

Environmental and Social Management Plan
for the Sub-project:



Integrated program for tourism development in the Municipality of Kavadarci

Municipality of Kavadarci, 2019

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Introduction

The Local and Regional Competitiveness Project (LRCP) is a four-year investment program supported by the European Union using IPA 2 funds designed for competitiveness and innovation in R.N. Macedonia. It will be managed as a hybrid trust fund consisting of four components and will be implemented by the World Bank and the Government of the Republic of N. Macedonia. The project will provide funding for investment and capacity building to support sector growth, invest in destinations and create prosperity in certain destinations. At the regional and local level, the project will support selected tourism destinations in the country through a combination of technical assistance to improve destination management, infrastructure investment and investment in connectivity and innovation. The investment will be made through a grant scheme for regional tourism stakeholders, such as municipalities, institutions, NGOs and the private sector. The activities will be in accordance with the Environmental and Social Management Framework (ESMF) prepared for the needs of the Local and Regional Competitiveness Project (LRCP).

This Environmental and Social Management Plan is prepared for the activities carried out for the sub-project "Integrated Tourism Development Program in the Municipality of Kavadarci". The ESMP is an environmental document consisting of a project description, technical details, scope, environment and location, on the basis of which environmental and social risks are assessed and their avoidance and mitigation measures assessed. Implementation of mitigation measures addressing the identified risks and issues as well as monitoring plan defined in the ESMP is mandatory as is compliance with the national environmental and other regulation, and WB operational policies.

The realization of this sub-project offers opportunities for the municipality of Kavadarci to become a recognized tourist destination at national and international level. Attraction of the tourist destination Mihajlovo offers opportunities for tourism development. So far, numerous tourists from N. Macedonia, but also from abroad, have visited this tourist destination.

The subproject will offer the opportunity to establish business and tourist contacts with travel agencies in the Republic of N.Macedonia and this will increase the tourist offer to existing travel agencies and hotels and accommodation facilities (due to the likelihood that

tourists will be more interested in visiting the site) as well as opportunities for employment of the local population.

1. Project Description

The overall goal of this sub-project is to make Kavadarci municipality a recognizable tourist destination at national and international level.

Specific objectives of the sub-project are the following:

- Improvement of infrastructure
- Strengthening the capacity of tourist workers
- To attract tourists, visitors, students who will visit and explore Mihajlovo tourist destination
- Position Mihajlovo tourist destination on the tourist map of the Republic of N. Macedonia

The overall objective and specific objectives will be achieved through the following project activities:

1. Placing three wine gates with symbols that will express the wine character of Kavadarci. They will be located at the three entrances to the city - road way Rosoman-Kavadarci, road way to Prilep and to Negotino. Wine gates will be made from steel brackets which will be placed in reinforced concrete foundation, with dimension $h=6m$, $l=14,145 m$. On each of the gates, electric billboards which will have own solar panel will be placed .

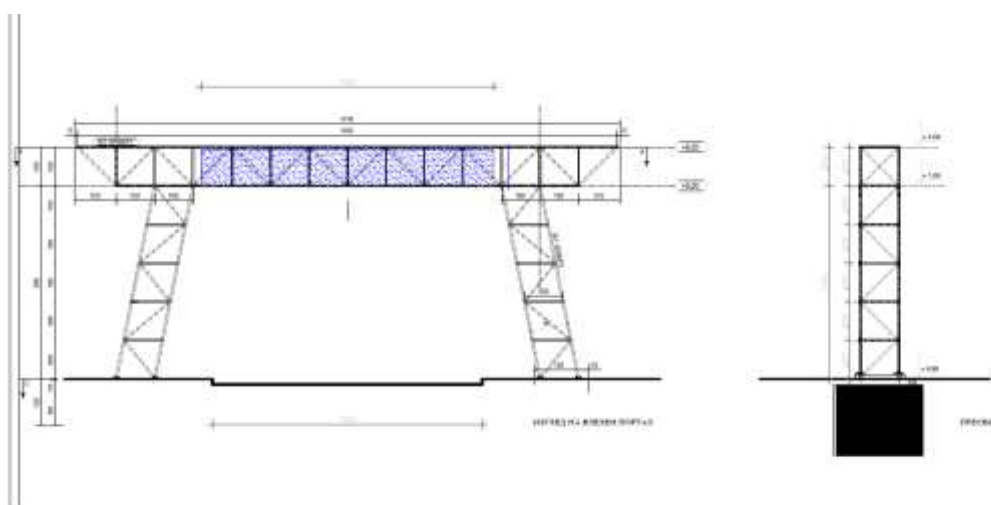


Figure 1 Design of the gates

2. Ensuring quick and safe access to the tourist destination Mihajlovo, through reconstruction of the existing local road to Mihajlovo 6355 meters in length. The part of the local road (Figures 1, 2, 3 and 4) that connects the tourist destination Mihajlovo with the regional road R29171, (km0 + 000.00 to km 6 + 355.10) is in bad shape, making it difficult to visit to this tourist site. This subproject foresees reconstruction activities on an already existing road, thus maintaining the length (6.36 km) and width of the roadway of 4.00 meters unchanged, so no extension activities are foreseen. The reconstruction of the road will take place in four phases:
 1. Preparatory works include: mark and secure the route, removal of existing asphalt and transport up to legal, licensed, landfill, removal of 10 to 15 cm gravel sub base, dismantling the existing concrete curbs and transport to legal landfill.
 2. Earthworks includes six stages: machine excavation of road base from **third, fourth and fifth category^{III}**, supply, transport and laying of crushed stone with material CBR $\geq 20\%$
 3. Upper structure – laying over the roadway with emulsion PB 200, supply, transport and laying of tampon layer F (0-63), supply, transport and laying of BNHS 16 asphalt layer d=7 cm (the new roadway), and supply, transport and assembling of new curbs (edges) 18/24/100 from concrete MB 40 on the concrete layer MB 20.
 4. Storm water drainage– Installation of new reinforced concrete culvert, (F 1000), and supply, transport and assembling of drainage pipe F 110.

Route of existing road subject to reconstruction and locations where the three wine gates will be installed are located on state owned cadastral parcels and there is no land expropriation activity.

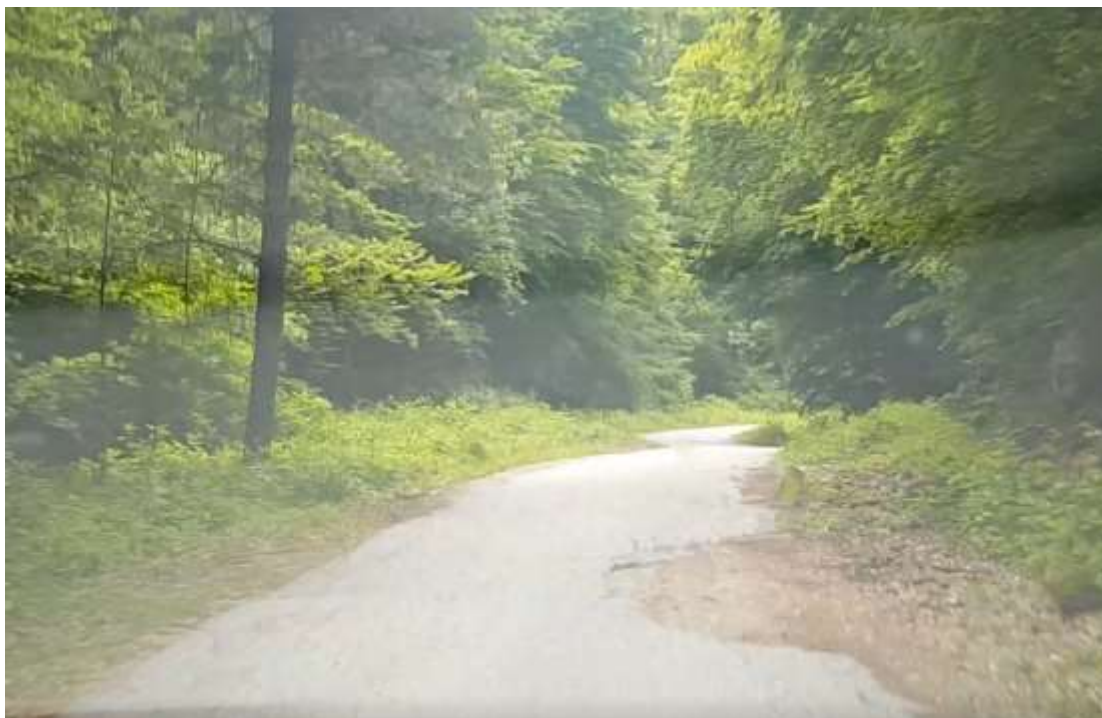


Figure 2 (Condition of existing local road)



Figure 3 (Condition of existing local road)



Figure 4 (Condition of existing local road)

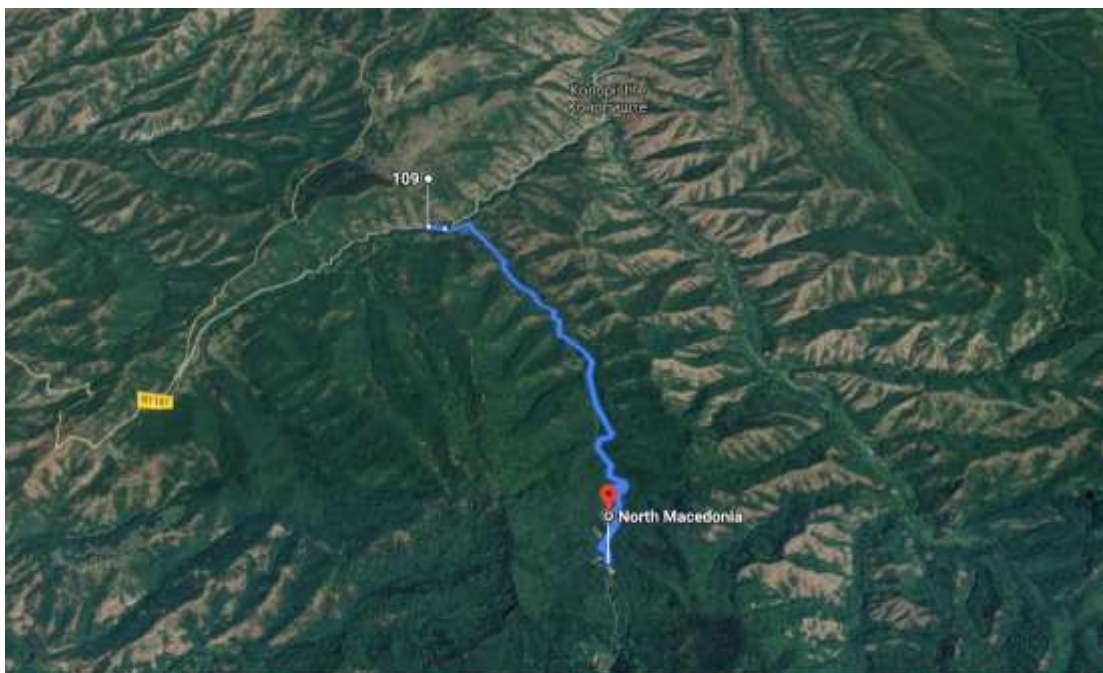


Figure 5: Satellite image of the route of local road to Mihajlovo envisaged for reconstruction.

2. Legal framework

2.1 National Environmental Impact Assessment Procedure for Project Development

The procedure for environmental impact assessment is prescribed in the Law on Environment (“Official Gazette of the Republic of N.Macedonia” No. 53/05, 81/05 24/07, 159/08 and 83/09; 124/10, 51 / 11,123 / 12, 93/13, 163/13, 42/14, 129/15 and 39/16 (Chapter 11 / Articles 76-94) where the requirements of the EU EIA Directives (Directive 85/337 / EEC as amended by the Directives) 97/11 / EC, 2003/35 / EC and 2009/31 / EC) have been transposed.

