PUBLIC ENTERPRISE FOR STATE ROADS

Republic of Macedonia

Final

Environmental and Social Assessment Report (ESAR) and Environmental Management Plan (EMP) for rehabilitation of State road A3, Section Bitola - Makazi

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Table of contents

1. EXECUTIVE SUMMARY AND CONCLUSION 3
2. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK 4
3. PROJECT DESCRIPTION 7
4. BASELINE DATA 9
5. ENVIRONMENTAL IMPACTS 20
5.1 AIR EMISSIONS 21
5.2 WATER POLLUTION 23
5.3 WASTE GENERATION 24
5.4 SOIL CONTAMINATION 25
5.5 NOISE, VIBRATION AND NON-IONIZING RADIATION 26
5.6 SOCIAL IMPACTS 29
6. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN 29
7. MONITORING ACTIVITIES 40
8. ROLES AND RESPONSIBILITIES FOR IMPLEMENTATION OF ESMP 44
9. ANNEXES 44

1. Executive summary and conclusion

Introduction

The Public Enterprise for State Roads (PESR) intends to receive a loan/credit from the World Bank (WB) in relation to the Macedonia Regional and National Roads Rehabilitation Project (year 2014). The project objective is a rehabilitation of the regional and national roads. One of the Category B sub-projects under the WB project of Regional and National Roads Rehabilitation Projects in the Republic of Macedonia is the rehabilitation of the state road A3, Section Bitola – Makazi.

The preparation of an Environmental Impact Assessment Report (EIAR) is an integral part of is an integral part of the overall project documentation to be developed for rehabilitation activities according to the Macedonian legislation in the field of environmental protection, especially the Law on Environment ("Official Gazette of R. Macedonia" no. 53/05, 81/05, 24/07, 159/08, 83/09, 48/10, 124/10, 51/11, 123/12, 93/13 and 187/13)[1]. This entire documentation package should be approved by Administration of Environment within the Ministry of Environment and Physical Planning (MOEPP).

According to the WB policy on Environmental Assessment (OP 4.01), Involuntary Resettlement (OP 4.12), and other environmental and social policies, such projects should be analyzed to determine the potential for negative and positive environmental and social impacts and to avoid, compensate and/or mitigate the adverse impacts on the environment.

In order to ensure the environmental compliance of the proposed project and to meet the requirements of the World bank Safeguard Policy OP 4.01 'Environmental Assessment, and in accordance with Environmental and Social Management Framework, an Environmental and Social Assessment Report, including Environmental and Social Management Plan (ESMP) is prepared for this subproject.

The proposed rehabilitation activities for the road section Bukovo – Resen are subject for the analysis by this Environmental and Social Assessment Report (ESAR) and ESMP.

The road section Bitola - Makazi has been in function for several decades and it is used as regional and national connection of city of Resen with city of Bitola. Visible damages of all kinds (across the length, width, crocodile skins, potholes) are creating problems while driving and therefore it is necessary to carry out their rehabilitation and improvement of road construction elements.

The section Bitola - Makazi starts at km 46+883.00 on the state road A3 (former M-5) interchange, on connection with R1101 and R1308 with A3. The section ends at the exclusion of the petrol station "Luk Oil" at the exclusion towards Bitola. The length of the road section is approximately 16 km.

[1] **Article 24** – Environmental and Social Assessment Report

Potential impacts of the project on the environment and social setting will be assessed in this Environmental and Social Assessment Report (ESAR), which is developed to meet the requirements of Macedonian regulations and World Bank Environmental and Social Safeguards.

Conclusion

Based on results of conducted environmental assessment, it may be stated that the majority of potential environmental impacts from the foreseen road section rehabilitation activities are likely to occur during rehabilitation phase (construction phase and they will be of temporary nature. Implementation of the proper mitigation measures during design and rehabilitation phase will ensure reduction of the adverse project impacts to acceptable levels. The project impact will be insignificance if all proposed mitigation measures and monitoring activities are implemented properly.

Moreover, the rehabilitation of the road section will improve technical conditions of this road and, therefore, will contribute to safe, fast, economic and comfortable road traffic. Transport of people and goods will run better than in the past, thus promoting the trade and economic relations in Resen and Bitola, and above all traffic safety conditions of the population living in this region will be improved.

2. Policy, legal and administrative framework

The Environmental Assessment process is intended to serve as a primary input for the decision making process by Macedonian authorities, which have to approve the project before it can be constructed and operated and by the World Bank, which is providing funding for the project.

Macedonian Framework

Republic of Macedonia has developed full legal and institutional framework for Environmental Assessments. This framework is generally in compliance with the existing WB EA rules and procedures as well as in full compliance with the EU EIA Directives. Environmental Impact Assessment of certain projects is required to be carried out in the Republic of Macedonia in accordance with Articles 76-94 of the Law on Environment ("Official Gazette of the Republic of Macedonia" No. 53/05, 81/05 24/07, 159/08, 83/09, 48/10, 124/10, 51/11, 123/12, 93/13 and 187/13). The types of projects that require an EIA are to be determined in accordance with Article 77 of the Law on Environment, which are specified in details by the Government of the Republic of Macedonia in the "Decree for Determining Projects for which and criteria on the basis of which the screening for an environmental impact assessment shall be carried out" ("Official Gazette of the Republic of Macedonia" No.74/2005).

According to this Decree **full EIA Study** is not needed (only construction of new highway and national or regional road or widening of existing road with additional two lanes is subject to full EIA Study).

The Ministry of Environment and Physical Planning have prepared Guidance for conducting, screening, scoping and review in environmental impact assessment in the Republic of Macedonia, Report Ref. No.300033-06-RP-325 Skopje 2006. An aim of this Guidance is to assist in the interpretation of the EIA laws so that they can be

applied in practice. This Guidance is drawn in part from screening, scoping and review Guidance provided by the European Commission. It accompanies Republic of Macedonia efforts to implement the EIA Directive and is designed to help investors, bodies of the state administration and other involved parties to undertake the highest standards of environmental impact assessment.

This section Bitola - Makazi is of a category covered by Decree amending the Decree for actions and activities for which is obligatory a preparation of an EIA Report and for which approval the Ministry of Environment and Physical Planning is competent authority ("Official Gazette of RM" No.36/12). The Environmental impact assessment report is required to provide identify and describe how the project can have negative and positive impacts on environmental resources – water quality, air, biodiversity etc. and on people – economic status, noise, traffic, etc. Public participation is required throughout the process.

Still, in phase of Detailed Design Public Enterprise for State Roads, as Investor, has to initiate the procedure for environmental impact assessment by submitting Letter of Notification of intent to conduct a project to the MoEPP to issue official Decision does EIA Report or full EIA Study is required.

World Bank Environmental and Social Safeguard Policies

World Bank environmental and social safeguard policies are regarded as a corner stone of its support to sustainable poverty reduction. The objective of these policies is to prevent and mitigate undue harm to people and their environment in the development process. These policies provide guidelines for the WB and borrowers in the identification, preparation and implementation of programmes and projects. Environmental Impact Assessment (EIA) is one of 10 environmental, social and legal safeguard policies of the WB. EIA is used in the WB to identify, avoid and/or mitigate the potential negative environmental impacts associated with lending operations. The purpose of EIA is to improve decision making, to ensure that project options under consideration are sound and sustainable, and that potentially affected people have been adequately consulted. The WB's environmental assessment policy and recommended processing are described in **Operational Policy (OP)/Bank Procedure (BP) 4.01: Environmental Assessment.** This policy is considered to be the 'umbrella' policy for WB environmental 'safeguard policies'.

For the present road section Bitola – Makazi the relevant safeguard policies to be considered at all stages of preparation and planning are:

- Operational Policy on Environmental Assessment (OP 4.01, 1999, revised April, 2013);
- Operational Policy on Physical Cultural Resources (OP 4.11, 2006);
- Operational Policy on Natural Habitats (OP 4.04, 2001);
- Policy on Access to Information (2013).

The WB's requirements on Information Disclosure are detailed in the Access to Information Policy last revised in July 2013.Disclosure Handbook 2002.

The WB OB/BP on Involuntary Resettlement requires WB-assisted projects to avoid or minimize involuntary land taking. If such cannot be avoided, displaced persons need to be meaningfully consulted, compensated for lost/damaged assets and assisted in restoring or improving their living standards and livelihood. The policy requires that if involuntary land taking and resettlement become necessary, a clear plan for compensating and assisting displaced persons be prepared by the borrower by appraisal for WB review. Such a plan must be substantially completed prior to the commencement of civil works.

The WB OP/BP on Natural Habitats seeks to ensure that WB-supported infrastructure and other development projects take into account the conservation of biodiversity, as well as the numerous environmental services and products which natural habitats can provide to human society. The policy strictly limits the circumstances under which any WB-supported project can damage natural habitats, i.e. such land and water areas where most of the native plant and animal species are still present. Specifically, the policy prohibits WB support for projects which would lead to significant loss or degradation of any Critical Natural Habitats, whose definition includes those natural habitats which are either:

- legally protected;
- officially proposed for protection;
- unprotected but known of high conservation value.

In other (non-critical) natural habitats, WB-supported projects can cause significant loss or degradation only when:

- there are no feasible alternatives to achieve the project's substantial overall net benefits; and
- acceptable mitigation measures, such as compensatory protected areas, are included within the project.

At the Project level, WB seeks to ensure that its lending operations comply with international obligations to protect biodiversity. EIAs for WB should take into account the impacts of proposed projects on a country's biodiversity.

The WB OP/BP on Forestry aims to reduce deforestation, enhance the environmental contribution of forested areas, promote afforestation, reduce poverty and encourage economic development. The policy defines a forest as an area of land of not less than 1.0 ha with a tree crown cover (or equivalent stocking level) of more than 10% that has trees with the potential to meet a minimum height of 2 m in situ (in its original position). The WB does not finance projects that, in its opinion, would involve significant conversion or degradation of critical forest areas or related critical natural habitats. Critical forest areas are natural forest lands which are:

- existing protected areas and areas officially proposed by governments as protected areas, areas initially recognized as protected by traditional local communities, and sites that maintain conditions vital for the viability of these protected areas;

- sites identified by WB or an authoritative source, such as areas with known high suitability for biodiversity conservation and areas that are critical for rare, vulnerable, migratory or endangered species.

The WB OP on Cultural Property is based on the acknowledgement of cultural resources as sources of valuable historical and scientific information, as assets for economic and social development, and as integral parts of a people's cultural identity and practices. WB policy as stated in Operational Directive (OD) 4.50 is to: (a) assist in protecting and enhancing cultural property through specific project components and (b) decline to finance projects which significantly damage cultural property, and assist only those that are designed to prevent or minimize such damage.

