Environmental & Social Management Plan for the subproject:

"Improvement of the conditions for development of alternative tourism at the locality – Monospitovsko Blato"

Municipality of Bosilovo, March 2018

Content:

INTRODUCTION

Local and Regional Competitiveness Project (LRCP) is a four-year investment operation, supported by the European Union using funds from IPA II earmarked for competitiveness and innovation in Macedonia. LRCP will be managed as a Hybrid Trust Fund and consists of four components, executed by the World Bank and the Government of Macedonia. The Project will provide investment funding and capacity building to support sector growth, investment in destinations and specific destination prosperity. At the regional and local levels, the Project will support selected tourism destinations in the country through a combination of technical assistance to improve destination management, infrastructure investment and investments in linkages and innovation. The investments will be undertaken through a grant scheme for the regional tourism stakeholders such as municipalities, institutions, NGOs and private sector.

This Environmental and Social Management Plan (ESMP) has been prepared for activities carried out under the project “Improvement of the conditions for development of alternative tourism on the locality – Monospitovsko Blato”. TheESMP presents the senvironmental due diligence document comprised of project description, technical details, scope, setting and location based on which it assesses the environmental and social risks and the avoidance and mitigation measures addressing them. Implementation of mitigation measures addressing the identified risks and issues defined in the ESMP is mandatory.

The realization of this sub-project offers possibilities for affirmation of the locality on international level. The attractiveness of the Monospitovo wetland offers possibilities for development of cross-border tourism with the neighbouring countries (Republic of Bulgaria and Republic of Greece). So far, people from all over Republic of Macedonia, but also from Republic of Bulgaria and Republic of Greece have visited (and stayed) at the locality.

- The subproject will offer the possibility for establishing business and tourist contacts with the tourist agencies in Republic of Macedonia and will increase the tourist offer of the existing tourist agencies and the hotel-accomodation capacities (due to the probability that tourists will be more intrested to visit this locality) as well as possibilities for self-employment of people from the local region via production of traditional souvenirs and products (mats, harrow and so forth.). Also, there is an opportunity for opening a “house of guests“ in traditional style, with the possibility tourists to visit it and stay there.

– Description of the project

General objective of the sub-project is promotion and improvemenet of the conditions for development of alternative tourism at the locality “Monospitovsko Blato”.

Concrete objectives of the sub-project are:

- To put into function and normal work the Center for alternative tourism and creative development in vlg. Monospitovo
- Attracting tourists, visitors, excursionists, pupils and students for visiting and exploring Monospitovo wetland, which is rich with endemic species (flora and fauna),
- Positioning the locality “Monospitovsko Blato” on the tourist map of Republic of Macedonia.
- Creating premises for preservation, protection and improvement of the biological diversity of the locality.

General and concrete objectives will be achieved through following project activities:

1. Equping of **Center for alternative tourism and creative development** exebition room in Monospitovo (nine racks (cabinets), metal fence pillars, chesnut pillars, wooden planks, fence ropes and chesnut bences), instalation of Central heating system for the Center, and reconstruction of parking lot within the Centre yard;
   The Center building is not under the legal protection of any national institution.
   The municipality of Bosilovo is managing and will manage the work of the Center without any dependence on any state authority. The building is brand new and no other activities around it are provided (adaptation, reconstruction etc.).

Image no.1 Center for Alternative Tourism and Creative Development.

2. Installation of **signposts and informative boards** for acess to the locality of Monospitovsko Blato (wetland), reconstruction of the **wooden paths** (app. 1000m), (6) **wooden cottages** and (2) **wooden observation posts** and construction of (5) **wooden rowing boats (shajkas).**

   Wooden infrastructure will be restored through replacement of all those elements that are unusable (boards, boards, wooden pillars, supports, etc.) in order to be functional and without any danger of movement. Reconstruction will be with new materials and some elements or parts of wood (the old material) that are solid and durable will be reused. Wooden boats will be new but constructed in traditional way as showcase of traditional life and practices in situ. None of used materials will be toxic for the environment, nature (especially aquatic) and people. The renovation and reconstruction of cottages, paths and observation posts will remain within the existing size and design.

Image no.2 Wooden shack to be reconstructed.

In the settlement of Monospitovo there is a **Center for alternative tourism and creative development**. It is planned to be put into function in order to develop the alternative tourism regarding the well-known locality “Monospitovsko Blato”.

The internal area of the Centre premises is incomplete, it is insufficiently equipped and it should be put in order so that the rich treasury of flora and fauna could be visited, seen, explored and examined.

It is neccessary to equip the rooms in order to establish an **ethno room** and **exibition room** for traditional clothes, hancraftes as well as stuffed animals and preserved plant species that live in “Monospitovsko Blato”.

Plant and animal species that will be exposed to the Center are collected from the area of the marsh and from its immediate surroundings. **New showpieces will not be bought, used or collected within this sub-project**. Municipality of Bosilovo and employees of the Centre plan to enrich the existing display in future through permanent calls for donation from local population (traditional clothes).

Three pieces of three different types of racks (cabinets) shall be placed, totally nine racks (cabinets) made of waterproof chip-board and painted in light grey colour; 10 pieces of metal fence pillars; 3 pieces of chesnut pillars; 2 wooden planks; 3 racks with imitation of natural environment; nine pieces of fence rope and 4 chesnut bences for sitting.

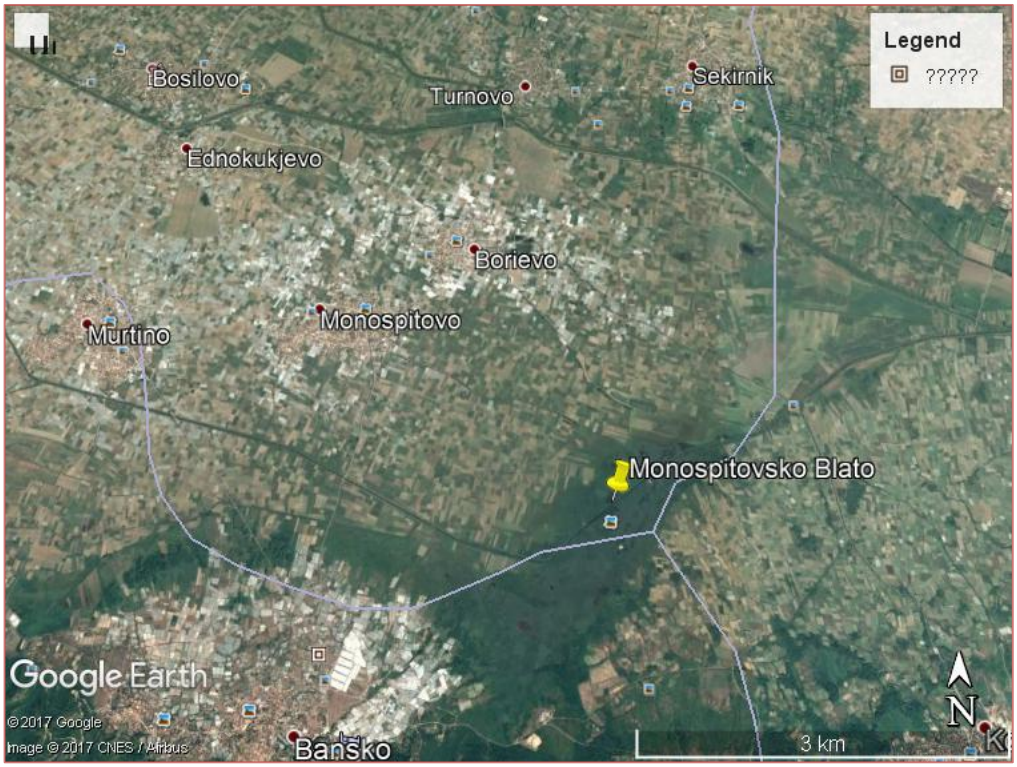


Image no.3 Location of the Monospitovsko Blato and the settlement of Monospitovo

Image no.4 Racks with imitation of natural environment

Image no.5 Wooden bench

The installation of a **central heating system** in the Center is required in order to work properly throught the entire year. The central heeting system will use pellets for heating an area of 265 m^2.

It is neccessary to build a **parking lot** next to the object of the Center, so that visitors and tourists can access, see and visit the Center for alternative tourism and creative development, or to explore „Monospitovsko Blato„. The existing parking area is around 140 m^2 and it will be quite enough to park in total 10 light vehicles, mini vans and mini buses. Special lightning in not predicted because street lightning shall be quite enough for the parking lot to be illuminated. The parking will remain the same in size, no expansion will be financed.

The parking lot is a consistent part of the Center, so it will not be used as a public parking space. The parking lot will be used only for the vehicles of the tourists and visitors of the Center – which means that its purpose will be strictly specified in accordance with the Center for alternative tourism and creative development.

Image no.6 Parking lot

It is neccessary to install **signposts and informative boards** (3 pieces) for the locality of Monospitovsko Blato (wetland) as part of its access, in order to be easily recognizable and reachable.

Within the subproject, **reconstruction of the wooden paths, wooden cottages and wooden observation posts** which serve for sight-seing, touring and exploring the environment of the „Monospitovsko Blato„ (wetland) is also envisaged.

There is an access road to the locality that is functional and quite sufficient for access of workers who will work on the site. There will be no camp for workers at all. The land of the location will not be the subject of planned work activities at all, thus no clearing of land is envisaged under the sub-project.

The total length of the pinewood paths that need to be reconstructed is 1.000 metres. Two observation posts need to be reconstructed. Seven wooden cottages also need to be reconstructed and they have a total area of 26 m^2 (area of all of the wooden cottages).

This wooden infrastructure is already there and will be only renewed with new material (new wood). Where necessary, the supporting columns will be renewed (replaced), so that the construction would become stabile. New wood used for reconstruction of existing paths, observation points and cottages will be used in its natural state and it will not be treated with wood protection, dye, coatings nor lacquers or other agents in any way exept for mechanical processing (cutting in needed dimensions). Mechanical treatment of

wooden material will be conducted in workshops of the supplier of the wooden materials selected in public proqurement process. Wood with dimensions required by technical details in design will be delivered on site than manually installed on paths, cottages and viewpoints. Neither colors nor wood lacquers will be used as protective materials in order to keep the authenticity of the existing structures.

The tree to be used will be natural without any chemical protection against it or any additional protection. That way it will fit into the natural ambience of the location.

For deeper sight-seing, five **wooden rowing boats (shajkas)** will be constructed. **The wooden boats (shajkas)** will enable deeper insight and touring in the internal area of the wetland.

They shall be made of wood to suit the natural environment.

The shajkas (wooden boats) will be completely produced in a workshop at a distance of several kilometers away from the swamp. Also, neither colors, coatings, wood protection nor lacquers or other agents will be used on them.

Wooden matter will be natural without any additives, protection by chemical means, etc. No chemicals will be used as their protection.

Image no.7 Wooden rowing boat (shajka) in the Monospitovo Bog

All these preconditions are needed so that more people can visit this locality and more possibillities for development of rural and cultural tourism can be provided. Concrete location of the subproject:

- vlg. Monospitovo (municipality of Bosilovo)
- area of vlg. Monospitovo (locality Monospitovsko Blato)

Destination included:

- Destination no. 9: Strumica and its environment

Expected results:

a) Equipped, functional and modern Center for alternative tourism and creative development,

b) Construction of contemporary and functional parking lot,

c) Established roadside signposts and informative signalization,

d) Reconstructed wooden infrastructure of the locality (paths, cottages, observation posts)

e) Construction of traditional wooden boats (shajkas) for internal sailing within the wetland lakes.

The realization of the project will have positive impact on the destination (Strumica and its environment) and shall provide remarkably great possibillities for increasing the attractivity of the destination's natural beauty. In context with Smolare and Koleshino waterfalls, Mokrievo springs, which are located just a few kilometres away from Monospitovsko Blato, tourist map of the destination shall be enriched with another locality which offers diversity in the natural beauties of the destination. The subproject offers possibilities for scientific and research work of the rich flora and fauna at the locality, since they are not sufficiently explored and examined.

Also, the existing medicinal baths (spa's) in Bansko (at the base of mount Belasica), attractive for both healing and recreation and which are just a few hundred metres away from the locality, will enable the tourists who stay there not to passover the locality Monospitovsko Blato.

The good traffic relations of the destination enable easy and quick access to the abovementioned locations.

The subproject will enforce tendencies even more towards development of rural tourism of the destination, which surely will gain another strong impuls with the realization of this subproject.

The increased number of tourists will provide more work for small trading companies which are located in the near surrounding of the object. It is certain that the sub-project will enable the number of tourists to rise, due to the increased interest for the locality. The final number regarding how many people visited the location is quite modest and it amounts to one thousand people per year. But, with the realization of all activities for this sub-project, we believe that this number can reach up to several thousand visitors (tourists) per year. Certain hotels and restaurants show interest to offer accomodation and meals for them. The increased level of work shall require more cooks and waiters, tour guides through the natural locality and the wetland lakes.

Due to the fact that there are numerous accomodation capacities in the area of the locality (in Strumica, Bansko, Podgorski An and the remaining parts of the destination), we believe that the subproject will increase the number of tourists who will spend the night.

Around one thousand nights per year would be a starting point which will rise yearly.