The procedure begins when the Investor (Project Proponent) intending to implement a project, submits a Project Intention Notice, in writing and electronically, to the Ministry of Environment and Physical Planning (MoEPP - Environment Authority), which is the responsible authority for the whole procedure. The Directorate of Environment within the MoEPP is obliged to respond to the specific request whether or not it is necessary to develop SEA (Strategic Environmental Assessment), EIA (Environmental Impact Assessment) or reduced Environmental Impact Assessment (EIA) - Environmental protection elaborate.

The procedure for determining the need for Project Environmental Impact Assessment (EIA) procedure is the stage at which the MoEPP decides whether an SEA, EIA or Elaborate should be prepared. For the development of projects that do not belong to the list of projects for which the EIA procedure must be carried out (small scale projects), it is necessary to prepare - Environmental protection elaborate (relevant to projects from category B project under WB OP 4.0.1 Environmental Impact Assessment Procedure).

2.2 National Environmental Assessment Procedure for Small Scale Projects

During the EIA (Environmental Impact Assessment) legal procedure in the stage of determining the project environmental impact assessment procedure, if the Ministry of Environment and Physical Planning decides that there is no need for implementation of the EIA, the investor should start the procedure for preparation of Environmental protection

elaborate. This procedure is mandatory for small-scale projects that cause short-term, small-scale, negative environmental impacts when the Ministry of Environment and Physical Planning, within the framework of the above decision, has determined that the need for Elaborate preparation is in accordance with the Rulebooks listed below (e.g. Reconstruction or construction of local streets, roads, construction of local water supply networks, sewers and wastewater treatment plant (low volume - less than 10 000 inhabitants, etc.).

There are two Rulebooks for the preparation of the Environmental protection elaborate (Environmental Impact Assessment Report) for small scale projects:

- Rulebook on the List of Projects for which the Investor and Elaborate should be prepared by the Ministry of Environment and Physical Planning (“Official Gazette of the Republic of N.Macedonia” No. 36/12);
- Rulebook on the List of Projects for which the Investor and Elaborate should be prepared by the Mayor of the Municipality or the Mayor of the City of Skopje (“Official Gazette of RM” No. 32 / 12).

The contents of the Environmental protection elaborate (EIA Report) should be in accordance with the Rulebook on the form and content of the Environmental protection elaborate (EIA Report), the procedure for their approval, as well as the manner of keeping the Register of Approved Elaborates (Official Gazette of RM no. 123/12).

The Environmental protection elaborate (EIA Report) contains the main features of the project activities, the main positive and negative environmental impacts that are highlighted by the current state of the environment for the specific location. The simplified Environmental Protection Program within Environmental protection elaborate (EIA Report) consists of a variety of measures that will prevent, mitigate and offset the negative impact on all environmental elements based on national environmental legislation and good international practice. It is not envisaged to have a public consultation on the preparation and acceptance of the Environmental protection elaborate (EIA Report). Figure 4 shows a simplified outline of the project environmental impact assessment procedure as well as the EIA Study / Elaborate approval authority.

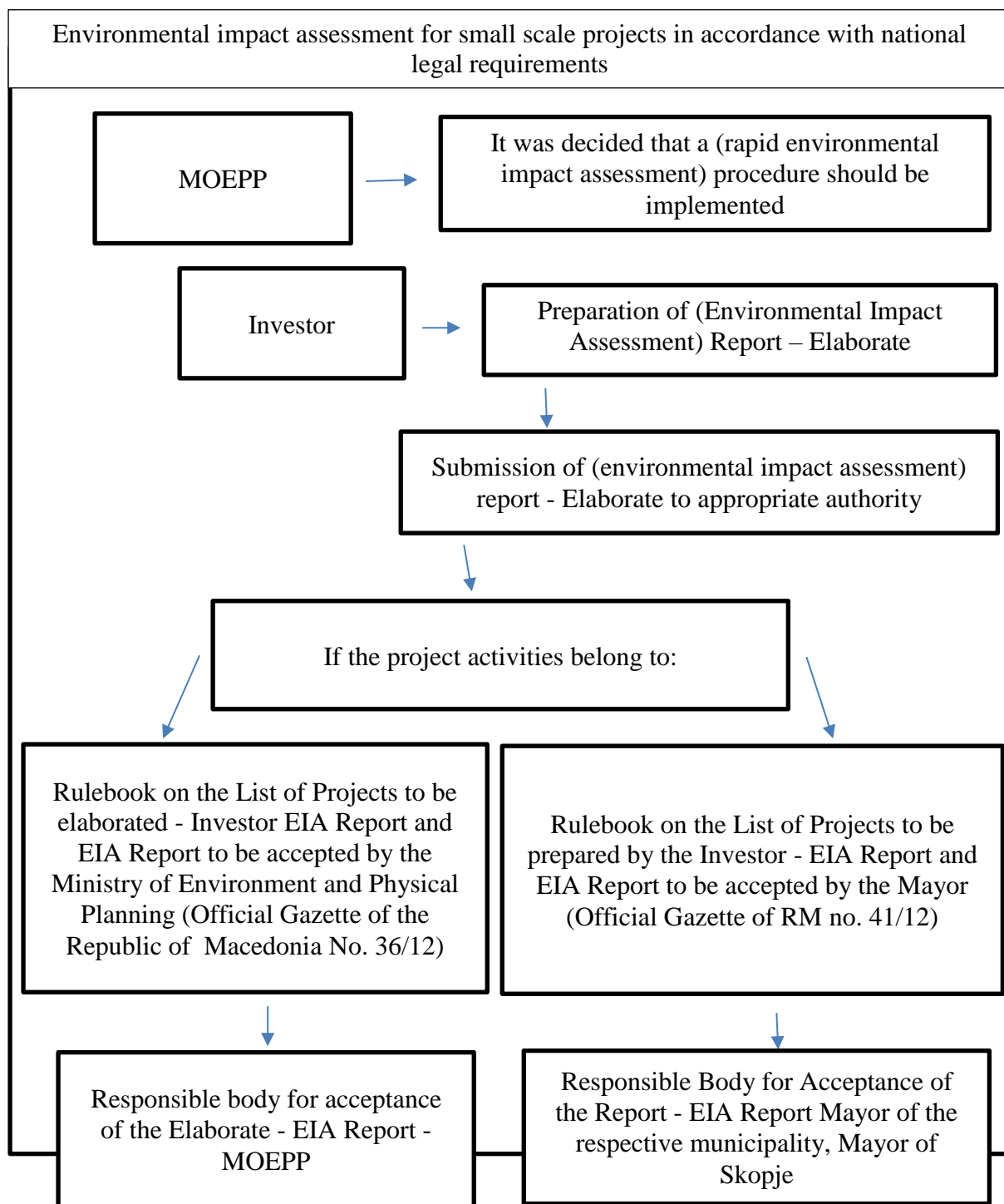


Figure 6 Environmental Impact Assessment Procedure for Small Projects Scope (Environmental Impact Assessment)

According to the national legislation, for the activities envisaged by this sub-project, Elaborate for environmental protection was prepared.

Decision on approval for environmental protection elaborate on an infrastructure project for reconstruction of local road to Mihajlovo – no.11-5556/3 from 16/10/2019, issued by the Municipality of Kavadarci is given in Annex 1 of this ESMP.

2.3 Public consultation on the Environmental and Social Management Plan

The Environmental and Social Management Plan (ESMP) prepared for this project will be part of the grant agreement, tender documentation and the contract with the contractor (together with the bill of quantities) and the implementation of the measures envisaged under the Mitigation and Monitoring Plan is mandatory. Implementation of the ESMP is mandatory for the contractor and Municipality of Kavadarci.

The Supervising Engineer, hired by the municipality, is responsible for monitoring and evaluating the implementation of the proposed measures within the mitigation and monitoring plan and reporting to the investor Municipality of Kavadarci and the LRC project office (Local and Regional Competitiveness Project).

The Municipality will report on the state of the environment and the application of mitigation and monitoring measures in the regular sub-project progress reports and in the separate ESMP implementation report every three months (unless otherwise specified by the environmental expert, approved by the WB environmental expert). These reports will be forwarded to the environmental expert.

According to the ESMF (Environmental and Social Management Framework), this ESMP must be submitted to a public consultation and disclosure before the grant is finally approved. As soon as the draft version of the ESMP is approved by the (PIU - Project Implementation Unit and the Environmental Expert) and the WB Environmental Expert, it will be posted on the PIU - Project Implementation Unit website and/or Cabinet of the Deputy Prime Minister of the Republic of N.Macedonia for Economic Affairs website, the

Agency for Promotion and Support of Tourism and the website of the Municipality of Kavadarci, where it will remain publicly available for a minimum of 14 days.

A printed copy will be available in the Project Implementation Unit (PIU) / Cabinet of the Deputy Prime Minister for Economic Affairs of the Republic of N.Macedonia (CDPMEA) and in the Municipality of Kavadarci. The call for comment and participation in the public consultation (with place and time) will go along with the ESMP disclosure. The public consultation will be held in the Municipality of Kavadarci at the end of the consultation period. Proactively, the Applicant Municipality of Kavadarci will inform and invite major stakeholders in the project, including local NGOs, affected communities and municipalities, directly and in an appropriate manner. The submitted comments will be included in the Public Consultation Report, which will be part of the final version of the ESMP. In this way, all public comments will be made available to the applicants and they will take into account all relevant comments and include the responses and comments in the final ESMP.

The ESMP must be publicly debated. Implementation of the Environmental and Social Management Plan will enable timely implementation of the mandatory measures and will contribute to the realization of project activities without significant environmental impacts.

3. Baseline / Description of the municipality

3.1 Institutional set-up

The activities related to the implementation of the sub-project "Integrated Tourism Development Program in the Municipality of Kavadarci" will be carried out on the territory of the Municipality of Kavadarci by the Municipality of Kavadarci.

Municipality of Kavadarci is a unit of local self-government that performs its work in accordance with the Law on Local Self-Government. The municipality is a service centre for citizens in the areas of communal problems, construction, urban planning, taxation, education, environmental protection, culture, sports, etc.

Through the municipal administration, and through the Public Utility Company "Komunalec" whose founder is the municipality of Kavadarci, the municipality strives to meet the needs of the residents of the municipality. The main tasks of the Communal Enterprise are maintenance of water supply, sewerage system in the municipality, waste management, maintenance of communal hygiene, maintenance of local markets, green areas and parks, as well as maintenance of storm sewers and collector system.

The Municipality of Kavadarci has the capacity to manage the environment on its territory through the Sector for Public Works, Urbanism, Traffic and Environmental Protection, as well as through an authorized environmental inspector.

Municipality of Kavadarci is a local self-government unit with seat based in the city of Kavadarci.

The municipal authorities are the Mayor, who is the responsible person, representing and representing the municipality, and the Municipal Council, which consists of 19 councillors as the body representing the residents in the municipality. In order to implement the activities that are under the competence of the municipality, the municipal administration consists of 100 employees in accordance with the Systematization Act, organized into six departments and two departments:

- Department of Communal Affairs, Urban Planning, Traffic and Environmental Protection
- Sector for construction land disposal
- Department of Legal, Social and General Affairs
- Department of Financial Affairs
- Sector for Local Economic Development
- Human Resources Management Department
- Unit for inspection supervision
- Internal audit

For the realization of the envisaged project activities, and in accordance with the Law on Construction ("Official Gazette of the Republic of N.Macedonia" No. 130/09 and amended Article 97c), the municipality issued a CONFIRMATION for verification of the request for reconstruction of the line facility with technical number 3533. All infrastructure activities should be performed in accordance with the technical requirements of the project documentation by the Contractor.

3.2 Geographical position, geological features, relief and geology

The Municipality of Kavadarci it's situated in the southern part of the Republic of N.Macedonia with an area of 1,132 km². The borders of the municipality overlap with the state border with Greece, while in the east it borders with the municipality of Negotino, in the west with the municipality of Prilep and in the north with the municipality of Veles.

