii) monitor and supervise ESMMP implementation including incorporation of ESMMP into the detailed technical designs and bidding and contractual documents; iii) be in charge of reporting on ESMMP implementation to the WB.</p>
<p align="center">Environmental Protection and Social Aspects Unit (EPSAU) (PESR)</p>	<p>This Unit is responsible for monitoring the implementation of WB environmental safeguard policies in all stages and process of the project. Specifically, this unit will be responsible for:</p> <ul style="list-style-type: none"> i) reviewing the subproject: ESMMP prepared by consultants to ensure quality of the documents; ii) helping IPMU incorporate ESMMP into the detailed technical designs and civil works bidding and contractual documents; iii) helping IPMU incorporate responsibilities for ESMMP monitoring and supervision into the TORs, bidding and contractual documents for selection of Contractor, Supervision, Monitoring contractor iv) providing relevant inputs to the consultant selection process; v) reviewing reports submitted by the Contractor, Supervision, Monitoring contractor; vi) conducting periodic site checks; vii) advising PESR management on solutions to environmental issues of the project; and viii) preparing environmental performance section on the progress and review reports to be submitted to the WB.
<p align="center">Contractor</p>	<p>Based on the approved ESMMP, the Contractor will be responsible for establishing a site-specific ESMMP for the project site, submit the plan to PESR and Supervision Contractor for review and approval before commencement of construction. In addition, it is required that the Contractor get all permissions for construction (traffic control and diversion, excavation, labor safety, etc. before civil works) following current national regulations.</p> <p>The Contractor shall be required to appoint a competent individual as the contractor 's on-site Health, Safety and Environmental Officer (HSEO) who will be responsible for monitoring the</p>

	Contractor 's compliance with the ESMMP requirements and the environmental specifications.
Supervision Engineer	The Supervision Engineer will be responsible for supervising and monitoring all project activities and for ensuring that Contractor comply with the requirements of the contracts and the ESMMP. The Supervision Engineer shall engage sufficient number of qualified staff (e.g. Environmental Engineer) with adequate knowledge on environmental protection and construction project management to perform the required duties and to supervise the Contractor's performance.
Ministry of Environment and Physical Planning (MoEPP)	MoEPP is responsible for issuing a decision for approval of the ESIA and monitoring of the state of implementation of all mitigation measures for environmental protection described in the ESIA Study.

The Contractor need to prepare quarterly and annual environmental and social aspects reports to the Engineer, PESR and WB.

ANNEXES

Annex 1 Grievance Mechanism Form

COMPLAINT FORM A1 / Образец за жалба -Приговор A1	
Complaint No./Жалба-Приговор бр.	
Date/Датум:	
Name and surname / Име и Презиме	
Contact info/Контакт податоци:	
Indicate the way in which a person wants to be contacted-mail, phone... / Наведете на кој начин странката сака да биде контактирана – по пошта, телефон	
Confidential/Доверливо Yes-Да /No-Не	
The Complaint is delivered (underline the way of delivering the complaint): in person, by phone, during the local communitys meeting, by e-mail, other way (describe) Жалбата/приговорот е доставен (подвлечете го начинот на доставување на жалбата): лично, по телефон, на состанок на локалната заедница, електронска пошта, на друг начин (опишете)	
Complaints Description (details) / Опис на жалбата (детали за истата)	
What is considered to be the solution to this problem? / Што сметате дека е решение за овој проблем?	
REPLY / ОДГОВОР:	
Date / Датум:	
Undertaken activities / Превземени активности:	
Name and Surname of the office Clerk/ Име и Презиме на службеното лице:	
Forwarded to the Client / Проследено до Инвеститорот:	
Date / Датум:	
Letter No./Бр. на писмото:	
Forwarded to the Contractor / Проследено до Изведувачот:	
Date / Датум:	
Letter No./ Бр. на писмото:	
Date/Датум:	Signature/Потпис:

