Environmental and Social Impact Assessment

CONSTRUCTION OF NEW MOTORWAY SECTION DEMIR KAPIJA - SMOKVICA AS A PART OF PAN - EUROPEAN CORRIDOR X

ENVIRONMENTAL and SOCIAL ACTION PLAN

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Contents

References and Background Studies

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Abbreviations

ASR	Agency for State Roads
EBRD	European Bank for Reconstruction and Development
EIA	Environmental Impact Assessment
ESAP	Environmental and Social Action Plan
EU	European Union
LACP	Land Acquisition and Compensation Plan
LSGU	Local Self Government Unit(s)
MEPP	Ministry of Environment and Physical Planning
MTC	Ministry of Transport and Communications
RAP	Resettlement Action Plan
RM	Republic of Macedonia
SEP	Stakeholder Engagement Plan
VOC	Vehicle Operating Costs

1 Environment and Social Action Plan

1.1 Overview

The project's Environment and Social Action Plan (ESAP) in standard EBRD format includes a set of mitigation and monitoring measures, criteria for their successful implementation and institutional measures to be taken during project implementation to eliminate adverse environmental and social impacts, offset them, or reduce them to acceptable levels.

The plan also includes the actions needed to implement these measures. The ESAP is an essential element of the environmental assessment (EA) process. It has been developed based on (i) identification of the set of mitigation measures to potentially adverse impacts, (ii) determination of requirements for ensuring that those measures are made effectively and in a timely manner, and (iii) description of the means / resources for meeting those requirements.

The ESAP provides an essential link between the impacts predicted and mitigation measures specified within the EA and implementation and operational activities. It outlines the anticipated environmental and social impacts of the project, the measures to be undertaken to mitigate these impacts, institutional responsibilities for mitigation and the time frame.

The ESAP has been formulated in such a way that it is easy to use. The following aspects are addressed within the ESAP:

- *Description of mitigation measures.* The ESAP identifies feasible and cost effective measures to reduce impacts to acceptable levels. Each mitigation measure is briefly described with reference to the impact to which it relates and timeline under which it is required.
- *Description of monitoring program:* Environmental performance monitoring has been designed to ensure that mitigation measures are implemented and have the intended result. The monitoring program clearly indicates the linkages between impacts identified during the EA process, parameters to be measured, methods to be used, monitoring locations, and frequency of measurements and timeline of the monitoring activities.
- *Institutional arrangements:* Responsibilities for mitigation are defined. The ESAP identifies arrangements for coordination between the various actors responsible for mitigation.

The ESAP will be implemented during the construction and operaton of the project “CONSTRUCTION OF NEW MOTORWAY SECTION DEMIR KAPIJA - SMOKVICA AS A PART OF PAN - EUROPEAN CORRIDOR X” in Macedonia.

The environmental management section contained in the EA main report details, as far as possible at present stage of planning, the mitigation measures as well as institutional responsibilities to be taken during project implementation. This includes subsequent project activities: detail design process, construction and operation.

It will be task of the appointed contractors to further detail the issues addressed in the EA report, depending on the progress of the project planning, until construction (establishment of construction zones, temporary facilities for work force, details for storing the construction and other materials, the access roads for transport, waste management and waste water management issues, etc).

It is recommended to the Agency for State Roads that environmental issues addressed in the EIA are used for detailing of the environmental specifications in the tender documentation for selection of the construction contractor(s).

Furthermore, each requirement that will result from the process of obtaining decision by the municipalities of Demir Kapija and Gevgelija and other competent bodies, will have to be included in the final documentation for construction. This mainly includes issues related to the environmental related responsibilities of the LSGU, including non-hazardous and construction waste management and disposal, water supply issues, communal waste water management and utilization of local road network.

The defined requirements for protection of the environment will be an obligatory part of the contracting conditions for the construction contractor who will be also obliged to adopt and follow the good management and environmental practices during construction activities and maintain the minimum possible impact on the vegetation, soil, ground and surface waters, air, wild life and landscape, including the impact on the inhabited places and local communities.

With the aim of ensuring effective implementation of the ESAP, the Agency for State Roads will appoint staff to undertake environmental supervision and monitoring during the construction phase. Key responsibilities of this staff will be to ensure that measures and control as defined in the works contract and issued permits and decisions are applied in an appropriate manner. This also includes coordination with Adminsitration for Environment Protection within the MEPP and the Cultural Heritage Protection Office (CHPO) within the Ministry of Culture.