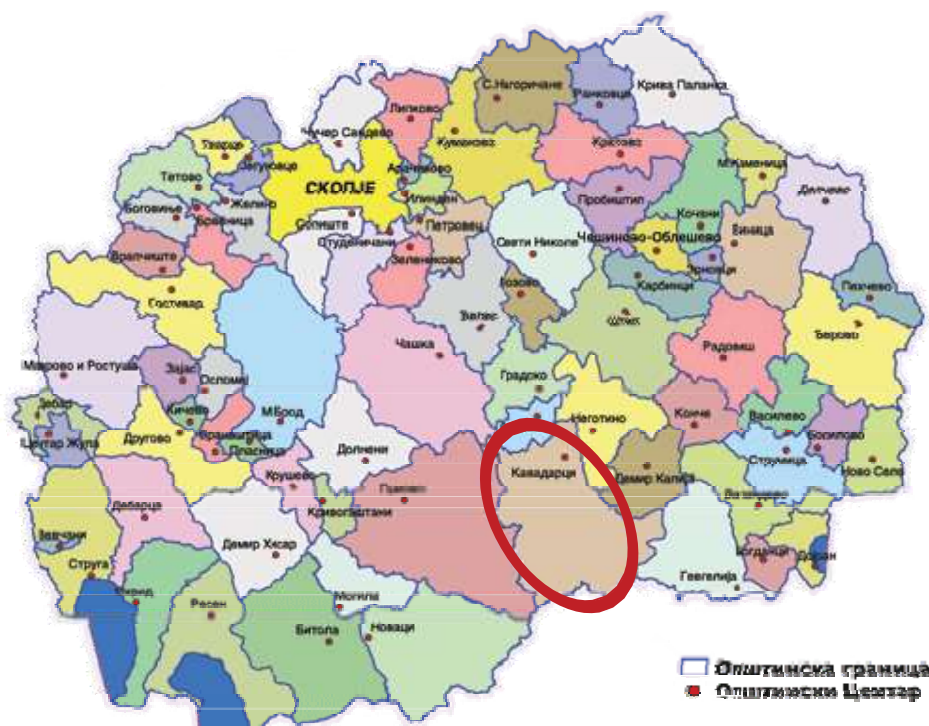


Figure 7: Location relative to other municipalities

The municipality of Kavadarci occupies most of the Tikvesh valley which forms the central part of Povardarie. There are 55 settlements within the municipality, one of which is urban and four are suburban. The town of Kavadarci is located at an altitude of 230-270 m.

3.3 Geological features

The territory of the municipality of Kavadarci, as part of the Tikvesh valley, is characterized by numerous plateaus and corrugated plains, and it also extends to higher places and mountain terrains that form part of the mountain ranges that enclose this area on almost all sides. To the north, northeast and east are Gradecka Mountain, Konecka Mountain and Slan Dol, which are parts of the complex Serta, to the south and southwest are the boundaries of Kozuf Mountain and to the west is the Spatial Lake Vitachevo Plain.

The largest peaks of Serta reach altitudes of 1003 m and 1152 m, Kozuv 1727 m, the Vitachevo plateau 900 m.

The municipality of Kavadarci lies in the plain of the Tikves valley and belongs to the Vardar zone. Tectonic movements in the past have caused the presence of rock masses of different ages. The presence of the Crna River and its outflow and flooding of the environment have resulted in the formation of alluvial soils in the topsoil that are of the first solvent class suitable for vegetable crops. A number of archaeological sites have been discovered on the territory of Tikvesh so far, the most important of which are: Stobi, Antigona, Belgrade, Jakovec, Tikvesh-city (island of Lake Tikvesh), Peshkov hill and others.

3.4 Climate characteristics

This area is characterized by a modification of the Mediterranean, mountainous and continental climate that allows the average annual temperature in these areas to be 13 degrees. The influence of the Mediterranean climate is seen from the Demir Kapija Gorge, and from the Veles Gorge the influence of the continental colder climate is felt. The average annual temperature is 13.3 ° C, and the average annual maximum is 18.8 ° C, while the average annual minimum is 7.4 ° C, ie the annual amplitude is 23 ° C. The warmest month in the year is July with an average temperature of 24.3 ° C, and the coldest month is January with an average of 1.3 ° C.

The average annual amount of precipitation is 458 mm, the rainiest is May with 52.2 mm, and November with 51.1 mm, and the driest month is August with 23.9 mm and September with 26.9 mm. The average number of snow days is 25 and the ice period is 129 days. There is an average of 18 days a year with fog.

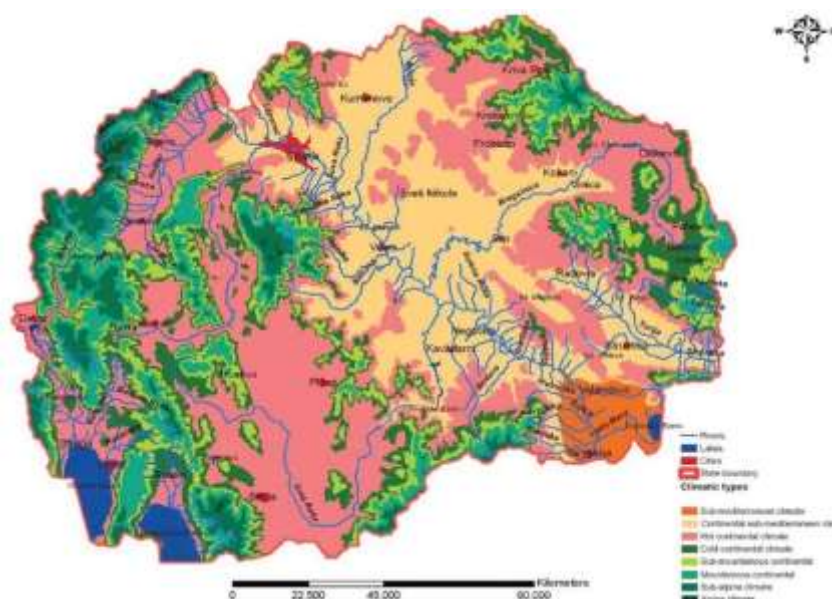


Figure 8. Climate regions in the Republic of N.Macedonia

The north wind is at 145 ‰ and the northwest at 225 ‰. The least frequent winds are winds of 13 ‰ and southwest winds of 33 ‰. The average annual velocity of air currents is 0.8 m / s. The north and south winds have a low frequency of 27 ‰ and 23 ‰ respectively, with an average annual velocity of 2.7 m / sec or 5.4 m / sec. The east has a frequency of 24 ‰ and the west has a frequency of 18 ‰.

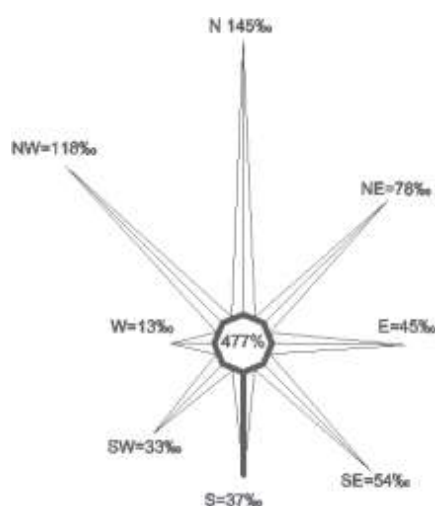


Figure 9: Wind rose

The average number of sunny days is 118 days, cloudy 153 and very cloudy 94 days. The average annual air humidity is 71%.

3.5 Hydrological characteristics

Passing through the municipality of Kavadarci, Crna Reka creates an opportunity for the HPP Galishte to be built in the nearest future. The Kozuf and Kozjak mountain ranges provide excellent prerequisites for the construction of hydropower facilities. The most significant rivers in the valley are Crna Reka, Bosavica, Doshnica and Luda Mara which flows through the town of Kavadarci. All these rivers belong to the catchment area of the Vardar River. Within the municipality there are two lakes, Lake Tikvesh as the largest artificial reservoir in N.Macedonia and the small lake Moklisi located in the area Mokliste.

Lake Tikvesh is the largest in surface artificial lake in R. N.Macedonia. It is located in the southern part of the Republic, in the canyon of the river Crna and is 12 km from the town of



Kavadarci.

Figure 10: Map of Rivers in the Republic of N.Macedonia

One of the goals in the development of the water economy in the Republic of N.Macedonia is the full utilization of the water potential of the watercourses within the multipurpose

systems. So far, 30.5% of the total utilized hydropower potential in the Republic of N. Macedonia has been used.

3.6 Climate

The climate in this region is a temperate continental climate, characterized by long and warm summers and short and mild winters. The annual temperature amplitude is quite high and is 25.4° C.

The most frequent are the winds from the southwest and west.

Depending on the air temperature, its humidity is an important climatic element for agriculture. The average relative humidity is 70%. It is the lowest in August - 56% and the highest in December - 83%. The number of foggy days is negligible and the cloudiness is not high. The average annual cloudiness is 5.0.

3.7 Demographic characteristics

According to the 2002 Census of Population and Households, 38,741 inhabitants live in the municipality of Kavadarci and belong to the group of medium-sized cities. The ethnic composition of the city's population is:

- Macedonians - 38,354 (97.14%);
- Roma - 368;
- Serbs - 159;
- Turks - 151;
- Vlachs - 22;
- Bosniaks - 4;
- Albanians - 2;
- Others - 128.

With the new territorial division, the area of the municipality of Kavadarci covers the settlements: the town of Kavadarci, with the suburbs of Vatasa and Glisic and 21 village settlements.

3.8 Biodiversity

Conditions for the development of the fauna of this area are good due to the spatial, morphological, vegetative and climate diversity, favourable hydrological conditions and relatively small human population. Some representatives of the wildlife in this area are: wolf (*Canis lupus*), deer (*Cervus elaphus*), wild goat (*Rupicapra rupicapra*), hare (*Lepus europaeus*), fox (*Vulpes vulpes*), wild boar (*Sus scrofa*), European badger (*Meles meles*) and others.

The most common fish species in the area of Tikves region are: carp, carrot, catfish, roach fish. The natural and ecological conditions in the region provide opportunities for the development of hunting in naturally pristine areas. There are seven hunting grounds in the municipality: Kamenodolsko, Sopotsko, Ceskovo, Stragovski, Gornikovo, Rozhdenko, and Bochulsko with a total area of 11,900 ha. Hunting areas of this area include all types of quarry (game) and wild boar.

In the vicinity of Lake Tikvesh on an area of 10,600 ha there is a strictly protected nature zone. There are 131 different bird species recorded in this area. The European public is tempted by the large predatory birds that belong to the world and European rarities. Another rare, stable inhabitant of this area is the black vulture (*Coragyps atratus*) and the imperial eagle (*Aquila heliaca*), white-vulture (*Gyps africanus*), bearded vultures (***Gypaetus barbatus***), horn blowers. Since the municipality of Kavadarci is on the road to bird migration, beautiful swans remain here.

With the realization of the project, the impact of the activities foreseen with the project of the surrounding flora and fauna will occur in the reconstruction and operational phase. The location is in vicinity of protected areas (EMERALD site Kozuf), since project activity is limited to reconstruction of existing local road within its existing width and length, no critical or natural habitats will be endangered.