WB policy on Access to Information Public Consultation and Disclosure follows specific procedures: ESAR reports will be presented to both the Government of the Republic of Macedonia and WB Management and serve as a background document for approval by the competent authority. In accordance with OP/BP 4.01, the Borrower will have to make the draft ESAR Report and Land Acquisition Plan (LAP) available in Macedonian at a public place accessible to project-affected groups and local NGOs. The Borrower must also officially transmit the ESAR report and LAP to WB. Once the ESAR report and LAP have been locally disclosed and officially received and approved by WB, the WB will also make them available to the public through its Infoshop.

As regards WB's internal ESAR procedure, Environmental Screening is an important step at the stage of project preparation through which proposed projects are attributed to the appropriate extent and type of ESAR. In practice, the significance of impacts, and the selection of screening category accordingly, depends on the type and scale of the project, the location and sensitivity of environmental issues, and the nature and magnitude of the potential impacts.

3. Project description

Road Section Bitola - Makazi (Figure 1) is a part of the state road A3 and part of Route 8 of the South-East Europe Transport Observatory network (SEETO).

The subject section starts at km 46+883.00 on the state road A3 (former M-5) interchange, on connection with R 1101 and R 1308 with A3. The section ends at the exit exclusion of the petrol station “Luk Oil” at the exclusion towards Bitola. The length of the road section is approximately 16 km.

The road was constructed in the period between 1982-1985, generally following the existing old road alignment and compliance with the necessary geometry elements according to the category of the road. Since the road was put in to use 30 years ago, neither reconstruction or rehabilitation is being made on the same have been made since then, except patching of pot holes and ongoing regular maintenance.

According the functionality and the purpose, this road serves to:

– regional connectivity of the road infrastructure (the settlements in the region);

- deliveries of goods and materials;
- provide a space for regional connectivity with continuity to the wider region in this part of the state.

The activities of this project embrace rehabilitation (pavement rehabilitation, drainage rehabilitation, installation of road safety equipment/signs) of the current road in both directions.They need to produce optimal solution and improved technical and useable features of this road oriented toward safe, fast, economic and comfortable road traffic and after rehabilitation of these sections, the road features will be improved. Transit transportation will run better than in the past, thus promoting the trade and economic relations, and traffic safety conditions of the population living in this region will be improved.

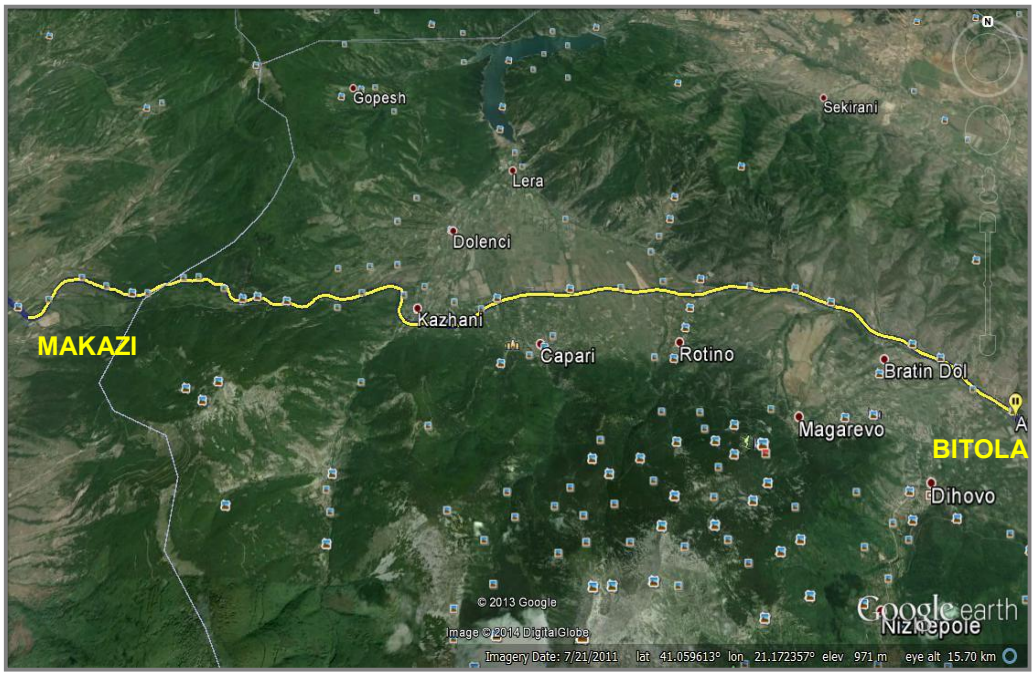


Figure 1 Satellite map of the road (source: Google earth)

- **Horizontal and vertical alignment**

The horizontal alignment mainly passes through the mountainous terrain. Considering that the width of the state road is 10.5 m (the road has a third lane for motion of heavy vehicles), the longitudinal slopes of the vertical alignment should not exceed 7%. The horizontal elements of the road are designed to meet the speed of 100km/h.

- **Existing pavement construction**

The existing pavement is in unsatisfactory conditions with damages. On the road section the appearance of longitudinal and transverse cracks, pot holes, “crocodile skin” cracking’s and rutting are visible.

Figure 2 Damages of the pavement construction

- **Drainage**

The drainage of the road is in a bad condition. Generally the existing channels are filled with sand and earth material, and part of the existing culverts does not work properly.

- **Road markings and traffic signs**

There is a horizontal and vertical signalling on the section.

On this section enormous damage is determined so respectively rehabilitation of following aspects of the current carriageway: structure, dimensions and constructive details should be done.

4. Baseline data

The foreseen activities for rehabilitation of the section Bitola - Makazi, will take place in the two municipalities: municipality of Bitola and municipality of Resen.

Natural/Geographical features

Municipality of **Resen** is located in Prespa Region at an altitude of about 880 m, in southwestern Macedonia in the Prespa Basin and covers an area of 739 km^2. It is divided into 562 km^2 of land and water to 177 km^2. It is surrounded by high mountains: Baba on the east side, on the west Galichica, Bigla on the north side.

Minicipality of **Bitola** is at the foot of Baba Mountain (with top Pelister high 2.601 m) in the central part of the valley - Pelagonija. Through Minicipality of Bitola flows river Dragor. It is Located 14 km north of the border with Greece, at an altitude of 576 m.

Climate features

The municipality of **Bitola** has an average annual temperature of 11,1 ° C, but with large variations in certain years: 10,1 ° C in 1975 to 13,1 ° C in 1952. The coldest month is January, with an average monthly temperature of -0,6 ° C, and with absolute minimum temperature of -30,4 ° C. The hottest month is July, with an average monthly temperature of 22,2 ° C, and the absolute maximum temperature of 41,2 ° C. Absolute annual variation of temperature amounts to 71,6 ° C, which are specifics of the continental climate. The temperature has characteristic of a continental climate, rainfalls of dry steppes or modified Mediterranean climate. The average annual precipitation amounts to 601 mm, with values ranging from 338 mm to 879 mm.

The climate in the entire **Prespa** region is temperate continental, having some Mediterranean impact that comes from the Grlo gorge (on the southwest of the Small Prespa Lake) and from the mountain pass Prevtis (on the southwest part of Greek Prespa). It features with warm summers and mild winters. The annual average of relative air humidity is 64%.

The water of Lake Prespa appears to be a microclimate modifier, influencing its environment. The lake is situated at 853m above the sea level and acts as a thermo regulator for the surrounding air mass, especially increasing the air temperature in winter months, most notable in December and January.

The annual temperature average is 10,2°C, the warmest month is July having a monthly average temperature of 21°C, while the coldest month is January with a monthly average temperature of 0,3°.

The Prespa Basin features long lasting sunny weather, having an annual amount from 1.400 to 2.600 sunny hours.

Considering the winds and air circulation, there are present local winds which direction is determined by the lake, due to uneven heating of the air above the land and above the lake surface, which increases the general frequency of weak winds in this area.

The fog is a rare weather phenomenon in the Prespa region, mainly because of the frequent winds and the presence of large lake surface areas.

Hydrological features

In the municipality of **Bitola** river Dragor is passing with length of 4,5 km. Dragor arises from several small rivers, from Dihovski Dragor (with length of 12 km, whose spring part comprises from more streams that originate from the slopes of Pelister: Sapunchica, Lak potok, Crvena Reka and Klisurica) and Bratindolski Dragor or Boroica. The total length of the river Dragor accounted for 25,1 km to the watershed scale of 67 km, basin of 188 km^2 and intermediate decline - 17,0 ‰.

On top of Mount Baba-Pelister there are two glacial lakes known as: "Pelisterski eyes"-Big and Small Lake. Mountain Baba is rich with springs, streams and rivers. Most of the springs are in upper parts of the mountain, at an altitude of 2.000 and 2.200 m. The rivers in the upper part have mountainous character, rich with very clean and cold water.

In the municipality of **Resen** in Prespa valley two lakes (Big and Small Prespa Lake) are present. Great Prespa Lake (284 km^2) with an altitude of 853 m and maximum depth of 54 m, is among the cleanest lakes in world. Since 65% belong to the Republic of Macedonia, 18% to the Republic of Albania and 17% to Greece.

In the Big Prespa Lake there are two islands: Grand Island City (St. Peter) with an area of 1km^2, located on-triangle border and belongs to the Republic of Macedonia (the only island in the Republic of Macedonia). In the Republic of Albania is smaller island called Small town (St. Paul).

Small Prespa Lake is located on the territory of Greece and only a fraction in the Republic of Albania. It has two islands: Achilles and Vidrinec. This lake covers an area of 45.59 km^2 and is three meters higher than the Big Prespa Lake.

There are no water courses in the immediate vicinity of the section Bitola – Makazi. (The nearest water course to road section envisaged for rehabilitation is accumulation Strezhevo, on approximately 5 km distance from project activities.)