Environmental management during the operational phase of the planned highway will generally consists of monitoring the efficiency of measures incorporated during the design and monitoring the operational performance. The operation management and monitoring will be organized and conducted by the Agency for State Roads.

ESAP Review and Amendment

The Agency for State Roads will regularly review the ESAP and identified management action plans to reflect any changes in the project implementation and organization. Upon any amendment, the amended ESAP will be communicated to all relevant parties and stakeholders.

1.2 Management Action Plans under the Environment and Social Action Plan

In addition to the suggested mitigation measures, following management action plans will be developed and implemented during the project life cycle:

a) For implementation during construction phase:
   - Transport (Traffic) Management Plan
   - Waste Management Plan
   - Emergency Response Plan
   - Construction Demobilisation Plan

b) For implementation during the operational phase:
   - Emergency Response Plan
   - Waste Management Plan

The above plans will be developed as part of the further planning stages of the project. A brief description of the scope and the elements of mentioned plans are given in the following text.

Transport (Traffic) Management Plan

It is expected that there will be increase of traffic for construction related activities of the project. This would likely cause disturbance to local population in the project area, thus requiring Transport / Traffic Management Plan to minimise eventual adverse impacts. This plan will include the following elements:

- Transport management planning
- Access roads, alternative routes and diversions
- Access roads maintenance
- Vehicle management and maintenance, and
- Community liaison and safety.

The traffic management action plan covers the following aspects:

- hours of driving and rest periods
- driver, vehicle and load security arrangements
- driver communication with control point and vehicle equipment
- source of suitable vehicles
- vehicle quality and specification
- vehicle management and preventative maintenance
- vehicle routes, route planning and alternative routes
- vehicle parking locations – to minimise impact of vehicles on local community, village, roads, and
- inspection and audit of the project traffic.

Waste Management Plans

Waste management plans for construction activities and for operational phase will be prepared and implemented.

The plan for construction activities will include management of all different types and fractions of waste, including municipal waste, packaging waste and waste from construction activities, as well as hazardous wastes and specific waste streams generated during construction.

The plan related to the operational activities will include details for collection and management of waste generated from: (i) the highway itself, (ii) rest / parking areas and (iii) highway maintenance activities.

Provision of waste collection, separation and disposal services will be included in the plans.

Construction Demobilisation Plan

The construction demobilisation will involve following main activities:

- Demobilisation of construction activities (removal of construction equipment), and
- Restoration of the project area.

Before demobilisation and area restoration, the Agency for State Roads will undertake a due diligence survey of the project area to identify environmental actions required for restoration / rehabilitation of sites related to the project activities. Based on this survey, the Agency for State Roads will plan necessary actions required for demobilisation and restoration / rehabilitation of the project area.

The Agency for State Roads will ensure that removal of construction equipment is taken up along with removal of all empty containers and wastes in accordance with the Waste Management Plan.

The Agency for State Roads will ensure the following elements are considered for rehabilitation of the project area:

- Landscape restoration
- Soil restoration to addressing soil erosion related issues through appropriate control measures
- Restoration of access roads
- Infrastructure and other utilities or buildings restoration, if they were disrupted during the construction activities
- Other restoration elements as agreed between land owner(s), local communities and the Agency for State Roads, and
- Comply with all conditions included in previously issued permits, approvals, etc.

While restoring the site, the Agency for State Roads will ensure that there is no leaching of contaminants into the waters and soils.

Emergency Response Plans (ERP)

The project requires detailed Emergency Response Plan both for probable hazards likely to occur during construction and operation phases.

The ERP will address hazards associated with handling of heavy machinery required for construction and excavation activities. Following natural / accidental hazards may occur during construction phase of the project:

- activation of the eventual landslide areas along the highway route
- slope failure at the different project locations, including access roads
- accident due to heavy equipment / machinery,
- accidental spillage of fuel, oil, lubricants
- accidents due to rock falls during explosion works / mining activities / excavations / drilling.

In order to take care of above hazards, suitable safety and control measures and action plan, along with reporting requirements would need to be prepared.

For the operational phase and prior to commissioning of the highway, the Agency for State Roads will prepare and elaborate a detailed emergency response plan to address any event like earthquake, landslides, forest or other fires, spillage of fuel / oil, risk of traffic accidents, etc. The plan will include reporting mechanism; will define roles of an emergency preparedness team and identify necessary communication issues with local administration.