Environmental and Social Management Plan
Municipality of Kavadarci „Integrated program for tourism development in the Municipality of Kavadarci”

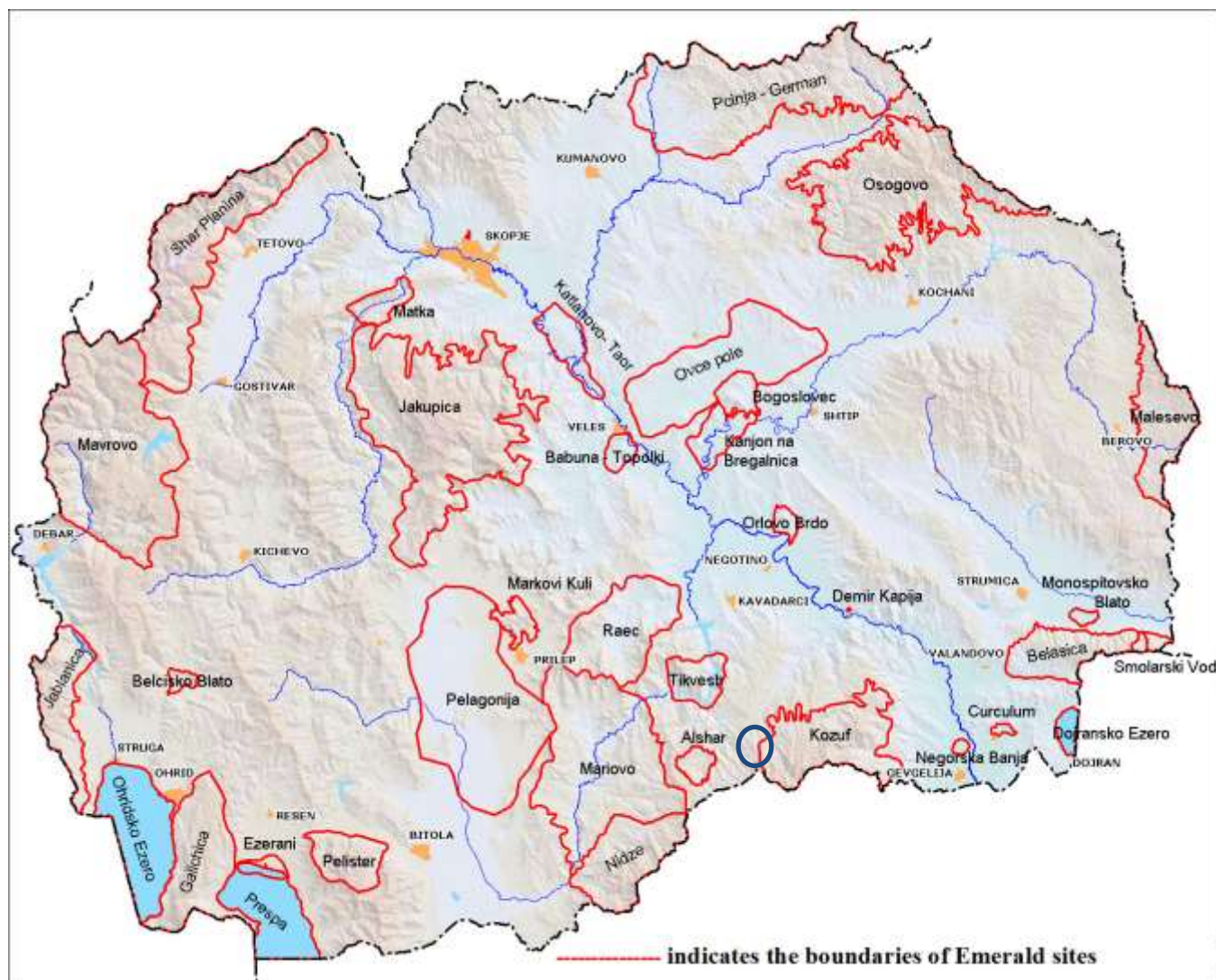


Figure 11: Emerald Network in N. Macedonia (blue circle location of the road)

Environmental and Social Management Plan
Municipality of Kavadarci „Integrated program for tourism development in the Municipality of Kavadarci”

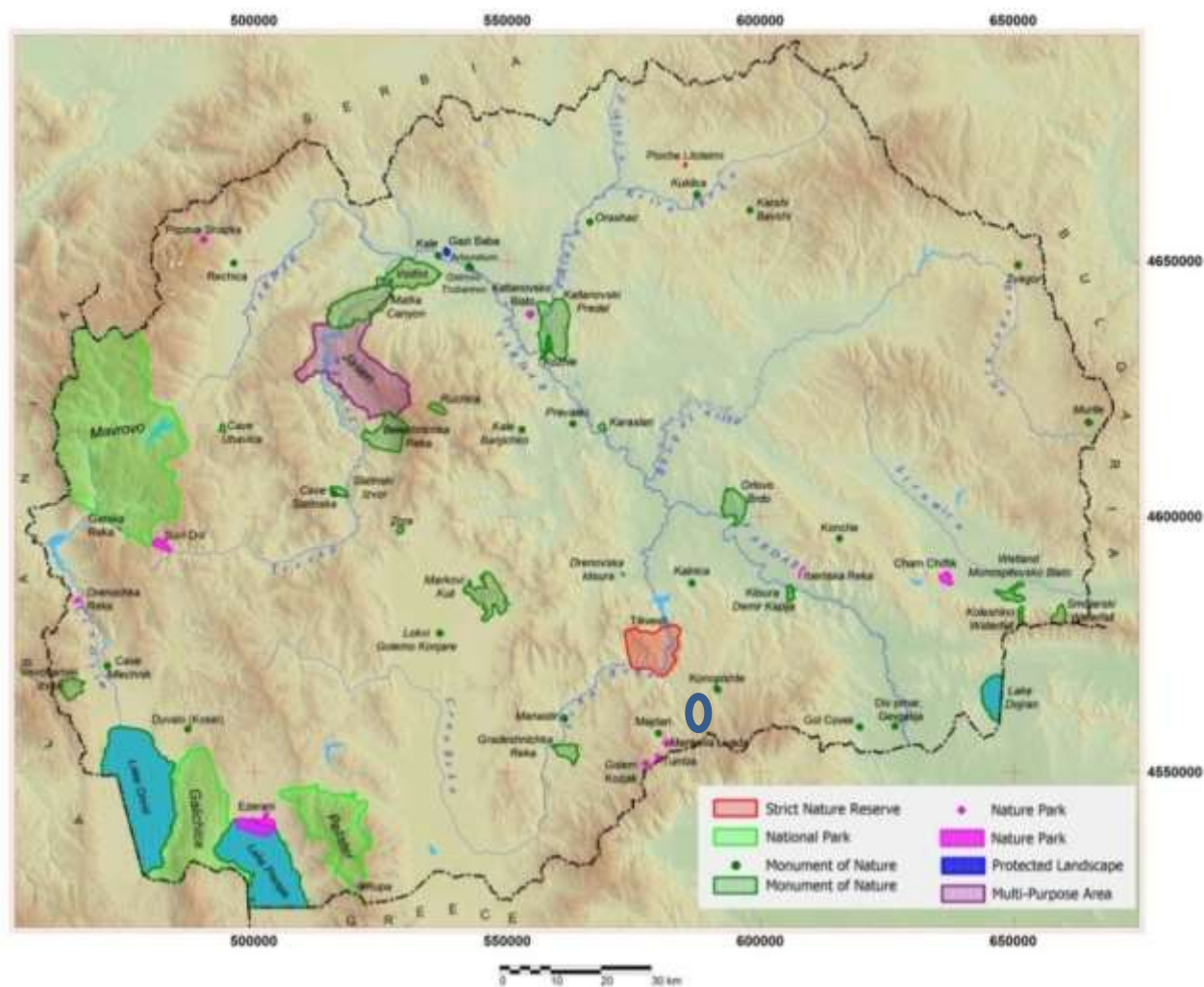


Figure 12: Protected areas in N.Macedonia (blue circle location of the road)

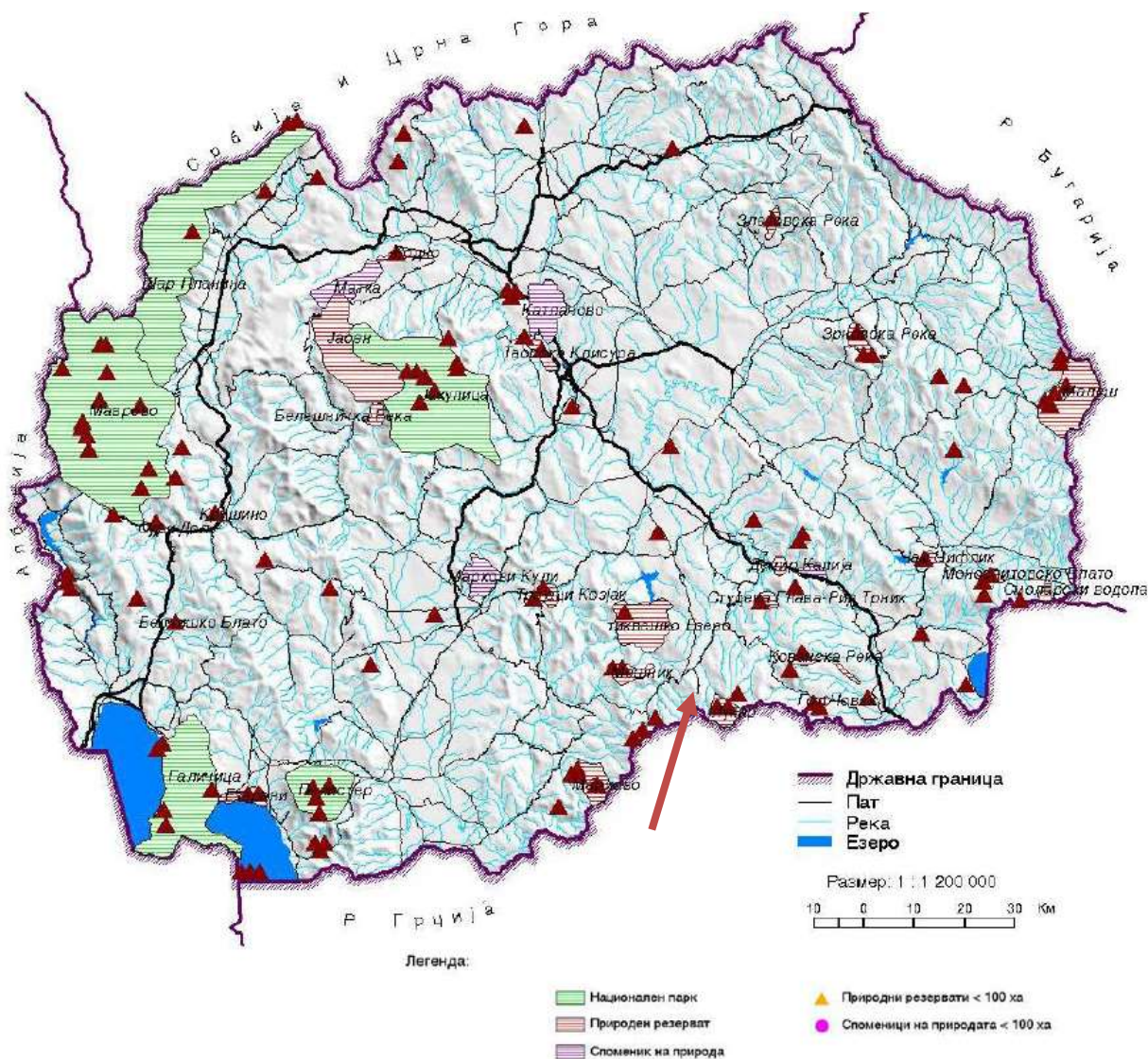


Figure 9: National protected and planned areas (Source: MOEPP, 2004b).
Figure 13: Protected areas in N. Macedonia (red arrow pointing the location of the road)

3.9 Vegetation

The following species of vegetation are found in the area of the planning area: *Quercus pubescens* and *Carpinus orientalis*. Black pine (*Pinus nigra*) is one of the primary forest stands. In the canal area there is white acacia (*Robinia pseudoacacia*), while the presence of wild blackberry (*Rubus* sp.) Makes the terrain unobstructed for examination. Hydrophilic vegetation is present throughout the Luda Mara River, mostly dominated by poplar (*Populus* sp.).

The vegetation of this area is degraded because these areas are intensively used for agriculture and livestock breeding. In the part where the channel is being reconstructed, there are two associations:

ass. *Carpinetum orientalis macedonicum* - forest beetle community;

ass. *Carpino orientalis* - *Quercetum confertae*.