The private sector sees opportunity from promotion of this subproject in the direction of developing rural (village) tourism via construction of catering objects and small accomodation capacities.

The sub-project offers remarkably great opportunities for self-employment and engagement throughout the entire year.

The Center for alternative tourism and creative development shall offer information and help for each idea in context of creating job posts.

LEGAL FRAMEWORK

National Environmental Impact Assessment procedure for the project development

The Environmental Impact Assessment procedure has been prescribed into the Law on Environment Gov. Gazette No. 53/05, 81/05 24/07, 159/08 и 83/09; 124/10, 51/11, 123/12, 93/13, 163/13, 42/14, 129/15 and 39/16 (Chapter XI/Articles 76-94) where the requirements of the EU Directives on EIA (Directive 85/337/EEC as amended by Directives 97/11/EC, 2003/35/EC and 2009/31/EC) have been transposed.

The procedure starts when the Investor (Project Proponent) who intends to implement a project submits a Letter of intent, in written and electronic form to the Ministry of Environment and Physical Planning (MoEPP - Administration for Environment), which is the responsible authority for the entire procedure. The Administration for Environment is obligated to give feedback on the specific request whether they should or shouldn't necessary develop SEA, EIA or Elaborate for environmental protection.

The *Screening procedure* is a stage during which the MoEPP determines whether an SEA, EIA or Elaborate should be carried out or not for a certain project. For the development of projects that do not belong to the list of the projects for which the EIA procedure has to be carried out **(small scale projects)**, there is a requirement for the preparation of an "Environmental Impact Report-Elaborate" **(relevant for the Category B projects under the WB OP 4.0.1 Environmental Assessment procedure)**.

National procedure for environmental assessment of small scale projects

During the national EIA Procedure within the screening phase, if the decision has been made by the Ministry of environment and physical planning that there is no need for EIA procedure to be carried out, the investor should start with procedure for development of **Environmental Impact Assessment Report – Elaborate.** This procedure is obligigatory for small scale projects causing short-term, minor negative impacts to the environment when Ministry of environment and physical planning within abovementioned decision

have stated the need for preparation of Elaborate in accordance to rulebooks quoted below (e.g. Reconstruction or construction of local streets, roads, construction of local drinking water supply systems, sewage systems and small scale WWTPs - less than 10 000 p.e., etc.).

There are two Rulebooks that refer to the projects for which the EIA Report-Elaborate should be prepared:

A) Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Ministry of Environment and Physical Planning (Official Gazette of RM" No. 36/12);
B) Rulebook on the list of projects for which the EIA Report – Elaborate should be prepared by the investor and the EIA Report need to be adopted by the Mayor of the municipality (Official Gazette of RM" No. 32/12) or Mayor of City of Skopje.

The content of EIA Report – Elaborate should be in line with the Rulebook on EIA Report form and content and procedure for EIA Report adoption (Official Gazette of RM No. 123/12).

The EIA Report – Elaborate contains the main characteristics of the project activities, the main positive and negative environmental impacts identified taking into account the site-specific baseline environmental data. Very simplified Environmental Protection Program comprises various measures that will prevent, mitigate and compensate the adverse impact on all environmental elements need to be developed based on the national environmental legislation and good international practice. No public hearing is proposed during the preparation and adoption of the EIA Report-Elaborate (according to the national legislation). On Figure 1 the simplified scheme of the EIA Report-Elaborate procedure is presented as well as the competent authority for adoption of EIA Report-Elaborate.

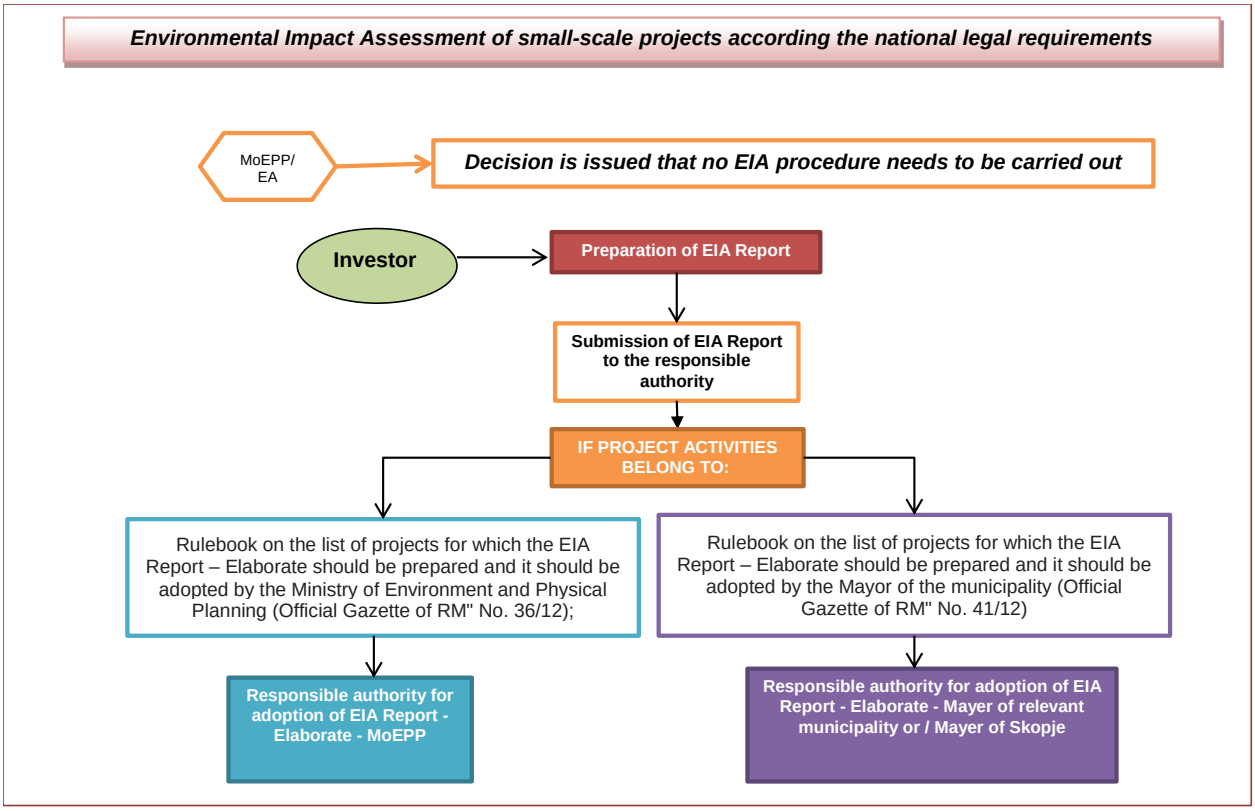


Figure 1 EIA small-scale projects national requirements

Since envisaged sub-project activities are not part of the abovementioned legal stipulations from the national legislative and the sub-legal acts (regulations, decrees and rulebooks) for the realization of the activities proposed within the sub-project "Improvement of the conditions for development of alternative tourism at the locality Monospitovsko Blato" it is not necessary a particular document to be prepared or a certain procedure for the environmental impact of this project to be conducted. Additionally, this is confirmed with reply to a letter of intent from the Municipality of Bosilovo to Ministry of environment and physical planning.

The acquired support and positive Expert (Professional) opinion from the Ministry of environment and physical planning of Republic of Macedonia/Administration for environment (part of the delivered documentation), speaks in favor of the abovementioned.

As annex to this Environmental & Social Management Plan (at the end of this document) Expert (Professional opinion) from the Ministry of Environment and spatial planning of Republic of Macedonia is attached.

The expert opinion of the Ministry of Environment and Physical Planning of RM means that there is no need to make an elaborate or other document for the protection of the environment. The Ministry supports the project and its realization and does not state that it is necessary to prepare a certain document for environmental protection.

Professional opinion is an official position, official opinion and official decision of the Ministry of Environment of the Republic of Macedonia.

Public Consultation about the Environmental Management Plan for the Project

The prepared Environmental and Social Management Plan (ESMP) for this project will be part of the bidding documentation and Contract with the Contractor (along the bills of quantities) who will be obliged for implementation of the envisaged measures according to the Mitigation and Monitoring Plan. Implementation of the ESMP is mandatory for the Contractor.

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 Bosilovo. 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.

In line with the ESMF, this ESMP must be publicly consulted prior to final approval of the sub-grant. Once the draft ESMP is approved by PIU Environmental Expert and WB Environmental Specialist it will be published on the web site of PIU (CDMPEA), The Agency for Promotion and Support of Tourism and web site of impacted municipality (Municipality of Bosilovo) where it will remain available to the public for at least 14 days. A hard copy will be available at PIU (CDMPEA) and Municipality of Bosilovo. A call for comments and call for participation in the public consultation meeting (with time and venue) will accompany ESMP. The public consultation meeting will take place in the impacted municipality near the end of consultation period. Proactively, the Applicant (Municipality of Bosilovo) will inform and invite major project stakeholders including local NGOs, impacted communities and municipalities directly and by appropriate means. The submitted comments will be included in the Report from the public hearing which will be

part of the final version of ESMP. This way all comments from the public will be available to the applicants and they will take all relevant comments and will include the answers and remarks into the final ESMP.