Biodiversity

The road is surrounded by oak and beech forests which represent typical Macedonian forest ecosystems as described below:

Oak forest

The "Oak region" is distributed within lowlands and highlands to 1,100 m asl. The average annual temperature in this region from 9 - 14.2°C, while the average precipitations 500 – 850 mm. The prevailing soil type is cinnamon-coloured forest soils, but other soil types are also locally presented (e.g., red podzolic soils (terra rossa), chernozem, pseudogley - gley, luvic, brown podzolic etc.). Climate – zonal Oakforests dominate in these regions, mixed with orographically - edaphically and hydrologically conditioned Chestnut, Common ash (Fraxinus excelsior), Maple (Acer sp.), Poplar (Populussp.), Willow (Salixsp.) etc. inplaces. With respect to vertebrate fauna, typical inhabitants of this region are eastern Mediterranean and Syrian boreal species such as: Balkan whip snake (Coluber gemonensis), Fallow deer (Dama dama), Eastern hedgehog (Erinaceus concolor), Weasel (Mustelanivalis), Balkan spadefoottoad (Pelobatessyriacus balcanicus), Greenwoodpecker (Picus viridis), Cat snake (Telescopusfallax), Wormsnake (Typhlopsvermicularis) etc. None of mentioned animal species are not on any list of Macedonian animal protected lists.

Although the forests are located quite close to the road route at some parts, the ecosystem is not expected to be significantly disturbed in addition to the disturbance already occurred for several decades of the existence of the

road. Moreover, the expected rehabilitation of the culverts and drainage system will mitigate negative impacts which are currently caused by this damaged and improperly functioning system.

- **Grassland ecosystems**

These occur in the lowland and highland belts from 60-1,200 m asl. The soils on which they develop are geologically diverse (silicate, lime- stone, dolomite etc.).

The climatic characteristics are similar to those of the Oak forest region. Dryland/grassland ecosystems encompass a higher number of differing plant communities such as: meadow, halophytic and steppe - like, as well as the plant communities of high land pastures. They usually develop within successional habitats, primarily due to the permanent degradation of forest phytocoenoses (mainly Oak), but also on abandoned agricultural land areas.

From a faunal standpoint, eremial (i.e., grassland or semi-desert) elements originating from the Aral-Caspian refugial center and adapted to life in steppe-like or semi-desert conditions are dominant within the dryland/grassland ecosystems. Typical species include: Striped field mouse (Apodemus agrarius), Stone curlew (Burhinus oedicnemus), Common quail (Coturnix coturnix), Sand boa (Eryx jaculus), lesser molerat (Nannospalax leucodon), Great bustard (Otis tarda), Common partridge (Perdix perdix), Balkan wall lizard (Podarcis taurica), Little bustard (Tetrax tetrax) etc.

Social infrastructure

Social infrastructure includes the existing educational, health, social institutions, where the citizens are able to satisfy their educational, health, cultural, recreative and other needs. The existing of these institutions and good connections between them, contribute for satisfy the needs of the people in their municipality.

Education

From educational aspect municipality of **Bitola** has well developed network and long tradition. In the frame of this municipality there are twelve elementary schools, which are located on 12 different locations. Two of them are located in villages Kukurechani and Bistrica, and the other ten are located in the town Bitola on the periphery of the town. The oldest education objects for elementary education are Elementary School “Stiv Naumov” and “Goce Delcev” built in 1945, and the newest object is Elementary School “Kliment Ohridski” built in 1990. The education process is on three languages Macedonian, Albanian and Turkish. The secondary school education is also well developed on the territory of this municipality. In general there are seven secondary school objects. All of them are located in the town Bitola. In this context also there is one student house in which the students of other places are living during the school year. This educational institution has diverse educational programs and they produce educated persons with different vocation. These are the secondary schools that are located in the municipality of Bitola and the educational programs that they offer to the students:

- SMS “Josip Broz Tito”- social-humanistic, natural sciences and mathematics, languages;
- SMS “Taki Daskalo”- geology-metallurgy, traffic engineering, textile and leather;

- SMES “Jane Sandanski”- economy;
- SMES “Gjorgji Naumov”- electro technics, and mechanical engineering;
- SMMS “Jovan Kalauzi”- medical education;
- SMAS “Kuzman Shapkarev”- veterinary medicine, agricultural education.

Also there is one more institution in function of the educational process, that institution is Mirka Ginova, the home for students.

On the territory of this municipality, there is also well developed university education. The biggest institution at the same time most significant is University of “St.Kliment Ohridski”. This institution was formed in 1979. In the frame of the university there are six faculties, although this institution was formed relatively late, she is one of the most important educational institutions for university education in the south-western region of the Republic of Macedonia. Also this university has his disperse faculties in 3 towns, Ohrid, Prilep and Bitola. Beside the faculties in the frame of the university there are 3 more scientific institutions, they are: “The Institute for Tobacco Research” in Prilep, “The Institute for Slovenian Culture” in Prilep and “Hydrobiologycal Institute” in Ohrid.

Primary education in the municipality of **Resen** is organized into five basic schools with 15 regional classes. The municipality has one Municipal Secondary School, “Car Samoil“. In the municipality there is one kindergarten, 11 September, which is located in the town of Resen, for care, education and education of children from preschool.

Health institutions

On the territory of **Bitola** there are a significant number of active health care institutions. One of the most important is the Clinical center in Bitola which has different sections and this is institution with long tradition and practice. Also there are many private medical institutions most of them are in the domain of the primary medical protection, many dentist ordinations and eye hospitals also private eye medical ordinations. In the municipality of **Resen** there is one public health institution PHI "Zdravstven Dom" Resen. In this health center basic health services are provided through six divisions: primary care – it offers identifying, monitoring and checking the health status, taking expert medical measures for improving the health status, Prevent, Suppress and early detection of diseases, provision of emergency medical assistance, including the vehicle, treatment practice, or home care, care about pregnancy delivery, implementation of preventive, therapeutic and rehabilitation measures, while the specialized consultative care entering the examination and identification of diseases, injuries and implementation of specialized diagnostic, therapeutic and rehabilitation procedures. In the rural areas health services for the population are provided by the health care ambulances in the villages: Carev 11, Dvor, Krani, Ljubojno and Pretor. In the villages, Stenje Shtrbovo and Nakolec there are temporary clinics. In the municipality there are 15 private dental clinics, 7 private pharmacies and 2 private clinics.

Industrial facilities

For the development of the economy in general, the wider region of municipality of Bitola and Resen has good natural conditions which contributes for fast and progressive development of the economy in general, now and before. These natural conditions give good base for development of the economy, especially for some specific branches, so for this region well developed branches with significant impact on the economy and high natural potential are: agriculture, forestry and significant mineral potentials that are present in these municipalities. On the territory of this municipalities and the wider area there are significant mineral resources and high potential for their exploitation. The most significant industrial capacity in this area also in Macedonia is REK – Bitola.

This mining-energetic institution has significant impact on the economy and production of electric energy in Republic of Macedonia. REK - Bitola has more than 2.500 employees. On a year base this institution from her activities produces about 30 million cubic meters of ore residual and 6-7 million tons of coal lignite is used for production of electric energy. About 4.2 GW hours of electric energy is produced in this industrial capacity. With these activities REK Bitola is the biggest energetic facility in Macedonia.

Another significant capacity is JP Stezevo. This is one of the most significant hydro meliorative objects on the territory of the municipality Bitola and wider area. This object is artificial accumulation which was built for the period of 4 years, and has an input of water from 8 rivers of the wider area, this are: Dragor, Šemnica, Graeška, Kisavska, Stara, Zlokukjanska, Ostrecka and Kinderska. The water from this accumulation is used for irrigation of 20200 ha in Pelagonija, also for drinking water for the town Bitola and other near places and for energy production also. Also there are about 220 people who are working in this capacity. Other significant industrial capacities are: ZK Pelagonija one of the biggest agricultural capacities, The Factory for yeast and alcohol, IMB Mlekara Bitola milk factory, 4-th November factory for sugar and other. From the textile industry there are few factories which are mainly located on the territory of municipality Bitola, such as Rodon, Sat moda and Konington. In general the total number of trading subjects in Municipality of Bitola presented in table 1.

Table 1 Types of business objects in Bitola municipality

Types of business objects in Bitola municipality	
Enterprises	4.602
Trading companies	4.776
Trading persons	884
Other	817
Total	11.079

The lead branch of the development of municipality of **Resen** is the industry, which covers 6 industries: food (Ltd Swisslion – Agroplod – capacity of food industry with profit centers for production of different food products, other capacities from the field of food industry is “CD fruit” in village Varev Dvor intended for processing of fruits and vegetables), textile (Ltd Hateks – production of textile products, sewing mainly for foreign markets, Ltd Krznoteks, Ltd Tekstil prom, Ltd Stenjeteks), metal processing (JSC Algreta), wood (Ltd Interbrauk), construction (JSC IGM Sloga) , chemical (JSC Ohis Prespa Plast), mostly medium enterprises. From small businesses as more specific areas of

activities are: production of honey and honey products, production of wood packing, production of carpentry, snails farming, fish farming, collection and processing of forest fruits and herbs and more.

Many names of the sportists who have been implemented in the city's rich sports history, are numerous. However, it is obvious that Dimitar Ilievski – Murato has leaned over all of them, because he conquered the world's highest mountain peak, Mount Everest (8848 m.). He is the first Macedonian, who climbed on the world's rooftop.

Demography

On the territory of the municipality of **Bitola** there are 19 settlements, according to the Republic of Macedonia statistical analysis from the last census in 2002. The total number of inhabitants is 86408 from which 74550 are living in Bitola and 11858 in 18 villages around Bitola. The total number objects for housing is 33232 from which 28155 are in Bitola and 5077 are in the villages and other places. But with the new territorial distribution that was made in 2004 to the municipality of Bitola some new villages were included so the total number of villages that are present in the municipality is 65. Total number of population after 2004 on this territory was 95285 from which 74550 were living in Bitola and 20835 in the villages.

The density of the human population in the municipality is 120 people on km^2. The total number of people that live in this municipality and the total number of objects for housing, also the distribution of this parameters on different places in the municipality are shown in (table 2) according to the new territorial distribution form 2004:

Table 2 The total number of people and the total number of objects for housing in the municipality of Bitola

Municipality of Bitola	Total people	Households	All types of living objects
Total number of People	**95385**	**28942**	**37225**
The town of Bitola	74550	23010	28155
65 villages	20835	5932	9070

With analyses of the existing statistical data it is ease to notice that the people that live in this municipality are with different ethnic structure. Most of the people are Macedonian about 88.7 % or 84.616 people, second by number are Albanians, then Turks and there are also many communities with smaller number and percentage. The ethnic structure of the people in municipality of Bitola is shown in (table 3):

Table 3 Ethnic structure of the people in municipality of Bitola

Ethnic group	%	People
Macedonians	88.70	84616
Albanians	4.36	4164
Turks	1.68	1610
Gipsy	2.74	2613
Vlasi	1.33	1270
Serbs	0.56	541
Bosnian	0.02	21
Other	0.57	550
Total		95385

The age and sex structure of the people in the municipality is also an interesting indicator and this data are also available. So from total 95385 people that live here, 46969 are male and 48416 are female. The age structure is diverse and composed by the fallowing age categories: male people from 0-14 years 8237, from 15-29 years 10388, from 30-44 years 10041, from 45- 59 years 9950, from 60-74 years 6031, from 75-85^{+} years 2008 and unknown age 8.