Other species present in the area are: *Fraxinus ornus*; *Corylus colurna*; *Corylus avellana*; *Rosa* sp.; *Rubus* sp.; *Juglans regia*. Walnut is one of the most common species in this region and is mostly found along the rivers.

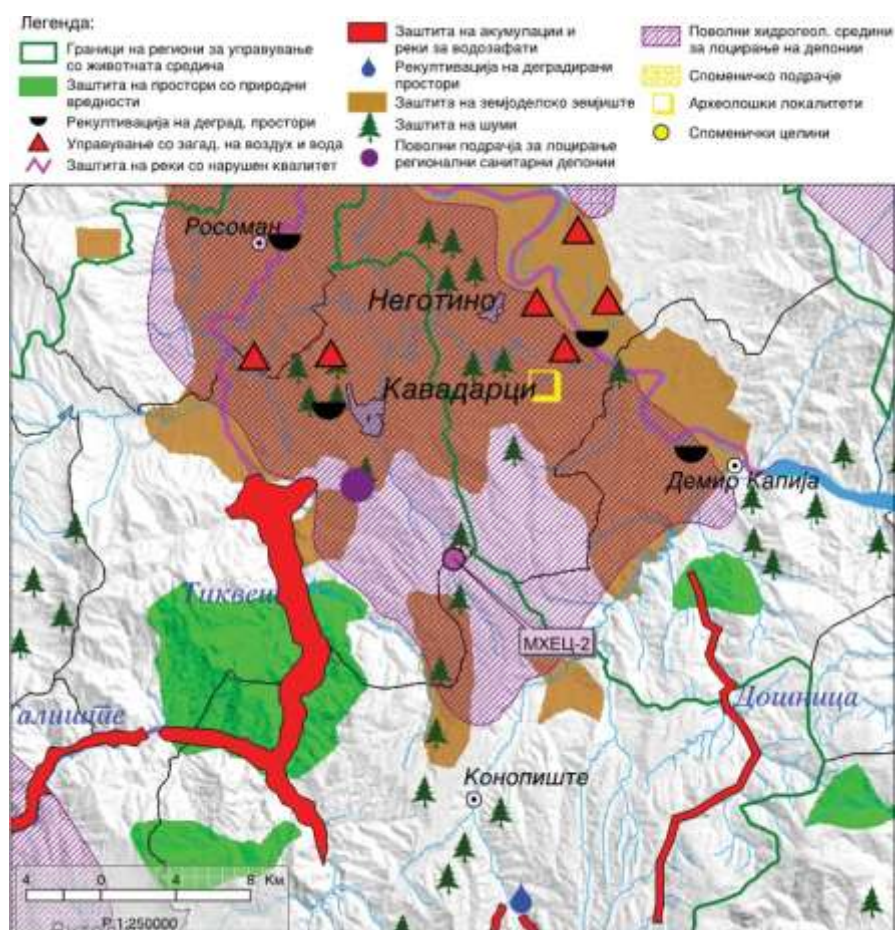


Figure 14: Re-zoning and categorization of the protection area

4. Impact on the environment and social aspects

Implementation of the foreseen activities of the sub-project "Integrated Tourism Development Program in the Municipality of Kavadarci" will cause certain impacts on the environment and the social aspects.

The preparation of this ESMP is in order to locate and determine the possible existence of any harmful effects on the environment during the realization of the planned project activities.

The environmental impacts of the proposed sub-project can result from the following activities:

1. Reconstruction of the local road to Mihajlovo with a total length of 6.3 km.
2. Set of three wine gates with symbols that will express the wine character of Kavadarci. They will be located at the three entrances to the city- road way Rosoman-Kavadarci, road way to Prilep and Negotino. Wine gates will be made from steel brackets which will be placed in reinforced concrete foundation. On every site of the gates, electric billboards will be placed, which will have own solar panel, as a source of energy.

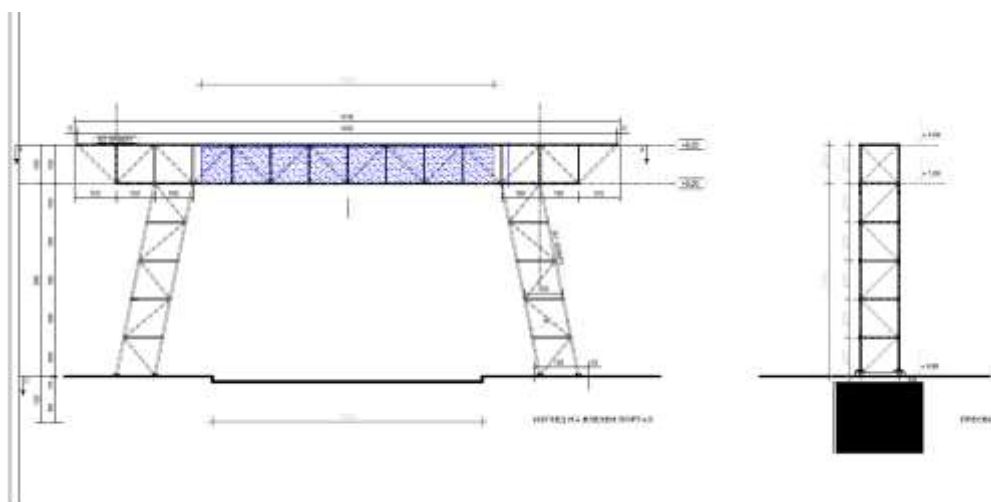


Figure 15: Design of the gates

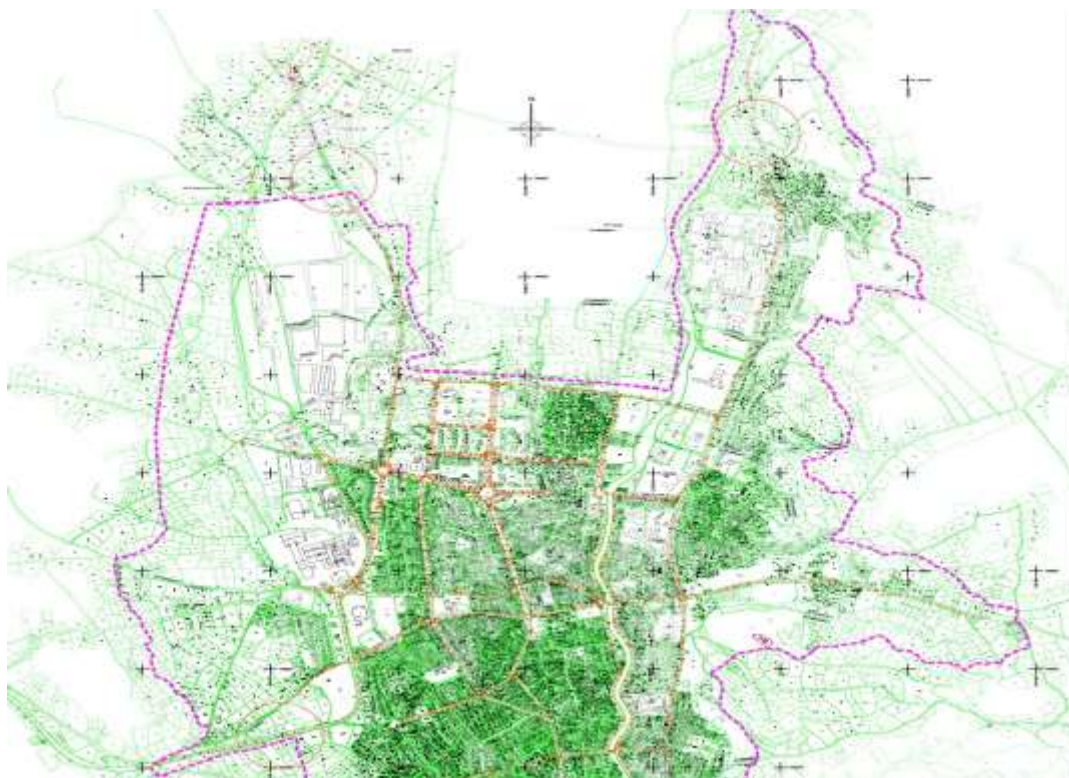


Figure 15: Locations of the gates (orange circles)

4.1 Emissions into air

Air quality

The locations where the activities will be performed are relatively quiet places, with no intense traffic that would dramatically impact the environment and the air quality. The following emissions are expected to occur during this phase:

- Along transport routes and locations where materials are handled fugitive dust emission are expected when clearing the surface and scraping existing asphalt;
- Exhaust gas emissions from construction machinery;
- If dust-producing materials are not covered during transport, dust emissions will be caused.

Dust generated by mechanical interventions for the transport mechanization and fuel combustion during construction works affects not only the nearest but also the distant environment depending on particle size (aerodynamic diameter) and meteorological conditions during the activities, primarily due to wind speed (affecting their distribution - transmission). The impact of the fugitive dust emission generated during the construction phase will be intensified along with the emissions from the construction machinery. Exhaust gas emissions into the air will be generated by the construction machinery. During construction activities, the most sensitive receptors exposed to air emissions will be the

employees on the construction site. The impact on air quality can be regarded as short-termed, local, indirect, rapid, with a low significance.

4.2 Emissions into water

During the activities, no types or fractions of waste will be deposited in or adjacent to the water recipients. Preventive storage of waste will be implemented against waste spillage (temporary storage of waste should be protected from leakage and for hazardous and non-hazardous waste there should be a secondary containment and storage system). Leaked hazardous waste should be retained and disposed of following procedures and measures for managing hazardous waste. Workers will be provided with sanitary facilities to prevent wastewater leakage. There is also the possibility of dangerous leaks coming from tanks, containers, construction equipment and vehicles.

4.3 Noise

The word "noise" means any unpleasant sound that the human ear can hardly bear. Noise as a complex physical phenomenon and depends on its intensity, duration and frequency, and adversely affects the physical condition and might permanently and partially damage the hearing, cause agitation and affect health.

The noise level will not exceed the permissible noise level in accordance with current laws. During the performance of the activities, the noise from the machines that will perform the construction activities will occur. The monitoring of the noise level will be performed during the execution of the construction activities, upon request by an authorized environmental inspector or upon complaints. Workers should be provided with ear protection devices.

4.4 Waste

During the project activities the amount of waste generated will be variable. According to the List of Waste Types, waste generated at this stage can be classified as mixed municipal waste from construction, construction and demolition waste, small amount of hazardous waste due to accidental spillage of oils and lubricants from vehicles and hazardous waste from packaging.

Improper management of waste generated during this phase can cause adverse environmental impacts. The waste classification will be in accordance with the national waste list. The transportation and final disposal of inert, construction and municipal waste will be in a licensed landfill operated by a licensed operator. Potential hazardous waste (motor oil, vehicle fuel, paint and their packaging, greasy rags and clothes) will be collected separately and contracted with an operator that has the authority to collect and transport

hazardous waste. Hazardous waste will only be processed at a valid licensed facility / landfill. Waste collection paths and licensed landfills for waste disposal will be identified for all types of waste that will result from demolition activities.

Mineral (natural) waste from demolition and construction activities will be separated from the general waste, organic, liquid and chemical waste for sorting at its location and temporarily stored in appropriate containers. Depending on the origin and structure, the mineral waste will be reused at its original location. Whenever possible, the contractor will recycle and reuse the appropriate durable materials.