1.3 Environment and Social Action Plan

Table – Environment and Social Action Plan

No.	Action	Environmental Risks / Benefits	Legislative requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable / Project Phase	Target and Evaluation Criteria For Successful Implementation	Comment
I.	**Project preparation / designing / acquiring decisions, consents, permits**						
I.1	Elaboration of project documentation for the highway, including mutually harmonized studies, designs, assessments, analyses, expertizes, and other documentation that will define the technical solution of the highway, the conditions and the manners of construction are detailed and its operational function, specified durability and conditions for use are secured.	Sound establishment of transport-traffic routes, construction zones, locations for temporary buildings for the purposes of the construction, locations for storage of construction and other materials, volume and type of construction vehicles and machinery.	• Law on Spatial and Urban Planning (Official Gazette of RM no. 51/05, 37/07 and 24/08) • Law on Construction (Official Gazette RM no. 130/09 and124/ 10)	Responsibility: Designer / Agency for State Roads (ASR)	Process of designing and prior to construction commencement	Submitted project documentation of different type to the competent authorities.	
I.2	Integrated process of designing, including documentation for: • Noise protection measures / noise abatement barriers • Anti-erosive measures • Measures for sustainable use of mineral resources for construction purposes	Benefit: Achievement of high level of protection of people, environmental media and natural resources.	Compliance with the relevant Macedonian legislation	Responsibility: Designer / Agency for State Roads (ASR)	Process of designing and prior to construction commencement	Submitted project documentation of different type to the competent authorities.	
I.3	Obtaining licenses to the explosion works to be carried out for construction purposes	Safety protection goals fulfilled.	Compliance with the relevant Macedonian legislation	Responsibility: Designer / Agency for State Roads (ASR)	Process of designing and prior to construction commencement	License obtained.	

Table – Environment and Social Action Plan (*continued*)

No.	Action	Environmental Risks / Benefits	Legislative requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable / Project Phase	Target and Evaluation Criteria For Successful Implementation	Comment
II.	**Construction phase**						
II.1	Safety aspects						
II.1.1	Fire prevention	Protection of people, property and natural resources	Compliance with the relevant Macedonian legislation	Responsibility: Contractor of construction	During construction phase	Elimination of risk of fire	
II.1.2	Prevention of hazards associated with construction activities (Emergency Response Plan(s))	Protection of people, property and natural resources	Compliance with the relevant Macedonian legislation	Responsibility: Contractor of construction	During construction phase	Minimization of risk of hazards	
II.2	Biological diversity						
II.2.1	Measures for good construction practice						
	• Use of existing access roads / minimization of construction of new access roads. • Prohibition and prevention of activities preventing spontaneous development of indigenous flora and fauna • Fencing of construction zones	Disruption of habitats and landscape, negative impacts on the components of biological diversity	Compliance with the relevant Macedonian legislation	Responsibility: Contractor of construction	During construction phase	Elimination / reduced impacts on habitats / species / landscape	
II.2.2	Habitats / species						
	• Implementation of measures to protect habitats as per the proposals in the EIA Report and, subsequently, in the Environmental Decision issued by the competent authority • Good construction and waste management practice to mitigate the impact on the habitats / species.	Negative impact on the habitats and species	Law on Nature Protection (Official Gazette RM no. 67/04, 14/06 and 84/07)	Responsibility: Contractor of construction	During construction phase	Preserved habitats and species	
II.2.3	Forests						
	• Elaborate on the specification of the scope and the level of damage • Compensation measures: - Aforestation of 120 ha in Demir Kapija and Kozhuf forestry units	Conversion of forest land, loss of increment and premature removal	Law on Forests (Official Gazette RM no. 64/09)	Responsibility: ASR/Contractor	Prior and during construction phase	Compensation for damages	

Table – Environment and Social Action Plan (*continued*)