The structure of the female is with this composition: from 0-14 years 7955, from 15-29 years 10277, from 30-44 years 10138, from 45- 59 years 9599, from 60-74 years 7514, from 75-85^{+} years 2866 and unknown age 22. According to that the biggest number of population is in the group between 15-60 years both male and female, this means that the people are young and that the work capable and reproductive active people are in higher number than the other categories.

In the area of the Municipality of **Resen** there are 44 toponyms of settlements, out of which 43 are rural (39 active and 4 inactive/abandoned) and one urban settlement – the city of Resen. The total population of Municipality of Resen is 16.825 inhabitants, the total number of settlements and the total number of people in Municipality of Resen, are shown in (table 4):

Table 4 List of settlements and total number of people in municipality of Resen

Arvati	137	**Lavci**	134
Asamati	175	**Leskoec**	12
Bolno	237	**Leva Reka**	60
Brajchino	134	**Ljubojno**	186

Carev Dvor	605	Nakolec	262
Gorna Bela Crkva	187	Oteshevo	0
Dolna Bela Crkva	237	Perovo	175
Dolno Dupeni	235	Petrino	0
Drmeni	416	Podmochani	306
Evla	106	Pokrvenik	65
Ezereni	203	Preljubje	16
Gorno Dupeni	59	Pretor	142
Grnchari	417	Rajca	66
Ilino	0	Resen	8748
Izbishte	176	Shtrbovo	184
Jankovec	1169	Shurlenci	89
Konjsko	3	Stenje	188
Kozjak	117	Sopotsko	222
Krani	416	Stenje	438
Kriveni	27	Stipona	0
Krushje	107	Volkoderi	114
Kurbinovo	137	Zlatari	118

According to the census from 2002, in the Municipality of Resen live 16.825 inhabitants, out of which 50,3% are female and 49,7% are male. This population is distributed within 4.847 households and 8.215 homes, that implies an average of 3,5 persons per household, and an average population density of only 23 people per 1 km². According to their ethnic background, Macedonians are 76,07% of them, Albanians 9,13%, Turks 10,68%, Serbs 0,44%, Aromanians (Wallachians) 0,15%, Gypsies (Roma) 1,09%, while others are 2,44%.

Dominant occupation of the population in the municipality is agriculture, or fruit growing from which average annual production is about 70 000 tons of apples with excellent quality. With apple are planted approximately 3,500 ha. Out of the total production about 50% are for export out of our state. About 10 000 to 15 000 tonnes of apple fruit are intended for industrial processing. A significant part ends on the domestic market. It is estimated that Prespa with its production accounts for about 80% of apple production in the country. Over 70% of households in the municipality are apple producers.

Tourism

On the west side of the municipality of **Bitola** and in on the east side of Resen is located mountain Baba. On this mountain there are few mountain picks higher than 2000 m, and the highest of them is Pelister (2601 m). Big part of this mountain has very unique nature values so it was nominated and decided to be a National Park-Pelister in 1948. NP-Pelister is on 15 km distance from the town Bitola, it has a territory of 12.500 ha and altitude variation from 700-2601 m.

The Park is attractive for tourists from different aspects, there are very interesting flora and fauna and good terrains for mountain climbing extreme sports and other activities. There are two glacial lakes Big and Small Lake well known to the people as eyes of Pelister and big attraction for new tourists. Also on the side of Prespa municipality there are significant touristic capacities such as mountain Galicica, Baba Mountain and Lake Prespa.

Cultural values

The town **Bitola** and the wider area of this municipality have significant cultural heritage and tradition. This area has different monuments from the begging of human civilization or stoneage to many actual monuments and cultural actions that are very recent. One of the most important institutions for protection, promotion and research of this heritage is the "Institution for protection of the monuments of the culture Museum of Bitola". This institution was formed in 1975 from the local authorities of the municipality of Bitola. This institution and the museum have more than one activity, in the frame of the institutions there are 3 sectors: sector for Archeology, Ethnology and History. Today the institution and the museum are located in the center of Bitola and they have about 2300 m^2 surface on their territory. The museum was formed in 1934 and has rich library with more than 11300 books, magazines, video and audio materials, rare hand scripts and other significant cultural monuments.

Since the time of Roman reign through **Prespa** (which is within the municipality of Resen), the famous old Roman road “Via Egnatia” was passing. Besides it more settlements and stations were constructed. On Prespa region 130 archeological localities from different periods were registered, then 1000 archeological exhibits, 500 coins as well 450 exhibits of ethnological heritage. Around 95 churches and monastery complexes were registered as well 1024 icons. From old architecture the following villages are distinguished: Brajcino, Dolno Dupeni, Konjsko which with its aritechture represent special integrities with stone houses, bakeries and woven fences.

Construction Materials

Since only rehabilitation activities are planned for this section (part of existing state road A3), no active processing of raw materials are envisgaed on the temporary construction sites. The basic construction materials to be used are bitumen emulsion, sand, asphalt - concrete layer, etc.

The proposed locations of borrow pits, waste disposal sites, asphalt plant, locations for temporary storage of construction material, are presented on Figure 3.

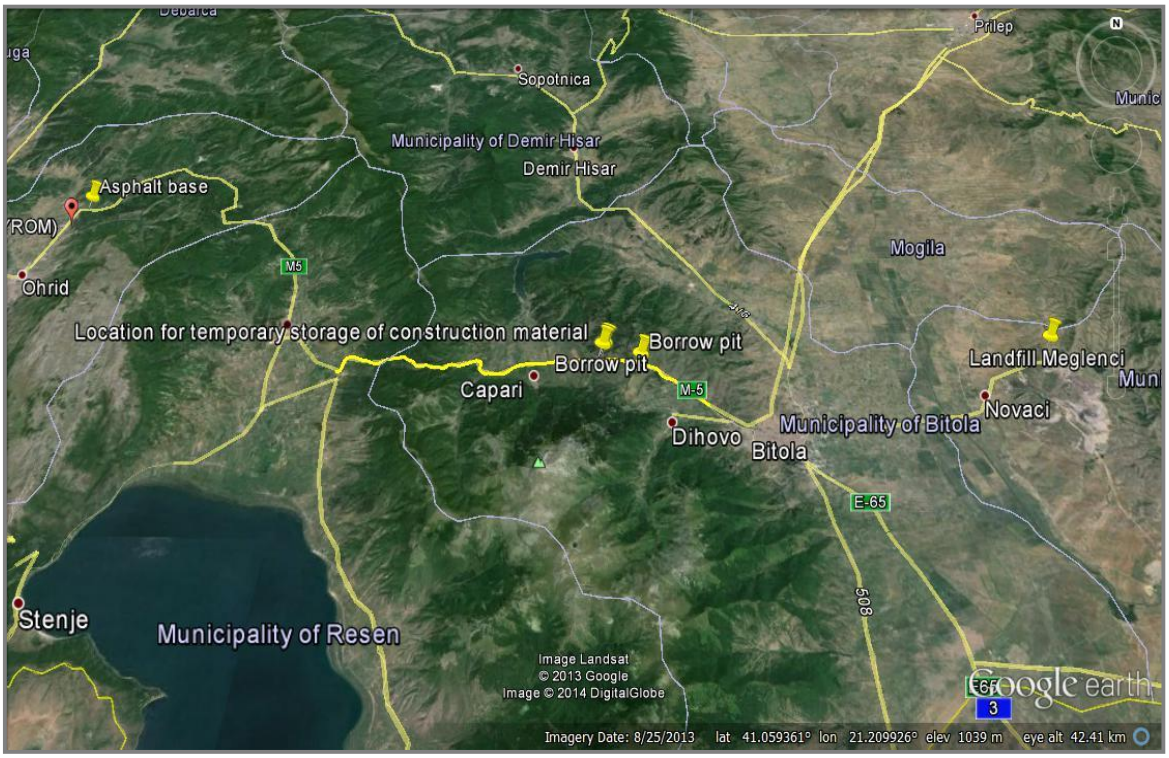


Figure 3 Proposed locations of borrow pits, waste disposal area, asphalt plant, locations for temporary storage of construction material

Contractor will obtain construction materials from two existing borrow pits near the subject section (one is between villiages Rotino and Bratin Dol on the right side from the subjected road in direction from Makazi to Bitola and the other one is on the left side from the road Makazi Bitola southwest from v.Gorno Srpci).

Both proposed borrow pits are privately owned and possess environmental permits specifying the environmental requirements to be followed/met by borrow pit owners/operators, which have been issued by Ministry of Environment and Physical Planning in accordance with the Law on Environment ((“Official Gazette of the Republic of Macedonia“ No. 53/05, 81/05 24/07, 159/08, 83/09, 48/10, 124/10, 51/11, 123/12, 93/13 and 187/13), and concession permits issued by the Government of the Republic of Macedonia (Ministry of Economy) for the period of 30 years in accordance with the Law on Mineral Raw Materials (“Official Gazette of RM“ num. 136/12). As per the above mentioned Law, the decision on issuing the concession permit is taken based on the EIA report or EIA Study to be approved by MoEPP, and Waste management Plan prepared by the borrow pit operator and approved by the Ministry of Economy. The environmental compliance of the borrow pit operation is supervised by the State Environmental Inspectorate under the MoEPP. The inspections are carried out in accordance with MoEPPs annual

inspection programs, or as judged to be necessary by the MoEPP. The amounts for each type of the construction materials to be purchased will be determined by the detailed design based on the results of geotechnical surveys which will be conducted prior to the start of construction activities. During construction activities small amount of construction waste (removed asphalt layer, earthen material from clearance of culverts) will be generated. This waste will be disposed in the existing landfill, near section (landfill Meglenci in the municipality of Bitola, which is on distance around 20,3 km from starting point of analyzed section of the road (in the vicinity of city Bitola). In this respect, the contractor shall act in accordance with the Law on Waste Management, and all the activities shall be coordinated with the Investor (PESR) and local communal waste management utilities.

According to the National Waste Management Plan of Republic of Macedonia (2009 – 2015), landfill Meglenci has surface of 75,000 m^2 and deposited municiapl and inert waste - 1.500,000 m^3. The amount of generated construction waste will be defined in the Detailed Design.