Phase	No	Type of waste	Number from the list of types of waste (Official Gazette no. 100/2005 of R. N.Macedonia)	Quantity of waste annually expressed in tons or gallons	Method of treatment of waste (processing, storage, transfer, disposal, etc.)	Name of the legal entity which operates with waste and location where waste is disposed (landfill)
Reconstruction phase	1	Mixed communal waste	20 03 01	Cannot determine	Temporary storage in bags, the disposal containers located at reconstruction site	Licensed waste management enterprise
	2	Organic waste (plants, roots, shrubs, etc.)	20 02	The exact quantity cannot be determined	Storage location determined by municipality until the handing over to the municipal LCE	Licensed waste management enterprise
	3	Construction on waste	17 03 02	The exact quantity cannot be determined	Storage at an adequate location until disposal of a legal landfill for construction waste	Licensed waste management enterprise
	4	scratched asphalt	17 03 02	The exact quantity cannot be determined	Storage at an adequate location until reuse (if possible) or disposal of a legal landfill for construction waste	Licensed waste management enterprise
	5	Earth material	17 05 06	The exact quantity cannot be determined	Storage at an adequate location until reuse (if possible) or disposal of a legal landfill for construction waste	Licensed waste management enterprise
Operational phase	6	Mixed communal waste)	20 03 01	The exact quantity cannot be determined	Temporary disposal in containers and transport and disposal at legal landfills	Licensed waste management enterprise

4.5 Soil emissions

The impacts on the soil during the realization of the project activities will be insignificant, depending on the successful implementation of prevention and mitigation measures, also because there is no expansion of the existing road section.

Reconstruction phase

At this phase, the following impacts will occur:

- Possible accidental leakages of fuels and oils from construction mechanization, a process that can cause impacts on groundwater, because its filtration goes through the soil;
- Inadequate management of the generated waste on the site.

Operation phase

In the operational phase, the emissions of exhaust gases resulting from traffic and generation of dust along the road will be with less intensity and impacts on the soil, due to the fact that improving the carriageway and quality of road section will reduce possibility of dust creation and will result with shortened period of driving through this section.

The effects on the soil will be indirect, cumulative, local and of minor intensity. Regarding the duration they will be continuous.

4.6 Biodiversity (flora and fauna)

With the realization of the project, the impact of the activities foreseen with the project of the surrounding flora and fauna will occur in the construction and operational phase.

Construction phase

In this phase, the impacts on the surrounding biodiversity can occur as a result of the use of construction mechanization through noise generation, fugitive dust emission and emission of exhaust gases and accidental leakages. Increase of the number of employees at the locations can cause disruption to biodiversity.

Possible impacts on the wild life, such as disturbance of **animals^[112]** and excessive clearing, can occur in the sub-project location that is in the vicinity of the EMERALD site Kozuf (Mountain) area. On the location of the local access road to Mihajlovo, the possible impacts will affect the terrestrial animal species. The impacts on these locations are expected to be short term, reversible, local with small intensity during the period of reconstruction.

However, because these localities are in the existing and because of the scope and implementation period of the envisaged activities, the impacts will be short term, reversible, local with small intensity.

Operation phase

During the operational phase, no impacts are expected on the EMERALD site Kozuf.

During the use of the objects that are subject of this document, the impacts on the surrounding wild life will be minimal, or there will be no impacts.

4.7 Social impacts

Project activities do not include land expropriation and therefore there are no social impacts as a result of land expropriation and displacement-related problems. During the implementation of the projected activities, some impacts on the local population may arise as a result of the limited/partial function of the local road, increased noise, fugitive emissions of dust, etc. But these impacts will be short-term and limited to the space around the location foreseen by the project activities

5. Mitigation measures

The mitigation measures described in this section are general, and detailed mandatory mitigation measures are set out in a table in the chapter - Mitigation and Monitoring Plan.

The contractor must comply with all requirements in order to eliminate the possibility of creating lasting environmental damage, potential injury of workers, local inhabitants and tourists. All reconstruction activities must be performed by trained workers.

Parties responsible for implementing the environmental protection program are the following:

1. Contractor (tender company selected);
2. Engineer-supervision;
3. Applicant / user / Municipality of Kavadarci.

5.1 General Conditions

The activities foreseen in this project will work in the following way to comply with the general conditions. Information will be provided primarily to the local population on the commencement and duration of construction works with the preparation of a Notice to be posted on the municipal bulletin board and municipal website. Persons involved in this project are required to use appropriate personal protective equipment. Prior to launching the project, local construction and environmental inspectors will be informed of the

construction work prior to their commencement and will also be provided with all necessary permits in advance. Labels and information boards will be installed during operation and open pits will be covered and clearly marked when not in operation. It is also important to have first aid equipment available at the location where the activities will be carried out.

5.2 Air

During construction and reconstruction activities, the following preventive measures will be implemented to minimize the negative impact on the air. Transportation routes and locations where materials are handled will be sprayed with water during dry and windy days. The building materials will also be kept sealed in appropriate places in order to reduce dust distribution. Vehicles, construction equipment and machinery will be operated by experienced personnel, well maintained and in compliance with applicable gas emission standards.

During the activities, vehicles (wheels wash) and construction machinery will be maintained continuously in order to randomly identify engine oil leaks, emissions and pollution enhancement. To reduce the negative impact on the air, dust-generating materials will also be covered during transportation, workers will use protective masks during work and prohibit the use of fire and burning of waste around and on the construction site.

5.3 Water

The activities foreseen in this project will work in the following way to reduce the negative impact on the aquatic environment. Primarily the dumping of any type or fractions of waste into or adjacent to water recipients in Kavadarci is prohibited. Spillage of waste will also be prevented and if hazardous waste leaks, it should be retained and removed and the site cleaned, as well as procedures and measures for hazardous waste management followed in detail.

During construction work, following preventive measures should be applied in order to minimize the negative impact on surface and groundwater:

- Carrying out regular maintenance of vehicles and construction mechanization and periodic repairs according to procedures in order to reduce leakage, emissions and

dispersion (during construction). Maintenance and repairs of vehicles and construction mechanization is forbidden on the reconstruction site/locations.

- Contractor vehicles and construction mechanization use existing access roads.
- Careful selection of the location for building material, warehouses / disposal of the construction waste
- The excavated soil should be adequately enclosed to prevent its disposal in the aquatic environment (at least 50m from any water course)
- Prevent hazardous spillage coming from waste (temporary waste storage should be leakage protected and those for hazardous or toxic waste equipped with secondary containment system, e.g. double walled or bunded containers).
- If hazardous spillage occurs, curb and remove it, clean the site and follow procedures and measures for hazardous waste management.
- In the case of any run-off coming from works area possibly contaminated by hazardous substances shall be collected on site to a temporary retention basin and transported to an adequate licensed waste water treatment plant.
- Ensure that water pumped back to natural waterways never exceeds the regulatory water quality standards by regular testing.
- **Install and maintain of proper sanitary facilities for workers. The wastewater from these sources will be transported to proper waste water treatment facilities.**

5.4 Noise

During construction and reconstruction activities, the following preventive measures will be implemented to minimize noise. Above all, the working hours will be limited between 07-19 pm and there will be a ban on working overnight. Also, construction activities will be appropriately planned to reduce the use of noise-generating equipment. During the operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible, residents / sensitive receptors will be informed about construction activities and working hours. Monitoring of noise levels during the execution of construction works (upon request by an authorized environmental inspector and upon complaints) will also be of great importance.

5.5 Waste

Preventive measures will be taken during the activities to minimize the negative impact of waste generation. Different types of waste will be identified and sorted at the site and classified according to the national waste list. Containers will also be set up for each identified waste category. Potential hazardous waste will be collected separately and contracted with an operator that has the authority to collect and transport hazardous waste. Recycling will also be considered during the execution of the activities.

Special attention will be paid to the storage of all types of hazardous and toxic substances, these will be stored in safe containers marked with detailed description of composition, properties and management information. If chemicals are used and disposed, precautions will be taken as prescribed by the Material Safety Data Sheet (MSDS). Hazardous waste will only be transported and managed by licensed companies in accordance with national legislation. The temporary storage of all types of hazardous and toxic substances (including waste) will be in safe containers marked with detailed descriptive composition, properties and management information.

Hazardous substances (including liquid wastes) will be stored in liquid-leak-proof containers to prevent spillage and leakage. These containers will have a secondary containment system such as double-walled containers and enclosed containers, or similar. The secondary restraint system must not be cracked, spill able or rapidly discharged; containers with hazardous substances must be kept closed unless materials are added or removed. They must not be handled, opened or stored in a manner that may cause leakage.

Containers used for storing flammable or reactive waste must be located at least 15 meters (50 feet) from the boundary of the river courses. Large quantities of fuel will not be stored at the site.

Waste will never be mixed and will be transported by licensed waste collection companies and only disposed / processed in licensed facilities.

Paints with toxic ingredients, solvents or lead paints will not be used.

Hazardous waste will only be transported and managed by licensed companies in accordance with national legislation; Hazardous waste will be disposed exclusively at licensed landfills or processed at a licensed facility.

5.6 Biodiversity (flora and fauna)

No direct impacts on the wild life are expected, still in order to prevent any accidental events following mitigation measures must be implemented:

- There will be no water uptake from the rivers or other natural sources in the vicinity.
- Coatings, wood protection agents (e.g. applied to urban and playground equipment) and other agents applied will not be toxic for the aquatic environments.
- There will be no anticorrosion measures applied the site.
- Discarding waste or other materials or liquids to the rivers or other natural sources is strictly prohibited
- Prevent hazardous spillage coming from tanks (mandatory secondary containment system, e.g. double walled or bunded containers), construction equipment and vehicles (regular maintenance and check-ups of oil and gas tanks, machinery and vehicles can be parked (manipulated) only on asphalted or concrete surfaces with surface runoff water collecting system
- Thoroughly inspect all holes and trenches before they are filled.
- Prohibit the collection of firewood from and around working areas.
- Disturbance of animals and collection of plants in the area is prohibited.
- Minimal green surface is to be removed. No trees will be damaged or removed during works.
- There will be no felling.
- There will be no open fires.
- The working area will be returned to its previous condition. In the case of re-greening only native plants will be used.

As a measure for reducing the impacts of the use of construction machinery (vibration, noise and increased exhaust emissions), on terrestrial wild life, it is recommended to use proper construction mechanization with appropriate technical characteristics and use of adequate propellant fuels. The space that will be covered by construction works should be reduced to a minimum at the construction site at the planning stage. It is forbidden to collect firewood from and around the workspace. Animal harassment in all project locations is prohibited.

With the commencement of construction activities, more precisely with the beginning of earthworks, it is necessary to remove and appropriately dispose of the surface layer of the soil, which later in the final part of the constructive phase would be used for the re-cultivation of possible embankments or incisions.

Risk of killing of wild animals due to the hitting by a vehicle as a measure to eliminate such occurrences, it would be recommended to set up an appropriate traffic signalization information for the presence of wild animals on the road as well as limiting the traffic speed.

6. Environmental and social management plan

The Environmental and social management plan (ESMP) is a document that defines the measures, procedures and responsibilities of the involved parties in implementation of the project. ESMP consists of a set of measures for reduction, monitoring and institutional measures that need to be taken during the implementation as well as operations to eliminate the negative environmental and social impacts, their compensation or reduction to acceptable levels.

The main mandatory mitigation activities are described in Table 4.

The plan for reducing the environmental impact during reconstruction and in the operational phase indicates the measures for reduction, costs and responsibilities in the measures for their implementation. The plan finds better ways to undertake activities to reduce or eliminate adverse impacts.

The reporting on ESMP implementation will be quarterly. To assure a degree of leverage on the Contractor's environmental performance an appropriate clause will be introduced in the works contracts, specifying penalties in case of noncompliance with the contractual environmental provisions, e.g. in the form of withholding a certain proportion of the payments until the corrective measures are applied and sub-project in compliance, its size depending on the severity of the breach of contract. For extreme cases a termination of the contract shall be contractually tied in.

Implementation of the ESMP defined measures will be monitored by the supervisor/supervising engineer, the authorized and/or state environmental and communal inspector as well as PIU environmental expert. An acceptable monitoring report from the contractor or site supervisor would be a condition for full payment of the contractually agreed remuneration, the same as technical quality criteria or quality surveys.

The implementation of the measures will be followed before commencing work, during the reconstruction and after its completion.