ESMP must be publicly consulted in English, Macedonian And Albanian Language. The implementation of the Environmental and Social Management Plan will ensure timely undertaking of the proposed measures and will contribute for realization of the project activities without significant environmental impacts.

– Basic Data

2.1. Description of the municipality

Activities regarding the implementation of the subproject „Improvement of the conditions for development of alternative tourism on the locality – Monospitovsko Blato„ will be carried out on the territory of the municipality of Bosilovo by employees of the Municipality of Bosilovo.

The Municipality of Bosilovo is a unit of the local self-government which performs its duty in accordance with the Law on Self-governing. The Municipality is a service center for its citizens in the area of communal problematics, construction, tax obligations, education, protection of the environment, culture, sports, etc.

With its own administration, as well as with its own public utility “Ograzhden”, the Municipality is trying to meet the various needs of the locals.

There is also a public utility in the municipality – “Ograzden” - Bosilovo. The main tasks of this company are the organization of water supply in the settlements, maintenance of the communal hygiene, maintenance and reconstruction of the street lighting as well as maintenance of the open atmospheric sewage system.

The Municipality of Bosilovo has the capacity to administer the environment on its own territory via specially organized department for communal affairs, as well as via authorized inspector for protection of the environment.

The municipality of Bosilovo is a self-government unit with a head office in the settlement of Bosilovo.

The municipal bodies are the Mayor, who represents and stands for the municipality, and the Municipal Council, which consists of 15 councillors as a representative body of the inhabitants in the municipality. In order to conduct the activities

which are within the jurisdiction of the municipal bodies and in accordance with the Systematization Act, the municipal administration consists of three departments:

-a department for legal, general and public activities,

-a department for budget, finances and accounting,

- a department for communal affairs and local economic development, which consists of an authorized environmental inspector, who performs the duties regarding the environment, the communal inspector and the communal usher and

-a department for inspectoral work – an inspectorate (education, taxes, construction, traffic).

The territoriy of the municipality of Bosilovo for affairs regarding the environment, on national level, is covered by a state environmental inspector who performs his/her duty in accordance with the national legislative. The municipal administration has a total number of 17 employees and due to this fact the formation of sectors was not provided in organizational terms.

In accordance with the national legislation of the Republic of Macedonia for realization of projects in protected environments, the municipality of Bosilovo acquired a positive **Professional opinion** from the Ministry of Environment and Spatial Planning of Republic of Macedonia and support for realization of this project on the basis of the inspection in the entire documentation that was delivered to them. All project activities in accordance with the national body for environment shall not disturb the biodiversity of the location. The same Professional opinion is a composite part, as a supplement, to the project documentation.

The only administrative body in charge of the state, maintenance and management of the Monospitovosko Blato is the Ministry of Environment and Physical Planning of the Republic of Macedonia. No other state or local authority has the authority to make decisions, expert opinions, conclusions, etc. regarding this site. When protected as Monument of Nature in accordance to Law on nature protection Monospitovo wetland will be managed by authorized body in accordance to the act for proclamation of Monospitovo bog as Monument of nature.

Professional opinion is a completely sufficient act to have the support and permission to implement the projected project activities.

Regarding the nature of the project activities and their insignificant influence on the environment, and them being in accordance with the national legislation – special permissions for their fulfillment are not required. All infrastructural activities shall be

conducted in accordance with the project program which the constructor has to follow and implement.

The municipality of Bosilovo comprises of 15 settlements in total and it was created in accordance with the Law on Territorial Division of the Republic of Macedonia (Official Gazette of RM No. 49/96). After the new territorial division in 2004, this municipality continued to exist including one more settlement in its structure (16 settlements in total) i.e. Bosilovo, Turnovo, Radovo, Ilovica, Shtuka, Sekirnik, Borievo, Monospitovo, Robovo, Ednokukjevo, Petralinci, Saraj, Gecherlija, Drvosh, Hamzali, and Staro Baldovci.

The municipality of Bosilovo has its own history as an old municipality which existed long ago i.e. as early as in 1952 and until 1963 when rural municipalities were abolished. Since it was first created on 10th April 1952, this date is celebrated as a Municipal Holiday.