The asphalt plant proposed to be used for the pruposes of the project located nearby village Kosel (see Figure 3). The plant possesses an environmental permit issued by MoEPP which conducts regular monitroing of the plant's environmental compliance The proposed location for temporary storage of construction materials is is near v.Rotino on the left side from the road Makazi Bitola.

Before the start of the construction activities, the Contractor shall prepare the Work Organization Plan which will define the timframe, dinamyc and the implementation methodology for construction activities, including supply of construction materials, amounts/volumes, and location of affiliated facilities (asphalt plant, access roads). The Plan will also indicate whether there are any environmental sensitive in the vicinity of those facilities, which might require additional mitigation measures.

5. Environmental impacts

This project (road section Bitola – Makazi) will be implemented on existing road, only rehabilitation activities without widening of the road section are foreseen. Impacts on basic environmental media and areas will occur in two phases (construction/rehabilitation and operation). Most of environmental impacts will occur during construction phase (rehabilitation works). Therefore, environmental management in the construction phase is the main content of this ESAR.

The following environmental impacts are expected during the rehabilitation:

- fugitive emission of dust from the construction activities;
- emission of exhaust gasses from the construction machinery;
- municipal, construction waste;
- waste water produced by construction workers;
- noise and vibrations from the construction machinery;

The following impacts are expected in the operational phase:

- exhaust gasses from mobile sources (vehicles);
- storm water;
- noise.

5.1 Air emissions

Constructive phase (rehabilitation)

Emission of harmful pollutants in to the air is expected during the process of rehabilitation and exploitation of road section.

During the process of rehabilitation of road section i.e demolition of old damaged pavement, scraping of the old pavement and its removal, clearing of the drainage culverts, ditches, operation of construction mechanization and transport of construction material and construction waste, the following air emissions are expected to occur: fugitive emission of dust from clearing the section, emission of exhaust gasses from mobile sources of pollution - construction machinery and fugitive emissions of volatile organic compounds from applying bituminous emulsion and asphalt mixture.

From all the above mentioned impacts, the fugitive emission of dust is the most important in terms of environmental impact. During the preparation of the site, the dust emitted from the mechanical operation of construction machinery and combustion of fuel affects the nearby and distant environment depending on the size (aerodynamic diameter of the particles) as well as the weather conditions during the period of activities. The impact of the fugitive dust emission will be additionally intensified by the emission of exhaust gasses from the construction machinery.

The fine dust, i.e. inhalable particles with diameter D≤2.5μm that are created during combustion of fuel in motor vehicles are transffered at a greater distance and have a chemical composition, i.e. contain organic compounds and heavy metals, which has negative impact on the human health and the environment.

The following table presents the limits and margin of tolerance for suspended dust with a diameter of 10 micrometers PM10, according to the National Plan for protection of ambient air in the Republic of Macedonia, which was prepared in accordance with transposed EU legislation.

Polluting substance	Average period	Limited value to be reached in 2012.	Allowed number of exceeding during the year	Margin of tolerance for 2010	Limited value for 2010	Threshold of alert
PM10	24 hours	50 µg/m3	35	0 µg/m3	50 µg/m3	
	1 year	40 µg/m3	0	0 µg/m3	40 µg/m3	

Table 5 Limits and margin of tolerance for suspended dust PM10

The fugitive emission of volatile organic components from the use of bitumenous emulsion and asphalt mixture will have less influence, because these compounds are easily evaporative and retain shortly in the air.

Gasses and pollutants are emitted in the ambient air through the system for disposal of waste gases, from vehicles and construction machinery on-site. The quantity and composition of exhaust gases depends on several parameters such as the type and age of vehicle, the performance of vehicle, the type of used fuel, features of the fuel in the distribution network, the presence of additives, the degree of combustion of fuel, etc.

SO_2, CO_2, H_2O and aromatic hydrocarbons occur during the complete combustion of fuel, while Pb_2O_3, etc. occur when using catalysts. CO, hydrocarbons, suspended dust, etc. occur during the incomplete combustion of fuel. During a long-term exposure to these toxic substances, they have negative effect on the human health. The smoke affects the respiratory organs and the skin, the lead affects the respiratory and central nervous system as well as the blood system and bones. The particles that occur during the process of fuel combustion also have a carcinogenic effect.

The following table presents the limit values for the pollutants from construction machines, in accordance with the Directive 97/68/EC:

Table 6 Limit values for pollutants emitted by the construction machinery (Directive 97/68/EC)

Motor power	CO (g/kWh)	HC(g/kWh)	NOx (g/kWh)	PT(PM) (g/kWh)
130 ≤ P ≤ 560	5.0	1.3	9.2	0.54
75 ≤ P ≤ 130	5.0	1.3	9.2	0.7
37 ≤ P ≤ 75	6.5	1.3	9.2	0.85

The geomorphological and weather conditions have influence on the concentration of emitted pollutants in the air i.e. the pollution of the ambient air in the region.

However it is important to underline that along the subject road section there is no residential areas and other sensitive receptors where impacts can be serious, the nearest settlement to road section envisaged for rehabilitation is Kazhani on approximately 100 m distance.

Operational phase

In operational phase effect on the air quality will occur during traffic on road section.

The subject road section Bitola – Makazi is already existing part of the state road – A3, where the traffic had influenced air quality for decades, therefore there is not expected additional effects on the air quality.

5.2 Water pollution

Constructive phase (rehabilitation)

During rehabilitation of the road section the water pollution can be physical, chemical and biological. The physical pollution is manifested through presence of solid particles from debris of soil and sand, solid particles from tire friction, debris from crashes, etc. The presence of grease and oils is physical pollution with liquid materials. By washing out the road surface, solid particles precipitate in the gutters and drains where they can cause blockage, while grease and oils float on the surface and reach in to the receptor. They create a film that prevents the supply of oxygen in the watercourse, which prevents the normal development of the biolife in the receptor. The chemical pollution occurs as a result of dilution of the pollutants present in the air. These pollutants are result of the exhaust gasses from vehicles, emission of pollutants from the nearby industrial and processing facilities, dissolution of individual components from the surrounding land, from the use of agrochemical substances and pesticides, animal and plant waste. The chemical pollution can be manifested as strong–acidic, weak–acidic neutral environment and all variations from strong–base to strong–acidic environment.

The biological pollutions are result of disintegration of organic materials that are used as food for various microorganisms. They can be a result of thrown food from reckless traffic participants, wind-blown leaves and other biodegradable waste, feathers and other substances that are present in the immediate surrounding.

The mechanical contaminants from the washing of the ground during heavy rainfall and flowing of surface water will cause filling of the riverbeds and water turbidity, which will reduce the penetration of light into larger depths and change of the living conditions in the aquifer. The change of the surface and underground water quality will also affect the usual use of water for different purposes by the population and industrial capacities.

The most dangerous pollutants for surface and underground waters are persistent organic components and harmful metal compounds. In the vicinity of the subject road section there is no any watercourses which will be affected from the project activities.

But, however it is important to mention that there are not any watercourses which may be affected from this project activities.

Operational phase

As we mention before, there are not any watercourses which may be affected from this project activities. (The nearest water course to road section envisaged for rehabilitation is accumulation Strezhevo, on approximately 5 km distance from project activities.)

5.3 Waste generation

The waste management is one of the most serious environmental problems in the Republic of Macedonia. The regular waste collection service is limited only to the urban areas, and very little attention is paid to the rural areas, 70% of the total urban population receives regular waste collection service and only 20% of the population in rural areas is covered by the service.

The municipal waste management is entirely controlled by the local government. It is directly connected with the urban plans for use of the local land and should be in accordance with the national strategic documents – the National Plan for Waste Management and the National Strategy for Waste Management as well as other relevant documents.

Proper waste management according to the generally accepted international norms will reduce the waste impact on soil (through uncontrolled waste dumping), underground water (directly contaminated over time from uncontrolled waste disposal) and air (through waste burning on open air).

Public Utility Company (PUC) "Vodovod" Bitola and Public Utility Company (PUC) "Proleter" Resen are responsible for the collection and disposal of municipal waste for the settlements in municipality of Bitola and municipality of Resen. Generated waste will be disposed at nearest landfill "Meglenci" (Bitola) located at a distance of ~ 20 km from the subject location.

Constructive phase (rehabilitation)

During the construction phase (rehabilitation) of the road section mixed municipal waste will be generated from the employees and construction waste from the foreseen rehabilitation activities.

According to the Law on Waste Management ("Official Gazette of RM" No. 09/11), the generators of waste shall, to the greatest extent possible, avoid waste generation and reduce the harmful effects of waste on the environment, life and human health.

The waste generators are responsible to sign separate agreement for collection and transportation of the waste with waste service provider "Vodovod" Bitola and Public Utility Company (PUC) "Proleter" Resen. The wastes will be transported by specialized vehicles designed for waste transportation and disposed on the nearest landfill, i.e. landfill "Meglenci" near Bitola.

The types of waste that will be generated during the construction phase of road section as well as the managing method for the different types of waste are presented in the following table:

Table 7 Types of waste and quantities

Phase	No.	Type of waste	Number from the List of waste types (Official Gazette no.100/2005)	Amount of waste per year expressed in tones or liters	Method of waste management (processing, storage, transfer, disposal, etc.)	Name of the legal entity that manages the waste and location for disposal of waste (landfill)
Construction phase	1	Mixed municipal waste	20 03 01	Cannot be determined at this phase	Temporary disposal in PVC bags, to its removal in containers located nearby	PUC "Vodovod" Bitola and PUC "Proleter" Resen
	2	Soil contaminated by eventual leakage of oil from the construction machinery	17 05 05*	Cannot be determined (only in an emergency)	Engagement of authorized legal or physical entities which have license for management of hazardous waste issued by MOEPP	Legal or physical entities
	3	Construction debris (Depending on the Detailed Design)	17 03 02	Cannot be determined at this phase	Disposal to nearest landfill (near v.Meglenci)	PUC "Vodovod" Bitola and PUC "Proleter" Resen

*Hazardous waste according to List of waste types ("Official Gazette of RM"No.100/05)

Operational phase

During the operational phase of the road section adverse impacts on the environment are not expected, only small amount of organic waste is expected (from clearance of the culverts), which waste will be collected from institution responsible for maintenance of this road section.

5.4 Soil contamination

The impacts on the soil during the construction phase of road section Bitola - Makazi are expected to be mitigatable with proper implementation of measures for protection of the soil during construction.

During rehabilitation activities following impacts can be expected:

- Imission of dust from cleaning of the section;

- Imissions of exhaust gasses from the construction machinery that will be present on the site;

- Leakage of fuel and lubricants from the construction machinery engaged during the construction activities, which may affect the soil and also cause a pollution of underground water;

- Pollution of underground water and soil might occur in the case of accident.