The beneficiary (Municipality of Kavadarci) is obliged to regularly submit quarterly reports on the implementation and monitoring of environmental mitigation measures (e.g. in the form of a tabular overview (tables mitigation plan and monitoring plan) with an additional column giving the status of the measures, observations and

comments, and Monitoring of the measure (implemented / not implemented, results, observations, comments, concerns, when, etc.).

Table 14. mandatory mitigation measures plan

Activity	Expected Environmental Impact	Mitigation Measure	Responsibility for Implementing Mitigation Measure	Period of Implementing Mitigation Measure	Cost associated with implementation of mitigation measure
Design/Preconstruction phase					
Design/Preconstruction phase - All activities	Possible adverse social and health impacts for the workers and local population as a result of non-compliance with the safety measures	<ul style="list-style-type: none"> - For installation of winegates with billboards, safety for traffic is approved by the traffic police or other competent body. - Appropriate traffic signs are envisaged (e.g. height warnings). - Winegates will be designed and installed in a safe manner and in line with the national regulation and best practices. - Planning of the time for startup of the project activates. - Public is informed of works through Notification at Municipality Notice Board and web site and through other means, if needed. - All needed permits, opinions and decisions have been obtained before the works commence. - Local and Environmental inspections have been notified of works before they start. - Set up a special traffic regime, approved by the 	Municipality of Kavadarci, contractor, supervising engineer	Prior to start of reconstruction works	the expenditure is included in budget

<p>Reconstruction phase</p> <p>Construction phase – all works</p>	<p>Possible adverse social and health impacts for the workers and local population as a result of non-compliance with the safety measures</p>	<ul style="list-style-type: none"> - Contractor and subcontractors have valid operating licenses; - Implementation of Good construction practices during the reconstruction phase including: - Ensure proper marking of the project locations with tapes and warning signs as well as fencing off parts of construction that are dangerous and where necessary for any reason; - Installation of signs for reducing / limiting of the vehicle speeds near the project location - Access of non-authorized personnel within the project locations is not allowed. - Ensure good organization of the site and housekeeping; - Special traffic regime is set, approved by the competent authority (e.g. traffic police) for the vehicles of the contractor during the period of construction (together with the municipal staff and police department) and installation of signs to ensure safety, traffic flow and access to land and facilities; - Safe passages are provided for pedestrians; - Set up of vertical signalization and signs at the beginning of the reconstructed local road route - Machines should be handled only by experienced and appropriately trained personnel, thus reducing the risk of accidents; - All workers must be familiar with the fire hazards and fire protection measures and must be trained to handle fire extinguishers, hydrants and other devices used for extinguishing fires. - Workers must be adequately trained, certified and experienced for the work they are performing - Devices, equipment and fire extinguishers should be always functional, so in case of need they could be used rapidly and efficiently. - First aid kits should be available on the site and personnel trained to use it. 	<p>Participants related to the performance of reconstruction activities</p>	<p>During the reconstructive phase of the project activities</p>	<p>the expenditure is included in the bill of quantities</p>
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		<ul style="list-style-type: none"> - Procedures for cases of emergency (including spills, accidents, etc.) are available at the site. - Wearing protective equipment and clothes (hardhats, etc.) at all times. - Prepare road and winegates maintenance plan, approved by the competent authorities, before the end of works. 			
Impacts on the air					

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Construction phase – all works	<ul style="list-style-type: none"> - Appearance of fugitive dust during reconstruction activities - exhaust gases from construction machinery 	<ul style="list-style-type: none"> - Spraying with water on windy and dry days to reduce the amount of fugitive dust; - Prevent dusting during upload and unload; - Use of proper construction mechanization; - Avoiding work mechanization in the so-called "idle"; - Determining the duration of machine operation; - Residents / sensitive receptors will be informed about construction activities and working hours; - Vehicles loads likely to emit dust must be covered -Roads are regularly swept and cleaned at critical points - Keep the topsoil and stockpiles separate. Protect with sheets/fences in the case of windy weather. - Locate stockpiles away from drainage lines, natural waterways and places susceptible to land erosion - Ensure all transportation vehicles and machinery have been equipped with appropriate emission control equipment, regularly maintained and attested. -Ensure all vehicles and machinery use petrol from official sources (licensed gas stations) and on fuel determined by the machinery and vehicles producer. 	Participants related to the performance of reconstruction activities	<ul style="list-style-type: none"> - During the reconstructive phase of the realization of the project activities 	the expenditure is included in the bill of quantities
Impacts on water and soil					

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Construction phase – all works	<ul style="list-style-type: none"> - Spillage of fuel or motor fats and oils, - Discharge of waste water from workers - Accident of construction machinery - Pollution of the waters through the input of construction material or waste 	<p>Carrying out regular maintenance of vehicles and construction mechanization and periodic repairs in accordance with the procedures in order to reduce leakage, emissions and dispersal</p> <p>The washing, maintenance and repairs to vehicles and construction machinery are forbidden to be carried out at the construction site itself.</p> <p>The vehicles and construction machinery of the contractor use existing access roads</p> <p>Careful selection of the location for building materials, warehouses/temporary storage of construction waste; location must be defined/approved by the Municipality.</p> <p>The excavated earthen material should be adequately enclosed to an authorized location, that prevents contact with aquatic environment;</p> <p>No mineral or other waste is to be stored near watercourses;</p> <p>No water will be released to a natural recipient without a prior treatment and no water will be released into the lake or its tributaries;</p> <p>Prevent hazardous spillage coming from waste (temporary waste storage will be leakage-proof and those for hazardous or toxic waste equipped with secondary containment system, e.g. double walled or bonded containers).</p> <p>- If hazardous spillage occurs, curb and remove it, clean the site and follow procedures and measures for hazardous waste management.</p>	Participants related to the performance of reconstruction activities	<ul style="list-style-type: none"> - During the reconstructive phase of the realization of the project activities 	the expenditure is included in the bill of quantities
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		<p>In the case of any run-off coming from works area possibly contaminated by hazardous substances shall be collected on site to a temporary retention basin and transported to an adequate licensed waste water treatment plant.</p> <ul style="list-style-type: none"> - Install/provide and maintain of proper sanitary facilities for workers. The wastewater from these sources should be transported to proper waste water treatment facilities. - Prevent hazardous spillage coming from tanks (mandatory secondary containment system, e.g. double walled or bounded containers), - construction equipment and vehicles (regular maintenance and checkups of oil and gas tanks, machinery and vehicles can be parked (manipulated) only on asphalted or concrete surfaces with surface runoff water collecting system. - Working site run-offs with possible charge with suspended matter should be contained. Discharge of untreated and unfiltered water to natural flows is forbidden. - Water, and other components, in concrete mixture shall be clean and free of harmful chemicals; - Protection of construction materials and stopping reconstruction activities in conditions of heavy rains; - All hazardous materials, such as fuel, lubricants, adhesives, and packaging waste are non-inert waste must be placed in special appropriate containers locked at construction site, protected from extreme weather conditions; - Isolate works from the watercourses and carry out surface drainage works to divert rainwater that would possibly erode the soil; <p>Water for the construction will be supplied from</p>			
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		<ul style="list-style-type: none"> - No anticorrosive will be applied at the site; - When applying protective coatings and paint, measures will be taken against accidental spilling; <p>Apply storm water management and soil erosion prevention measures. In the case of water contamination, notify the competent authorities immediately (including water supply company).</p>			
Impacts on soil					
Construction phase – all works	<ul style="list-style-type: none"> - Fugitive emission of dust from scratching and removal of asphalt; - Emissions of exhaust gases from the construction mechanization engaged for realization of activities; - Leakage of fuels and oils from construction mechanization, a process that can cause impacts on groundwater, as its filtration goes through the soil; 	<ul style="list-style-type: none"> - Careful planning of the reconstruction works in order to reduce the negative effects - Reducing the size of the site due to the minimization of the land that will suffer a negative impact <p>All hazardous materials, such as fuel, lubricants, adhesives, and packaging waste are non-inert waste and must be placed in special appropriate containers located at the construction site, protected from extreme weather conditions</p> <ul style="list-style-type: none"> - Protection of building materials and stopping reconstruction activities in conditions of heavy rains. - The area of the reconstruction site should be limited. - All purchase of gravel and sand, including places where the excess of the excavated material will be disposed, must possess appropriate permission / approval. There will be no taking mineral material (gravel, sand, stone, etc.) from the surrounding. 	Participants related to the performance of reconstruction activities	During the reconstructive phase of the realization of the project activities	the expenditure is included in the bill of quantities

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	<ul style="list-style-type: none"> - Inadequate management of generated waste at a location; - Pollution of groundwater and soil can occur in case of accidents and 	<ul style="list-style-type: none"> - In case of occurrence of contaminated soil from the eventual release of oils from the construction mechanization, contaminated soil should be removed and treated as hazardous waste. 			
Waste generation					
Construction phase – all works	<ul style="list-style-type: none"> - Generation of mixed communal waste - Construction waste from reconstruction activities - Earth material - scratched asphalt 	<ul style="list-style-type: none"> - Selection of the generated waste - Identification and classification of waste according the national List of Waste (Official Gazette no.100/05), - Determination of waste characteristics; - Storage on places designated for that purpose; Landfills for temporarily and final disposal must be licensed, and approved by the Municipality; - Containers for each identified waste category are provided in sufficient quantities and positioned conveniently. - Waste collection and disposal pathways and licensed landfills/processing plants will be identified for all major waste types expected from demolition and construction activities. For management of hazardous wastes, instructions/guidelines from Ministry of Environmental Protection and Physical Planning will be sought and followed. 	Participants related to the performance of reconstruction activities	During the reconstructive phase of the realization of the project activities	the expenditure is included in the bill of quantities

		<ul style="list-style-type: none"> - Mineral (natural) construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and temporarily stored in appropriate containers. Depending of its origin and content, mineral (soil stone, etc.) waste will be reapplied to its original location or reused and with approval form the Municipality. - The records of waste disposal will be regularly updated and kept as proof for proper management, as designed. - Whenever feasible the contractor will reuse and recycle appropriate and viable materials. Discarding any kind of waste (including organic waste) or waste water to the surrounding nature or water-bodies is strictly forbidden. - Collect, transport and final disposal/processing of the communal waste by a licensed company - If the waste has one or more hazardous characteristics, the creator and / or owner is obliged to classify the category of hazardous waste and handle it as hazardous waste - All waste will be collected and disposed adequately by licensed collectors and to licensed landfills; - Reconstruction activities will end (finish) only after all waste materials have been removed (no waste must be left on the construction site)/ collected by authorized company - It is forbidden to burn waste at the construction site - A waste that is generated during the stay and work of the Contractor employees, applying the best 			
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Construction phase – all works	Toxic / hazardous materials and waste management. Materials management	<ul style="list-style-type: none"> - Temporarily storage on site of all hazardous or toxic substances (including wastes) will be in safe containers labeled with details of composition, properties and handling information. Chemicals are managed, used and disposed, and precautionary measures taken as required in the Material Safety Data Sheets (MSDS) Hazardous substances (including liquid wastes) will be kept in a leak- proof container to prevent spillage and leaking. This container will possess secondary containment system such as bunds (e.g. bounded - container), double walls, or similar. Secondary containment system must be free of cracks, able to contain the spill, and be emptied quickly. - The containers with hazardous substances must be kept closed, except when adding or removing materials/waste. They must not be handled, opened, or stored in a manner that may cause them to leak. -The containers holding ignitable or reactive wastes must be located at least 15 meters (50 feet) from the any water resources. Large amounts of fuel will not be kept at the site. - The wastes are never mixed and are transported by specially licensed carriers and disposed/processed only in a licensed facility. - Paints with toxic ingredients or solvents or lead-based paints will not be used. - Hazardous waste will be transported and handled only by licensed companies in line with the national regulation. - Hazardous waste will be disposed only to licensed landfills or processed in licensed processing plants 	Participants related to the performance of reconstruction activities	During the reconstructive phase of the realization of the project activities	the expenditure is included in the bill of quantities
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		<ul style="list-style-type: none"> - No new materials containing asbestos or lead-based paint will be used. - Coarse aggregate in concrete applied and used in rehabilitation need to conform to durability and gradation requirements. The aggregate must be virgin (not used previously) and preferably locally produced. - Mineral resources (aggregate, sand, gravel, etc.) are procured only from licensed companies with valid concessions for extraction/exploitation. The companies can prove H&S measures and environmental management is in place. - Only existing quarries and asphalt plants are used; - Producer of asphalt, concrete, and the stone aggregate quarry has to obtain/hold all required working and emission permits and quality certifications. and has to present a proof of conformity with all national environmental and H&S legislation. - Asphalt and bitumen emulsion application will take into account metrological data and conditions when planned and carried out (raining periods, overcast, cooler and dumper weather, etc.) - Ensure all transportation vehicles and machinery have been equipped with appropriate emission control equipment, regularly maintained and attested. - Positioning of the emulsion sprayer should be such so there would be no spaying beyond the area to be primed or primer sealed. - All materials have to be approved by the site engineer. 			
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Impacts due to increased noise level					
Construction phase – all works	- Increased noise level as a result of reconstruction activities	<ul style="list-style-type: none"> - Construction activities can only take place during the daytime (07-19h) - Construction activities should be planned appropriately to reduce the use time of the equipment that creates the most intense noise - During the operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible 	Participants related to the performance of reconstruction activities	During the reconstructive phase of the realization of the project activities	the expenditure is included in the bill of quantities
Construction phase – all works	- Cultural Heritage (chance findings)	In the case of chance findings, the works must be stopped immediately and competent authorities, (Ministry of Culture, Directorate for Protection of Cultural Heritage – Skopje and Museum of city of Kavadarci, and National institution -Conservation Centre -Skopje), informed within 24 hours following the national procedures. Works will recommence upon approval of competent	Participants related to the performance of reconstruction activities	During the reconstructive phase of the realization of the project activities	N.A.
Construction phase – all works	- Impact to biodiversity	<ul style="list-style-type: none"> - The working site will take minimal space needed; - Open fires and burning of waste is strictly forbidden 	Participants related to the performance of	During the reconstructive phase of the	N.A.