Image no.9 The Municipal Building in Bosilovo

2.2. Geographical characteristics

The territory of the municipality of Bosilovo stretches over the outermost southeast part of the Republic of Macedonia, with one part occupying the middle section of the Strumica Field, and with the other part rising up to the ridge of the mountain Ograzden. The Municipality of Bosilovo stretches over an area of 150 km^2 at 250 metres height above sea level. It borders the neighbouring municipalities: Berovo, Strumica, Vasilevo and Novo Selo.

The municipality has a quite good geographical position. It is situated at only 7 kilometres away from the largest urban centre in the region, the town of Strumica, to which it is connected with the motorway M-6. This road also connects the municipality with the border crossing between the country and the Republic of Bulgaria.

The regional road to Berovo, which goes through the mountain Ograzden and the Malesh Mountains, also passes through the municipality, thus rounding up the east circular arterial road.

Image no.11 Map of the municipality of Bosilovo

2.3. **Geological and relief structure**

The municipality of Bosilovo has a relief structure of contrasts, comprising a fertile flatland as well as hilly – mountainous areas. Of all the settlements in the municipality, 12 are flatland settlements, whereas 4 are hilly ones.

The municipal region is divided into a hilly-mountainous part, in which rocky soils, plain soils, alluvial soils, clay soils, gajnjaca soils as well as carbonate soils can be found,

and a flatland relief part at 250 metres height above sea level to which most of the farmland belongs, and which is of first-rate importance for agriculture in the municipality. This is the land next to the riverbeds of the rivers Strumica and Turija. The municipality of Bosilovo has a picturesque relief structure and is an area with a fertile plain stretching out to the foot of the mountain Ograzden. The bottom of this plain on which farmland spreads out consists of alluvial fertile soils with subterranean waters, whereas the surrounding terraces consist of lighter and drier soils.

This fertile soil characteristic of the municipality determines the way in which the land is cultivated by the individual farmers. Thus, the greatest part of the total agricultural area (87%) belongs to farmland where ploughed land and gardens dominate.

2.4. Hydrological characteristics

The hydrographic network in the municipality of Bosilovo is abundantly intertwined with many rivers, streams, an artificial accumulation etc. The main recipient in the municipality with controlled riverbed is the river Strumica, which stretches throughout the municipality with length of 9.5 km. The river Turija, which has a riverbed length of 7 km in the municipality, is a left tributary of the river Strumica. The Monospitovo canal, with a riverbed length of 14 km controlled up to the Monospitovo Swamp, is a right tributary of the river Strumica. A smaller river canal also flows into the river Turija – Petralicki azmak and Ilovicka Reka with length of 9.8 km, which flows out of the dam i.e. the artificial accumulation Ilovica. In addition, Shtuchka Reka, which springs out of the slopes of the mountain Ograzden and has a riverbed length of 4 km, flows into the river Strumica.

No sub-project activities will be executed in rivers in and around Monospitovo bog. The implementation of the projected project activities will not affect the quality and quantity of the waters in the region of the municipality of Bosilovo.

2.5. Climate

Due to the specific geographical position, the municipality of Bosilovo characterizes with two zonal climates – the sub-Mediterranean climate, with major or minor intercrossing with the east-continental climate. The intermingling of these two climates leave a distinguishing mark on the region – long, hot summers with high midday temperatures and reduced annual amount of rainfall, low winter temperatures and occurrence of winds of all directions.

North-west and south-west winds are typical for the municipality of Bosilovo, whereas north and south warm winds are rare.

As far as sun warmth is concerned, the municipality characterizes with a long period of sunny days throughout the year as well as with a high luminous intensity (there

are about 230 sunny days throughout a year). On average, there are about 2,377 hours of sunlight per year, whereas there are on average 20 days of fog per year at the most.

Due to the sub-Mediterranean influence as well as the influence of the continental climate, the climatic conditions in the municipality are characterized with a reduced amount of rainfall and low winter temperatures. The daily temperatures during the winter period fall down to three degrees Celsius, whereas in the summer the temperature goes over 40°C. Concerning the rainfall, at an annual level it varies from 330 mm^3 per m^2 to 884 mm^3 per m^2.

2.6. Natural Resources

As far as the natural resources in the municipality are concerned, there are no known metal diggings. However, there is a non-metal mine. The mine for operation of feldspar – Ograzden is of a sodium type and is unique in the Republic of Macedonia as well as on the Balkan Peninsula.

The petrographic albite ore bodies are white of colour, and have massive texture as well as variable structure. Regarding the mineral structure, they contain 89-94% albite, 4-8% quartz, 0.5% sericite, as well as some residue of rutile, titanite, and alcrete. The potential diggings of copper and gold are still in a research phase, therefore there are no confirmed deposits of these metals. Research is done on the mountain Ograzden in the vicinity of the village Ilovica, where some potential diggings have been indicated.