At the site the Contractor shall introduce good construction practice to prevent bitumen entering channels or disposed into ditches or any waste disposal site, to develop procedure for protection against spills (any spill to be immediately cleaned up) and for proper handling of contaminated soil according to legal environmental requirements. The bitumen storage and mixing area must be confined, gravel or sand covered and effectively protected against spills. The environmental permit (IPPC) issued to the proposed asphalt plant by MoEPP requires the implementation of appropriate mitigation measures, including setting the Maximum Permissible Volumes (MPV) for emissions into air, soil and water to be in accordance with BREFs – Best Available Techniques (BAT) reference documents. According to Article 14(3) of the IED (Industrial Emissions Directive (IED, 2010/75/EU), BAT conclusions shall be the reference for setting the permit conditions to installations covered by the Directive.

Operational phase

During the operational phase adverse impacts soil are not expected, however in case of accidental spills Contractor should develop procedure for protection against spills (any spill to be immediately cleaned up) and all contaminated soil must be properly handled according to legal environmental requirements. Contaminated soil should be treated as hazardous waste in accordance with Article 57 (General rules for hazardous waste handling and management) - Law on waste management.

5.5 Noise, vibration and non-ionizing radiation

Construction phase (rehabilitation)

During the constructive phase of the road section, the maximum allowed noise levels will be multiple exceeded.

The noise that will occur during the construction phase of the road section Bitola - Makazi appears as a result of the operation of construction machinery that will be engaged during the construction phase, i.e. vehicles for delivery and transportation of construction materials and the machinery used for construction activities. The significance of the impact will depend mostly on the type of equipment, and technical features of the construction machinery.

The distance from populated areas, geological conditions and terrain configuration are crucial for the noise impact on the environment.

The meteorological conditions have a great influence on the noise intensity and air shocks. The air shocks are influenced by the wind direction and speed, while the sound spreading is influenced by the wind speed and temperature in a function of height and configuration of the terrain.

The wind has effect on the increasing of the sound intensity, i.e. the increasing of sound intensity is almost always in the direction of the wind. The influence of the wind on the noise intensity is highest during the winter. The positioning of road section Bitola - Makazi and the distance from the nearest receptors - households, etc. is crucial for the noise impact on the environment.

Along the subject road section there are not residential areas and other sensitive receptors where impacts can be serious, the nearest settlement to road section envisaged for rehabilitation is v.Kazhani on approximately 100 m distance.

Table 8 presents the list of sources of noise, vibration and non-ionizing radiation.

Table 8 List of sources of noise, vibration and non-ionizing radiation

Source of emission	Type of emission (noise, vibration or non-ionizing radiation)	Equipment - device with a description of the maximum power	Emitted noise intensity (dB) expressed through index value of the equipment	Intensity of vibrations and non-ionizing emitted radiation	Emission periods (number of hours per day)
Heavy vehicles	Noise (85 dB)	Bulldozer Dredger Track	/	/	8

The data and comparative analysis are showing that the level of noise during the construction phase will exceed the limit values, i.e. the noise will have a negative impact on the environment. The noise intensity and its impact on the environment will depend on the scope and duration of construction activities.

However, it should be taken into consideration that this section does not pass through any settlement or sensitive receptors of noise, therefore, the noise mitigation measures can be easily identified. The limit values for the basic indicators of noise in environment are defined with the Rulebook for limit values of the noise level ("Official Gazette of RM"No.147/08). According to the degree of protection from noise, the limit values for the basic indicators of noise in environment caused by different sources should not be higher than:

Table 9 Noise level per area

Area differentiated by the degree of noise protection	Noise level expressed in dB (A)		
	Ld	Lv	Ln
Area of first degree	50	50	40
Area of second degree	55	55	45

Area of third degree	60	60	55
Area of fourth degree	70	70	60

Legend: -Ld - day (period from 07:00h to 19:00h), -Lv - evening (period from 19:00h to 23:00h), -Ln - night (period from 23:00h to 07:00h).

The areas according to the degree of noise protection are defined in the Rulebook for locations of measurement stations and measuring points (Official Gazette of RM no.120/08).

Area of I degree of noise protection is area intended for tourism and recreation, area nearby hospitals, areas of national parks and natural reserves.

Area of II degree of noise protection is area that is primarily intended for residence, i.e. residential region, area nearby buildings designed for educational activity, facilities for social protection intended for accommodation of children and elder persons, facilities for primary health protection, area of playgrounds and public parks, area of public greenery spaces and recreational area, areas of local parks.

Area of III degree of noise protection is area where activities in the surroundings are allowed and the causing of noise is less considered: trade–business–residential area, which is also designed for accommodation, i.e. area with buildings that have protected spaces, crafts and related production activities (mixed area), area designed for agriculture activities and public centers for administrative, commercial, service and catering activities.

Area of IV degree of noise protection is area where activities in the surroundings are allowed, which can cause interference with noise, area without apartments, designed for industrial and crafts or other similar production activities, transport activities, storage activities, service and communal activities that are causing bigger noise.

According to the degree of noise protection the project falls under the IVth degree of noise protection where activities in the surroundings are allowed, which can cause interference with noise, area without apartments, designed for industrial and crafts or other similar production activities, transport activities, storage activities, service and communal activities that are causing bigger noise. There are no settlement and sensitive areas in the vicinity of the subject section. Due to that fact there are no expected negative impacts as a result of noise that will occur as the result from the traffic on the section.

Operational phase

With the rehabilitation of the section i.e. setting of new asphalt layer, decrease the existing noise levels along the road section is expected. Regardless of the expected decrease of noise levels in phase of Detail Design it is necessary to do measurements of noise levels and on base of measurement results and propagation models will be determined whether there is need for design of noise barriers. During the construction activities vibrations will be caused by the activities of the construction and the transport mechanization.

5.6 Social impacts

The project does not acquire the land acquisition therefore there are not any social impacts due to land acquisition and resettlement issues. During rehabilitation activities some health issues for the local population may emerge due to increased noise, fugitive emission of dust, exhaust gases etc., and occupational, health and safety issues for the employees.

Daily habits of the local population (using the route for transport of goods, access to properties etc.) could be potentially disturbed during rehabilitation activities, and so Traffic Management Plan should be prepared by the Contractor for regulation of traffic during these activities.

In general social impacts will be positive due to the rehabilitation process, traffic conditions will be improved and traffic safety will be increased.

6. Environmental and social management plan

The main mitigation activities are described in **Table 10**. Since this is a project for road rehabilitation, good practice and standard mitigation measures are required along the road.

Mitigation Plan identifies the environmental impacts during rehabilitation and operational phase, mitigation measures, costs and responsibilities for implementation of mitigation measures. Mitigation is an integral part of impact evaluation. It looks the better ways of taking actions so that the negative impacts are eliminated or minimized.

Table 10 Mitigation Plan

	Issue	Mitigation measures	Cost		Institutional Responsibility		Comments
			Install	Operate	Install	Operate	
Phase							
Detailed design	**Decision for preparation of Environmental Impact Assessment Report or EIA Study**	Preparation of Notification for intention of project implementation and its submission to the competent authority – MOEPP.		**N.A.**	Engaged Consultant with PESR	PESR/MOEPP	MOEPP will make decision if EIA Study or Environmental Impact Assessment Report is required. PESR/Consultant will respect the decision.
Detailed Design /or Construction phase	**Air pollution, landscape disturbance** etc. from borrow pits, waste disposal sites	Ensuring that the materials are purchased from the sites which have all necessary licenses and permits Appropriate selection of the locations of - borrow pits (near the road section – existing ones (one is between villages Rotino and Bratin Dol on the right side from the subjected road in direction from Makazi to Bitola and the other one is on the left side from the road Makazi Bitola southwest from	**N.A**	**N.A.**	Consultant/Contractor	Contractor/ PESR/Local Self Government	During preparation of detailed design the consultants shall confirm the proposed locations for borrow pits, landfills, according to the geology, hydrology etc., costs will be included in overall costs for Detailed Design. In case the Contractor would suggest locations other than those identified by this EAMP, Contractor is obliged to obtain all relevant environmental and concession permits issued by MoEPP and other relevant authorities prior to start of rehabilitation activities. Also, the EA/EMP should be amended for the environmental analyses of the newly proposed borrow areas. The contractor shall make all necessary arrangements for using the waste disposal sites identified as acceptable by the EA/EMP.

		v.Gorno Srpci), - Location of waste disposal sites the nearest location for waste disposal is nearby v.Meglenci, so all negative impacts to be avoided or minimized.					
Construction/ rehabilitation	**Traffic safety** Impairment of traffic during construction Endangering of traffic outside working hours, placement of traffic signs	The contractor will provide: - information to the public about the scope and schedule of construction activities and expected disruptions and access restrictions - measures to allow for permanent adequate traffic flow around construction areas; - adequate signalization, traffic safety signs, barriers and flag persons for traffic control; - appropriate lighting and well design safety signs	N.A.	N.A.	Contractor	Contractor	Traffic plans shall be approved by road police. Road police should also assist in law enforcement.
Construction/ rehabilitation	**General Work Safety**	According to the Macedonian legislation in the field of occupational, health and safety (Law on occupational, health and safety - Official Gazette of Republic of Macedonia“ no. 92/07,	**1 000 €**	**N.A.**	Engaged Consultant for preparation of OHS Plan/ Contractor	Contractor	One of the requirements in the TOR for selection of Contractor could be implementation of OHSAS 18001 that will enable preparation of appropriate procedures in terms of accidents, fire and chemical spill, and

		136/11, 23/13, 25/13, Law for fire protection Official Gazette of Republic of Macedonia" no 67/04, 81/07, Law on protection and rescue – Official Gazette of RM no. 36/04, 49/04, 86/08, 124/10)The Contractor has an obligation to prepare a Plan for Occupational Health and safety for temporary mobile construction sites in which protection measures in a case of accident, fire and chemical spill containment, has to be included such as emergency procedures.					preparation of emergency responses
Construction/ rehabilitation	**Air pollution** fugitive emission of dust, emission of exhaust gases from construction mechanization	Conduct construction activities with a certain time frame and dynamics i.e. 8 working hours in total, starting from 7 am to 3 pm; Preparation of Plan for organization of construction activities on site (for traffic regulation etc.); Avoiding dust and fugitive emissions: use of dust control methods, such as covers, water suppression or increased moisture content for open location for storage of materials; Replacing older vehicles with newer; Turn off mechanization when is not necessary.	**N.A.**	**N.A.**	Contractor	Contractor	