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		- Pouching and other types of disturbance of animals and plants and forest products is strictly prohibited;	reconstruction activities	realization of the project activities	
Operative phase					
Waste management					
Operational phase – all activities	- Generate communal waste from visitors and users on the local road; Roadkill	- Concluding an agreement with a licensed waste management company for collecting and transporting generated waste to a licensed landfill in a way prescribed for its type. Procedures and location of roadkill disposal is approved by the veterinary inspection.	- Beneficiary	In the phase of using the local road, hiking trails and urban equipment	Included to Municipality budget
Operational phase safety	- Traffic and community safety	- Regular safety checks of winegates stability and safety. - Road is maintained regularly in line with best international practices.	- Beneficiary	In the phase of using the local road, hiking trails and urban equipment	Included to Municipality budget
Tabel 4. Mandatory mitigation measures plan					

7. Monitoring activities

It is essential to design a monitoring program and tracking frequency in an appropriate manner in order to demonstrate the overall performance of the project as well as the short-term impacts of top-building activities. More specifically, as an integral and critical part of the EMP, the environmental monitoring program should include the following objectives:

- Determining the actual degree of impacts-;
- Control of the impacts generated by the reconstruction process and the operational phase
- Checking the environmental pollution standards applicable to the project during reconstruction
- Checking and monitoring the process of implementation of environmental protection solutions during reconstruction;
- Propose mitigation measures in case of unexpected impacts
- Assessment of the impact of mitigation measures in the reconstruction and operational phases

The project will implement the environmental monitoring plan: (i) to check the work of the contractor during the implementation of the project in order to verify the contractual agreement with the envisaged mitigation measures, and then (ii) assess the actual environmental impact of the project in the years following the completion of the project. The main components of the monitoring plan are:

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

The Supervising engineer, engaged by the Municipality, has an obligation to monitor and evaluate the implementation of the proposed measures within the Monitoring Plan and to inform the investor and the LRCP Project Office/Municipality of Kavadarci. The Municipality will report on the state of the environment and implementation of mitigation and monitoring measures in the regular sub-project progress reports and in the separate ESMP Implementation Report on quarterly basis (if not differently arranged with the Environmental Expert, approved by the WB Environmental Specialist) to the Environmental Expert.

Table 5 Monitoring plan

What Parameter is to be monitored?	Where Is the parameter to be monitored?	How Is the parameter to be monitored (what should be measured and how)?	When Is the parameter to be monitored (timing and frequency)?	By Whom Is the parameter to be monitored– (responsibility)?	How much is the cost associated with implementation of monitoring
Preconstruction phase					
1. Checking the necessary documentation (permits, EIA Report, etc.)	Offices of the municipality of Kavadarci	Visual inspection of the necessary documentation	Before the start of the reconstruction activities	Supervision engineer, municipality representative , LRCP EE,	Included in sub-project budget
2. Notification of public and relevant institutions	Offices of Contractor	Visual inspection of the necessary documentation	Before the start of the reconstruction activities	Supervision engineer, municipality representative , LRCP EE,	Included in sub-project budget
3. Traffic plan is in place	Office of Municipality	Documentation inspection	Before the start of the reconstruction activities	Supervision engineer, municipality representative , LRCP EE,	Included in sub-project budget

Reconstruction phase					
4. Occupational health and safety measures for workers, Safety measures for local population and other visitors on construction site; Safety of pedestrians; use of protective equipment	- All works	Verification of documentation and visual checks during the execution of the reconstruction works	During preparatory work and constantly in the course of reconstruction work	Supervision engineer, LRCP EE, Municipality inspection	- Included in sub-project budget
5. Occurrence of fugitive dust during reconstruction activities Exhaust emissions from reconstruction mechanization and vehicles	- All works	Visual inspection of the presence of dust and exhaust gases; measuring in the case of complaints or negative inspection findings	Constantly during the performance of reconstruction work	Supervision engineer, LRCP EE, Municipality inspection	- Included in sub-project budget

6. Spillage of fuel or motor fuel and oils, Discharge of waste water from workers Accident of construction machinery Blur the waters through the input of construction material or waste	- All works	Visual inspection of the presence of oil stains on the soil. All discharged water is treated. Visual inspection for discharges and oil stains in the nearest water body; sampling and laboratory testing in the case of contamination, turbidity or	Constantly during the performance of reconstruction work	Supervision engineer, LRCP EE, Municipality inspection	- Included in sub-project budget
7. Leakage of fuels and oils from construction mechanization, a process that can cause impacts on groundwater, as its filtration goes through the soil; Inadequate management of generated waste at a location; Pollution of groundwater and soil can occur in case of accidents and emergencies.	- All works	Visual inspection of the presence of oil stains on the soil; sampling and laboratory testing in the case of larger spills	Constantly during the performance of reconstruction work	Supervision engineer, LRCP EE, Municipality inspection	- Included in sub-project budget

8. Generation of mixed communal waste Construction waste from construction activities Earth material scratched asphalt; waste management and adequate collection, transport and disposal	- All works	Physical selection of waste by type of waste Control of documentation for handed over waste to licensed companies; Visual inspection for inadequate temporarily (disposed) waste and all other mitigation measures given in mitigation plan; Municipality approvals; waste records	Constantly during the performance of reconstruction work	Contractor, Supervision engineer, LRCP EE, Municipality inspection	- Included in sub-project budget
9. Occurrence and generation of hazardous waste from construction activities	- All works	Visual inspection of the presence of hazardous waste; check waste records; Control of documentation for handed over waste to licensed companies;	Constantly during the performance of reconstruction work	Contractor, Supervision engineer, LRCP EE, Municipality inspection	- Included in sub-project budget

10.Increased noise level as a result of reconstruction activities	- All works	Auditive noise level assessment; measuring in the case of complaints or negative inspection findings.	Constantly during the performance of reconstruction work	Contractor, Supervision engineer, LRCP EE, Municipality inspection	- /
Operative phase					
Waste management					
1.Generate communal waste from visitors and users on the local road.	- Rehabilitation of local road	/Contracts and waste records, visual	According to the dynamics of the Public Utility Company	Public Utility Company	- /
Table 5.Monitoring plan					

ANNEX:

Decisions for approval of elaborate for environmental protection for **Reconstruction of local road to Mihajlovo from junction with road R29171 to children's resort Mihajlovo.**



Општина Кавадарци

ДО: Општина Кавадарци – Единица на локална самоуправа
плош. Маршал Тито 66
1430 Кавадарци

ПРЕДМЕТ: **Р е ш е н и е**

ВРСКА: Ваш број:
Наш број: 11-5556/1

Арх.Бр. 11-5556/3

Дати: 16-10-2019
Кавадарци

Република Северна
Македонија
Општина Кавадарци

Плоштад Маршал Тито 66,
1430 Кавадарци,
Република Македонија
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e-mail: opstina@kavadarci.gov.mk

Врз основа на член 24 став 7 од Законот за животната средина („Службен весник на Република Македонија бр.53/2005, 81/2005, 24/2007, 159/2008, 83/2009, 48/10, 124/10, 51/11, 123/12, 93/13, 187/13, 42/14, 44/15, 129/15, 39/16, 28/18, 65/18 и 99/18) и член 87 од Законот за општа управна постапка („Сл.Весник на РМ бр. 124/15), градоначалникот на Општина Кавадарци го издава следното.

Р Е Ш Е Н И Е
за одобрување на Елаборатот
за заштита на животната средина

1. Со ова Решение се одобрува Елаборатот за заштита на животната средина со тех.бр. 03-10/2019 и арх.бр. 11-5556/2 од 14.10.2019 година, изготвен од страна на д-тмп **АРХИКОНС Јован** довел за Проект за реконструкција на локален пат од клучка со пат Р19171 до детско одмарилиште Михајлово во Општина Кавадарци на инвеститорот **Општина Кавадарци – Единица на локална самоуправа – Кавадарци**.
2. Од доставената документација констатирано е дека со работа за реконструкција на локалниот пат од страна на **Општина Кавадарци – Единица на локална самоуправа** Кавадарци, нема да има значителни влијаниа врз животната средина.
3. Инвеститорот се задолжува целосно и без исклучоци да се придржува кон пропишаниот режим и мерки за заштита предвидени во Елаборатот за заштита на животната средина, како и кон дополнителни решенија во колку, низ работата на објектот се покаже потреба од зголемен обем и вид на превенција.
4. Ова решение влегува во сила со денот на донесувањето.



О б р а з л о ж е н и е

Од ваша страна беше доставен Елаборат за заштита на животната средина за Проект за реконструкција на локален пат од клучка со пат Р19171 до детско одмаралиште Михајлово во Општина Кавадарци на инвеститорот **Општина Кавадарци – Единица на локална самоуправа – Кавадарци**.

Локацијата за реконструкција на локалниот пат во Општина Кавадарци е на КПЛбр.1107 КО. Конопиште - Кавадарци.

Предметниот Елаборат за заштита на животната средина изготвен од страна на **д-р АРХИ КОНС Јован Доне**, е составен од текстуален дел, графички прилози, анализирани се сите неопходни компоненти, изворите и видовите на можни деградации и загадувања врз основа на што се димензионирани и дефинирани мерките за заштита. Според наша оценка, проектираните заштитни мерки се апликативни и во целост ќе ги задоволат основните барања.

Барателот со барањето ја достави следната документација:

Елаборати за заштита на животната средина.

Органот ја разгледа приложената документација и одлучи како во диспозитивот на ова одобрение.

Упатство за правно средство: Против ова Решение незадоволната страна има право на жалба во рок од 15 дена од денот на приемот на истото до министерството за животна средина и просторно планирање.

Жалбата се таксира со 250,00 денари согласно Законот за административни такси.

Изготвил: Советник. Илов Доне

Контролирал:

Одобрил: Рак. на Сект. Драгослав Симоновиќ