No.	Action	Environmental Risks / Benefits	Legislative requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable / Project Phase	Target and Evaluation Criteria For Successful Implementation	Comment
II.3	Geology and soils						
	• Good construction and waste management practice • Compliance to the restriction for mineral resources exploitation imposed for identified sites in the EIA Report and, subsequently, in the Environmental Decision issued by the competent authority • Implement planned anti-erosive measures • Restoration measures to soils	Disruption and soil erosion	Compliance with the relevant Macedonian legislation	Responsibility: Contractor of construction	Prior and during construction phase	Protection against erosion and poor management of mineral resources	
II.4	Air quality						
	Good construction practice	• Fugitive dust emission • Fugitive emission due to poor storage and handling of construction material or waste material	Law on Ambient Air Quality (Official Gazette RM no. 67/04 and 92/07)	Responsibility: Contractor of construction	Prior and during construction phase	Ensuring reduction of negative effects on the quality of air	
II.5	Water quality						
	Good construction practice	Pollution of waters through leakage of fuel, oil, lubricants or discharge of fecal waste waters by construction personnel	Compliance with the relevant Macedonian legislation	Responsibility: Contractor of construction	Prior and during construction phase	Ensuring reduction of negative effects on the quality of waters	
II.6	Waste management						
	• Plan for waste management • Good construction practice	Pollution of environmental media with different waste types generated during construction activities.	Law on Waste Management (Official Gazette RM no. 68/04, 71/04 and 107/07) and Law on Construction (Official Gazette RM no. 130/09 and 124/10)	Responsibility: Contractor of construction	Prior and during construction phase	• Agree the Plan with competent authority • Sustainable waste management • Implemented Plan for waste management	

Table – Environment and Social Action Plan (*continued*)

No.	Action	Environmental Risks / Benefits	Legislative requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable / Project Phase	Target and Evaluation Criteria For Successful Implementation	Comment
II.7	Noise						
	• Compliance with the European Directive EC/2000/14 on noise emission by equipment for outdoor use • Good construction practice • Noise control methodologies during explosion activities (sites of the tunnels) • Noise emission monitoring	Emission of harmful and annoying noise above limit values	Compliance with the relevant Macedonian legislation	Responsibility: Contractor of construction	During construction phase	Protection from noise in sensitive areas / settlements	
II.8	Landscape and visual aspects						
	• Good construction practice • Restoration measures to natural vegetation • Compliance to the restriction for mineral resources exploitation imposed for identified sites in the EIA Report and, subsequently, in the Environmental Decision issued by the competent authority	Disruption of landscape values	• Good construction practice • Environmental Decision issued by the competent authority	Responsibility: Contractor of construction	During construction phase	Ensuring landscape protection	
II.9	Transport and traffic aspects						
	Plan for traffic / transport	Reduction of the impacts of intensified transport	Good construction practice	Responsibility: Contractor of construction	During construction phase	• Agree the Plan with local authorities • Implemented Plan for transport	
II.10	Cultural heritage						
	• Implement archeological supervision measures • Protection of archeological heritage in case of incidental archeological discovery	Disruption of values of archeological site	Law on Cultural Heritage Conservation (Official Gazette RM no. 20/04 and 115/07)	Responsibility: Contractor of construction	During construction phase	Ensuring protection of a newly discovered site.	

Table – Environment and Social Action Plan (*continued*)

No.	Action	Environmental Risks / Benefits	Legislative requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable / Project Phase	Target and Evaluation Criteria For Successful Implementation	Comment
II.11	Social Management						
	Land acquisition for the project facilities and infrastructure: • Compensation for land and assets negotiated on the basis of current legal requirements • No physical and economical displacement of people	Minimizing negative social impacts (loss of land and assets, etc.)	Compliance with the relevant Macedonian legislation / Best Practice	Responsibility: ASR	During construction phase	Agreement of compensation measures	No Resettlement Action Plan (RAP) is required
	Rehabilitation assistance • employment opportunities for local population • opportunities for local firms to sub-contract services • opportunities for local firms to supply services and goods	Socio-economic benefits to local community	Best Practice	Responsibility: Contractor of construction / ASR	Prior and during construction phase	Achievement of socio-economic benefits to local community	
	Setting up and operating grievance mechanism (processes and procedures)	People can communicate the eventual negative impacts from the highway construction. Solutions are to be found in timely manner.	Best Practice	Responsibility: ASR	Prior and during construction phase	• Public Grievance Form published • Reports on the operation of grievance mechanism	In accordance to the SEP
	Communication of time schedule of the project construction activities through different media	Local population introduced with project activities	Best Practice	Responsibility: ASR	Prior and during construction phase	Information published (news, website, local announcements, etc.)	In accordance to the SEP
	Communication with local communities of time schedule and location of explosion works	Local population prepared for nuisance	Best Practice	Responsibility: ASR	Prior and during construction phase	Information published (news, website, local announcements, etc.)	In accordance to the SEP
	Work force safety / Community safety	Safety of community / population from different hazards / accidents (geological, fire, construction hazards)	Compliance with the relevant Macedonian legislation / Best Practice	Responsibility: Contractor of construction / ASR	During construction phase	Safety conditions achieved	
	Transport / Traffic issues • Transport / Traffic Management Plan	Disturbance of local traffic	Compliance with the relevant Macedonian legislation / Best practice	Responsibility: Contractor of construction / ASR	Prior and during construction phase	Traffic Management Plan implemented	