Construction/ rehabilitation	Potential pollution of **soil** and **groundwater**/ contamination of **surface water**	Organize and cover material storage areas, near the section on proper location Considering the fact that the project covers only rehabilitation activities and taking into account the costs for asphalt bases, the concrete asphalt and other similar work will be performed on the concrete base near v.Kosel. There aren't any watercourses which will be affected from the project activities; Washing of the construction mechanization to be done on proper location designated and equipped for such type of activities not on the site; Waste disposal on adequate locations near to the subjected section. The nearest location for waste disposal is nearby v.Meglenci; Proper handling of lubricants, fuel; Ensure proper loading and storage of fuel, lubricants and fuel in accordance with adopted BREF Emission from storage (o7.2006) and maintenance of equipment.	**N.A.**	**N.A.**	Contractor	Contractor	Contractor to submit a separate plan describing the location for storage of construction material, location of mobile toilets and layout for location of his work camp and providing details on the management of waste, the storage and handling of fuel, diesel, oil and other toxic / harmful substances.
Construction/ rehabilitation	**Waste generation** (municipal waste from engaged employees,	Implementation of key principles for sustainable waste management; Placement of appropriate		N.A.	Contractor	Contractor	One of the requirements in the TOR for selection of Contractor should be implemented ISO 14001 and according to that

	construction waste etc.)	containers for collection of municipal waste on location; Handling waste to legal/physical entities which have license for waste management issued by MOEPP Transportation of the collected waste to the nearest landfill (near v.Meglenci) in coordination with local authorities for waste management.	**600 €**				Contractor to prepare instructions/procedure for waste management. Operating costs in this phase cannot be precisely determined they depend of specified prices in the concluded Contracts with physical/legal entities that have license for such type of activities.
Construction/ rehabilitation	**Noise** and **vibrations** from construction activities	The need, type and design of noise mitigation measures on the segment passing village Kazhani will be defined by the noise analysis to be implemented as part of the detailed design. General mitigation measures will be implemented: - Limit activities to daylight working hours; - Turning off the engines of vehicles and construction machinery when they are not in use; -Informing the local population about the performance of the construction activities in terms of time and location; - Equipment operating with noise mufflers etc.	**N.A.**	**N.A.**	Contractor	Contractor	Control of technical features of the construction mechanization
		The Contractor shall use existing asphalt plants/or	**N.A.**	**N.A.**	Contractor	Contractor	Conditions for selection of subcontractors for material supply

Construction/ rehabilitation	**Material supply** *Asphalt Plant* Dust, fumes, worker's health & safety, ecosystem disturbance; Borrow pits Fugitive emission of dust, disturbances of water quality etc.	submit requirement for official approval or valid operating license to competent authority. He shall submit a method statement on handling of bitumen spills prior to the commencement of works. At the site the Contractor shall take appropriate provisions (good construction practice - Contractor should ensure sites appear professional and well managed, Inform the community, respecting those affected by work activities, Identify and managed environmental issues, attain the highest level of safety performance requirements) to assure that bitumen may not enter into dry or running stream beds or channels nor may it be disposed of in ditches or any waste disposal site, to develop procedure for protection against spills (any spill to be immediately cleaned up) and all contaminated soil must be properly handled according to legal environmental requirements and as per Technical conditions for design of regional roads and highways – Published by PESR of R.Macedonia.					to be included in the TOR. All materials are calculated in the BoQ.

		Contaminated soil should be treated as hazardous waste in accordance with Article 57 (General rules for hazardous waste handling and management) - Law on waste management. The bitumen storage and mixing area must be effectively protected against spill. Given the fact that as an asphalt plant will be used the plant nearby v.Kosel which has obtained IPPC permit from MOEPP, all activities which cover bitumen storage and mixing area will be performed with appropriate measures for environmental protection contained in IPPC; Contractor should use existing borrow pits the one is between villages Rotino and Bratin Dol on the right side from the subjected road in direction from Makazi to Bitola and the other one is on the left side from the road Makzai Bitola southwest from v.Gorno Srpci or buy materials at licensed separation installation (with integrated ecological permit issued by MOEPP/Competent authority).					

Construction/ rehabilitation	**Material transport** *Asphalt* (Dust, fumes) *Construction material* (Dust)	- Cover truck load; - Wet or cover truck load 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. Trucks shall be covered to minimize dust and material spillage. Contractor should prepare a plan for traffic regulation in order to provide the limit value of the speed of construction mechanization for material transport in accordance to the Law on Public Roads.	**N.A.**	**N.A.**	Truck operator Contractor	Truck operator Contractor / PESR State Environmental Inspectorate	
Construction/ rehabilitation	**Construction site** (Noise disturbance to population and employees)	The subjected road belongs to area of IV degree of noise protection - is area where activities in the surroundings are allowed, which can cause interference with noise, area without apartments, designed for industrial and crafts or other similar production activities, transport activities, storage activities, service and communal activities that are causing bigger noise according to the Rulebook for locations of measuring stations and measuring points ("Official Gazette of RM "No.120/08) and the limit value for this kind of area is	**N.A.**	**N.A.**	Contractor	Contractor	

		70 dB for day and evening and 60 dB for night according to the Rulebook for limit values of noise level in environment ("Official Gazette of RM" No.147/08).					
Construction/ rehabilitation	**Worker's safety and health**	Provide workers with safety instructions and appropriate personal protective gear such as protective clothing, safety boots, helmets, gloves, goggles, ear protection, etc.; Preparation of Plan for occupational health and safety for temporary construction mobile sites according to Law on occupational health and safety ("Official Gazette of RM" no. 92/2007, 136/11, 23/13, 25/13, 137/13)	**N.A.**	**N.A.**	Contractor	Contractor	The Contractor should appoint an environment, health and safety manager in the Construction /Supervision Team Personal
Construction/ rehabilitation	**Disruption of local population**	Preparation of Traffic Management Plan for regulation of traffic during these activities.	**500 €**	**N.A.**	Contractor	PESR	
Operation/ Exploitation	**Increased volume and speed of traffic** (Emissions of exhaust gases from vehicles, increased noise levels, water and soil quality (suspended solids, organic compounds, heavy	Installation of environmental protective measures: - use of standardized fuel will reduce the emission of exhaust gases. - the rehabilitation of the road section will reduce the noise level provoked by the traffic along the	**N.A.**	**N.A.**	Contractor	PESR /Maintenance unit "Makedonija Pat"	Costs in this phase cannot be estimated additional surveys has to be done and measurements for emitted noise etc, during the further operation of the road section. The costs shall be planned within the PESR annual Budgets (if required).

	metals, pH)	road. - (monitoring of pollution and additional mitigation measures if required).					
Operation/ Exploitation	Road safety (Increased vehicle speed)	Maintenance of traffic signs for speed limit.	**N.A.**	**N.A.**	Contractor	PESR/ Maintenance unit "Makedonija Pat"	Costs in this phase cannot be estimated.

Important note: All applicable costs for mitigation measures envisaged with this ESAR shall be quantified by the Tenderer and shall be part of the Bill of Quantities (BoQ).

7. Monitoring activities

It is essential to design the monitoring program and monitoring frequency appropriately in order to be able to demonstrate both the overall performance of the project works as well as the short term impacts due to peak construction activities. More specifically, as the integral and critical part of the ESMP, the environment monitoring program should have the following objectives:

- Determine the actual extent of the impacts;
- Control impacts which are generated from construction process, and operational phase;
- Check environmental pollution standards applied to the project during construction;
- Check and supervise implementation of environmental protection solutions during construction;
- Suggest mitigation measures in case of unexpected impacts;
- Assess the effect of mitigation measures in construction and operation stages.

The project will implement an environmental monitoring plan: (i) to monitor the contractor‘s work during project implementation in order to check contractual compliance with specified mitigation measures, and subsequently (ii) to assess the actual environmental impacts of the project over the years following completion of the various project components. The main components of monitoring plan include:

- Environmental parameters to be monitored;
- Specific areas, locations and parameters to be monitored;
- Applicable standards and criteria;
- Duration and frequency;
- Institutional responsibilities; and
- Costs.

Table 11 Monitoring Plan

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	Cost		Responsibility	
					Install	Operate	Install	Operate
Construction phase								
Traffic safety Safety during construction	Existence of traffic management plan; traffic patterns	At and near job site on so called temporary mobile construction 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	As per contract	/	Contractor	Supervision Contractor
General Work Safety Safety of the employees, visitors on site	Existence of Plan for occupational health and safety for so called temporary mobile construction site	On temporary mobile construction site	The status of implementation of foreseen measures in the Plan for employees protection (supply with personal protective equipment etc.) number of injures at work place, appointed person/officer for health and safety on site	Every day during construction activities	As per contract	/	Contractor	Supervision Contractor State Inspector for health and safety
Air pollution (fugitive emission of dust, emission of exhaust gases from construction mechanization)	Exhaust fumes Dust	At site At site	Visual inspection Visual inspection	During operation of the mechanization During material delivery, and other construction activities	As per contract	/	Contractor	Supervision Contractor
Potential pollution of **soil** and **groundwate**r/ contamination of **surface water**	Soil quality	At site	Visual inspection nearest area for spills and leaks which might impact soil quality (and potentially groundwater	Periodically during construction activities		/	Contractor	Contractor/ MOEPP

Waste generation (municipal waste from engaged employees, construction waste etc.)	Implemented system for waste management, placed containers for waste collection	At site	Visual inspection Concluded contracts with legal / physical entities who have a permit for waste management	Every day	/	/	Contractor	Supervision MOEPP
Noise and **vibrations** from construction activities	Noise levels Technical features of the construction equipment	At site (near – households etc.) according to the legislation In authorized services and on site	Measurements of emitted noise on several measurement points Visual inspection	Selection of several measurements points near sensitive receptors Every day	**850 €**	/	Contractor Licensed company	Supervision MOEPP
Material supply (asphalt plant, borrow pits)	Possession of official approval or valid operating license	At site, location of asphalt plant, borrow pits	Inspection	Before construction activities begin	/	/	Plant operator, borrow pit operator	Supervision
Material transport	Truck load covered	At site, location of borrow pits	Visual inspection	Unannounced inspections during work	/	/	Contractor	Supervision MOEPP
Construction site (Noise disturbance to population and employees)	Noise levels Technical features of the construction equipment Exhaust fumes Dust Disruption of local population	At site (near – households etc.) according to the legislation In authorized services and on site At site At site At site	Measurements of emitted noise on several measurement points (if required) Visual inspection Visual inspection Visual inspection State of Implementation of Traffic management plan	Once before construction activities, and once during construction activities Every day During operation of the mechanization During material delivery, and other construction activities Unannounced	As per contract	/	Contractor	Supervision MOEPP
Operation/Exploitation								
Increased volume and speed of	Vehicle emissions; noise levels;	Along the road section	Measurements of emitted noise, air quality	Once per year	**1000 €**			PESR/ Monitoring

traffic (Emissions of exhaust gases from vehicles, increased noise levels, water quality (suspended solids, organic compounds, heavy metals, pH)			on several measurement points			/		Contractor
Road safety (Increased vehicle speed)	Condition of traffic signs; vehicle speed	Along the road section	Visual observation; speed detectors	During maintenance activities; unannounced	/	/	/	PE Makedonija Pat

Important note: All applicable costs for Monitoring activities envisaged with this Monitoring Plan shall be quantified by the Tenderer/ Contractor and shall be part of the Bill of Quantities (BoQ).

8. Roles and responsibilities for implementation of ESMP

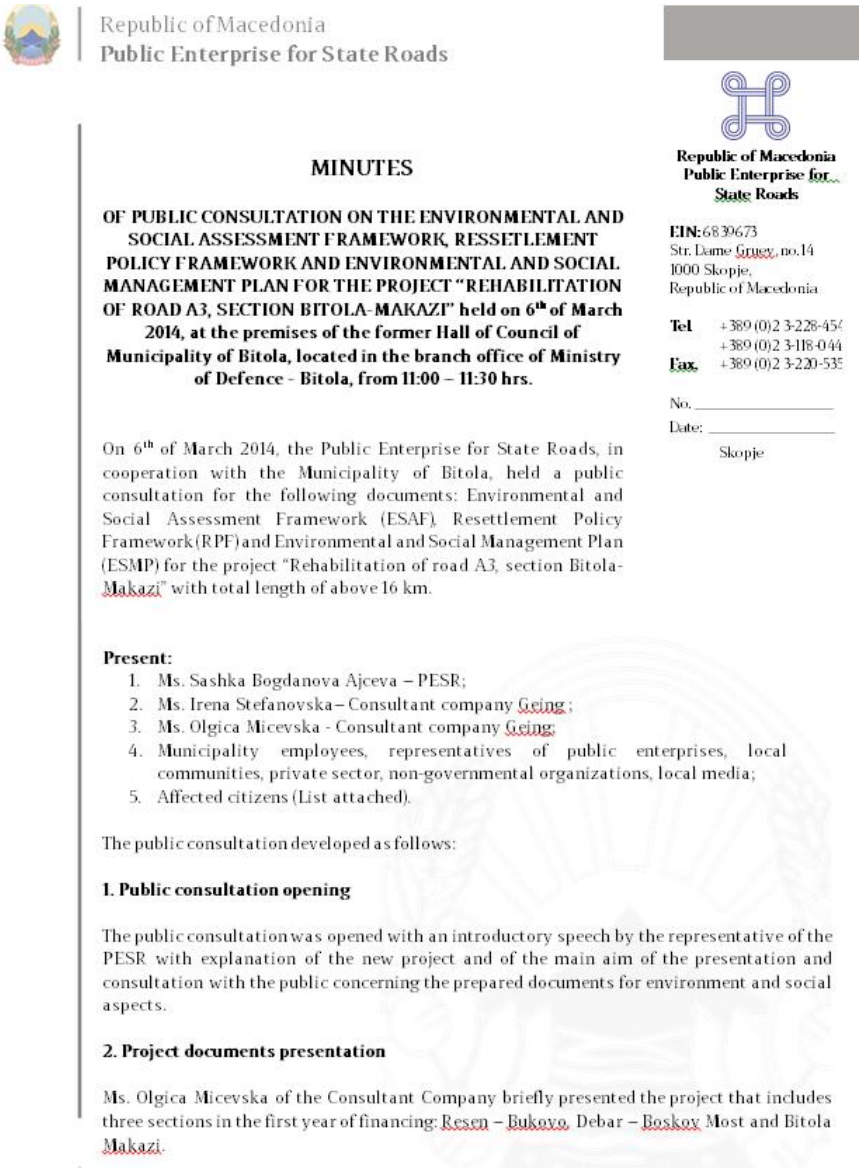
Table 12 Roles and Responsibilities for implementation of EMP

Company/Unit	Responsibilities
International Projects Management Unit - IPMU (PESR)	In coordination with EPSAU, this Unit 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 both the construction and operational phase. Specifically IPMU will: **i)** closely coordinate with local authorities in the participation of the community during project preparation and implementation; **ii)** monitor and supervise ESMP implementation including incorporation of ESMP into the detailed technical designs and bidding and contractual documents; **iii)** be in charge of reporting on ESMP implementation to the World Bank.
Environmental Protection and Social Aspects Unit (EPSAU) (PESR)	This unit is responsible for monitoring the implementation of WB's environmental safeguard policies in all stages and process of the project. Specifically, this unit will be responsible for: **i)** reviewing the subproject: EIAR, EMP, ESAR, RAP prepared by consultants to ensure quality of the documents; **ii)** helping IPMU incorporate ESMP into the detailed technical designs and civil works bidding and contractual documents; **iii)** helping IPMU incorporate responsibilities for ESMP 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.
Construction Contractor	Based on the approved ESMP, the Contractor will be responsible for establishing a site-specific ESMP for the construction site area, 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. 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 contractor's compliance with the ESMP requirements and the environmental specifications.
Supervision Consultant	The Supervision Consultant (SC) will be responsible for supervising and monitoring all construction activities and for ensuring that Contractors comply with the requirements of the contracts and the ESMP. The SC shall engage sufficient

Company/Unit	Responsibilities
	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 Environment Impact Assessment Report, and monitoring of the state of implementation of all foreseen measures for environmental protection in EIAR by the Inspectorate for environment.

9. ANNEXES

ANNEX 1 Minutes of meeting (public consultation)



Republic of Macedonia
Public Enterprise for State Roads

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No. _____
Date: _____
Skopje

MINUTES

OF PUBLIC CONSULTATION ON THE ENVIRONMENTAL AND SOCIAL ASSESSMENT FRAMEWORK, RESSETLEMENT POLICY FRAMEWORK AND ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN FOR THE PROJECT "REHABILITATION OF ROAD A3, SECTION BITOLA-MAKAZI" held on 6th of March 2014, at the premises of the former Hall of Council of Municipality of Bitola, located in the branch office of Ministry of Defence - Bitola, from 11:00 – 11:30 hrs.

On 6th of March 2014, the Public Enterprise for State Roads, in cooperation with the Municipality of Bitola, held a public consultation for the following documents: Environmental and Social Assessment Framework (ESAF), Resettlement Policy Framework (RPF) and Environmental and Social Management Plan (ESMP) for the project "Rehabilitation of road A3, section Bitola-Makazi" with total length of above 16 km.

Present:

1. Ms. Sashka Bogdanova Ajceva – PESR;
2. Ms. Irena Stefanovska – Consultant company Geing ;
3. Ms. Olgica Micevska - Consultant company Geing;
4. Municipality employees, representatives of public enterprises, local communities, private sector, non-governmental organizations, local media;
5. Affected citizens (List attached).

The public consultation developed as follows:

1. Public consultation opening

The public consultation was opened with an introductory speech by the representative of the PESR with explanation of the new project and of the main aim of the presentation and consultation with the public concerning the prepared documents for environment and social aspects.

2. Project documents presentation

Ms. Olgica Micevska of the Consultant Company briefly presented the project that includes three sections in the first year of financing: Resen – Bukovo, Debar – Boskov Most and Bitola Makazi.

Republic of Macedonia
Public Enterprise for State Roads

The prepared documents ESAF, RPF, and ESMP for the section Bitola-Makazi where explained according to the World Bank operating policy referring to environment and social aspects. The operating policy of the World Bank and national laws and legislation related to environment and social aspects were introduced to the auditorium.

3. Discussion

No participants were interested in discussing, thus Sashka Bogdanova Aiceva concluded the public consultation at 11:30.

Minute Taker:
Sashka Bogdanova Aiceva

ANNEX 2 List of participants at public consultation

Република Македонија
Јавно претпријатие за државни патишта

ЛИСТА НА УЧЕСНИЦИ НА ЈАВНАТА КОНСУЛТАЦИЈА ЗА ДОКУМЕНТИ ПОВРЗАНИ СО ЗАШТИТА НА ЖИВОТНАТА СРЕДИНА И СОЦИЈАЛНИТЕ АСПЕКТИ (СПОРЕД ПРОЦЕДУРИТЕ НА СВЕТСКА БАНКА) ЗА ПРОЕКТОТ „РЕХАБИЛИТАЦИЈА НА ДРЖАВЕН ПАТ А3, ДЕЛНИЦА: БИТОЛА – МАКАЗИ (16КМ)"

06 март 2014 година (четврток) - "Поранешна сала на Советот на Општина Битола, сместена во ПЕ на Министерството за одбрана" – о. Битола, почеток во 11.00 часот.

РЕД. БР.	ИМЕ И ПРЕЗИМЕ	ИНСТИТУЦИЈА ИЛИ ОРГАНИЗАЦИЈА/ ЗАНИМАЊЕ	E-MAIL /КОНТАКТ	ТЕЛЕФОН	ПОТПИС
1.	Зоран Серијановски	Општина Б-ла рок. на орг	zkomunalno@bitola.gov.mk	070/303316	[illegible]
2.	Јаковлиќ Александар	Општина Б-ла		075 405 434	[illegible]
3.	Горан Буреска	Општина Б-ла		076485742	[illegible]
4.	Цветанка Ристевска	Општина Битола		071348358	[illegible]
5.	Ирена Стефановска	ЦЦИРГ	stefanovska.i@gdi.gov.mk	012255178	[illegible]

Република Македонија
Јавно претпријатие за државни патишта

РЕД. БР.	ИМЕ И ПРЕЗИМЕ	ИНСТИТУЦИЈА ИЛИ ОРГАНИЗАЦИЈА/ ЗАНИМАЊЕ	E-MAIL /КОНТАКТ	ТЕЛЕФОН	ПОТПИС
6.	Олгица Мицевска	ГЕИНГ одговорен инженер по ЗЖС	micevska.o@geing.com.mk	071 355 951	[illegible]
7.	САШКА БОГДАНОВА АЏЦЕВА	ЈПДП	SASKA@roads.org.i	078330297	[illegible]
8.					
9.					
10.					
11.					
12.					
13.					