Table – Environment and Social Action Plan (*continued*)

No.	Action	Environmental Risks / Benefits	Legislative requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable / Project Phase	Target and Evaluation Criteria For Successful Implementation	Comment
III.	**Operational phase**						
III.1	Safety aspects						
	Prevention of natural and man-made hazards associated with highway operation (Emergency Response Plan(s))	Protection of people, property and natural resources	Compliance with the relevant Macedonian legislation	Responsibility: ASR	During operational phase	Minimization of risk of hazards	
III.2	Biological diversity						
	• Protective panels for bird protection • Culverts and direction barriers to prevent animal movements • Monitoring activities for eventual animal casualties	Risk related to biological diversity	Compliance with the relevant Macedonian legislation	Responsibility: ASR	During operational phase	Limitted direct effect on species	
III.3	Air quality						
	• Air quality monitoring activities • Revitalization of vegetation along the highway as a buffer / sanitation zone	Risk related to public health due to air pollution	• Law on Ambient Air Quality (Official Gazette RM no. 67/04 and 92/07)	Responsibility: ASR / MEPP	During operational phase	Air quality protection achieved	
III.4	Water quality						
	• Surface water quality monitoring activities • Collection of runoff water / installment of oil separators • Good management and maintenance practice • Sound waste management measures	Prevention of eventual surface and ground water and soil pollution.	Compliance with the relevant Macedonian legislation	Responsibility: ASR / MEPP	During operational phase	Water quality protection achieved	
III.5	Waste management						
	• Plan for waste management • Good management practice	Pollution of environmental media with wastes generated during the highway operation.	Law on Waste Management (Official Gazette RM no. 68/04, 71/04 and 107/07)	Responsibility: ASR	During operational phase	• Agree the Plan with competent authority • Sustainable waste management	
III.6	Noise						
	• Control of the noise abatement barriers / measures • Restrictive car speed limits on sections near settlements • Noise emission monitoring	Emission of harmful and annoying noise above limit values	Compliance with the relevant Macedonian legislation	Responsibility: ASR	During operational phase		

Table – Environment and Social Action Plan (*continued*)

No.	Action	Environmental Risks / Benefits	Legislative requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable / Project Phase	Target and Evaluation Criteria For Successful Implementation	Comment
III.7	Social Management						
	Rehabilitation assistance • employment opportunities for local population • possibilities to support projects of local / regional significance	Socio-economic benefits to local community	Best Practice / Social Responsibility	Responsibility: ASR	During operational phase	Achievement of socio-economic benefits to local / regional community	
	Setting up and operating grievance mechanism (processes and procedures)	People can communicate the eventual negative impacts from the highway operations. Solutions are to be found in timely manner.	Best Practice	Responsibility: ASR	During operational phase	• Public Grievance Form published • Reports on the operation of grievance mechanism	In accordance to the SEP
	General social benefits: • Time savings • Reduction of Vehicle Operating Costs (VOC) • Accident reduction • Better service Level	The highway will allow significant benefit in running time reduction in comparison to the current running time. The benefits from the reduction of VOC are result of: ✓ Fuel savings, and ✓ Savings due to the fact that vehicles will spend fewer kilometers on the road network meaning that the vehicles will not lose their value as fast as in the past. The highway will improve traffic conditions thus contributing towards reduction of accidents. The highway will provide to the users better service level for their transit travel across the R. Macedonia.	/	Responsibility: ASR	During operational phase	/	For details please refer to the Project's Cost-Benefit Analysis (Ref 6, 7, 8 and 9)

Table – Environment and Social Action Plan (*continued*)

No.	Action	Environmental Risks / Benefits	Legislative requirement / Best practice	Investment Needs / Resources / Responsibility	Timetable / Project Phase	Target and Evaluation Criteria For Successful Implementation	Comment
	Regular toll revenues	Financial benefits	Compliance with the relevant Macedonian legislation	Responsibility: ASR	During operational phase	Toll revenues paid	
	Improvement of road Infrastructure	The highway includes two intersections: “Miravci” (at kilometer 21) and “Smokvica” (at kilometer 27). These intersections will allow easy access of the local residents in the project area to the highway, thus improving traffic conditions for local population.	Compliance with the relevant Macedonian legislation / Best practice	Responsibility: ASR	During operational phase	Improving general welfare of the local population	