Other important natural resources in the municipality are the forests which cover an area of 4,996 hectares and the pastures which cover an area of 2,086 hectares. They have a considerable effect on the development of stock-breeding.

A natural resource of a special interest in the municipality is the well-known Monospitovsko Blato (Monospitovo Swamp), which is near the village Monospitovo. The Monospitovo Swamp is in the group of protected areas as a monument of nature. It abounds in diverse samples of flora and fauna, thus enabling the realization of many projects in the field of environmental protection as well as the development of eco-tourism.

Image no.13 The non-metal mine “Ograzden”

2.7. Population

According to the statistical data in 2002, the municipality of Bosilovo has 14,260 inhabitants who live in 16 settlements and a total number of 3,661 households. The average number of members in a household amounts to 3.90, whereas the average density of population in the municipality amounts to 88 inhabitants per km^2.

Regarding the national structure of the population in the municipality, Macedonians are greatest in number amounting to 13,649. There are also 495 Turks, 24 Roma, 8 Serbs and 84 people declared as “other”.

Concerning the economic activity in the municipality, there are 6,259 inhabitants who are active. 4,336 of them are employed and 1,923 are unemployed. 4,912 inhabitants register as economically inactive. On the basis of these data, we can conclude that there is a 32% unemployment rate in the municipality of Bosilovo, whereas the employment rate amounts to 69%.

Table 1: Population in the municipality of Bosilovo – Census 2002

No.	Village	Number of inhabitants	Number of households
1.	Borievo	926	278
2.	Bosilovo	1698	446

3.	Gecerlija	373	88
4.	Drvosh	699	163
5.	Ednokukevo	678	165
6.	Ilovica	1907	464
7.	Petralinci	605	174
8.	Radovo	851	200
9.	Robovo	576	149
10.	Saraj	937	245
11.	Sekirnik	1194	315
12.	Staro Baldovci	269	71
13.	Turnovo	941	242
14.	Hamzali	22	7
15.	Shtuka	781	207
16.	Monospitovo	1803	447
	Total:	**14,260**	**3,661**

Source: State Statistics Institution of the Republic of Macedonia

In terms of employment in sectors, the largest percentage of the population (70.7%) deals with agriculture, 12.6% are employed within the industry, whereas 16.7% are employed within the service sector.

2.8. Biological variety – natural water habitat Monospitovsko Blato (Monospitovo Bog)

The Monospitovo Bog is a natural rarity on the territory of the municipality of Bosilovo, occupying an area of 400 ha, which holds valuable flora elements of great scientific importance –. In 1986, the National Institute for Protection of Natural Rarities made a proposal for protection of the Monospitovo Bog in the category Monument of Nature. Although the swamp was proclaimed as a Monument of Nature by the the Council of the Municipality of Strumica, compulsory measures, such as appointment of a managing organization, making a management plan and financial support from the state,

have not been taken until today. The Monospitovo Bog is mentioned in the Strategy and the action plan for protection of the biological variety of the Republic of Macedonia (Ministry of Environment and Space Planning, 2004) as a locality of national interest. This national strategy makes provisions for the revitalization of the Monospitovo Bog as a part of the system of protected areas, by stimulating the traditional use of the biological variety and ecotourism, doing research projects etc. The Monospitovo Bog is recorded in the system **of protected areas in the Spatial Plan of the Republic of Macedonia (valid until 2020). Currently, the Ministry of Environment and Spatial Planning is acting towards passing a Law which will proclaim the locality Monospitovo Bog as a protected area in the category Monuments of Nature.**

According to the latest legislation in the Republic of Macedonia, the Monospitovo blato has not been officially declared a monument of nature. The existing legislation is completely different and content different from the regulation of 30 years ago when this site with the Decision (ordinary act) of the Council of the Municipality of Strumica is determined as a monument of nature.

Law on nature protectionhas other stipulations that a site should fulfill in order to obtain the status of a monument of nature (preparation of study for revalorisation of biodiversity, management plan for protected area, and finally proclamation of Law on proclamation of Monospitovo bog as Monument of nature enacted by Parliament of Republic of Macedonia). Hence officially this site has not yet received such a status.

The average height above sea level of the Monospitovo Bog is about 210 meters. Its lowest point is at 202 metres above sea level, whereas its highest point is at 240 metres above sea level.

ПЛАНСКА ОСНОВА НА МОНОСПИТОВСКО БЛАТО

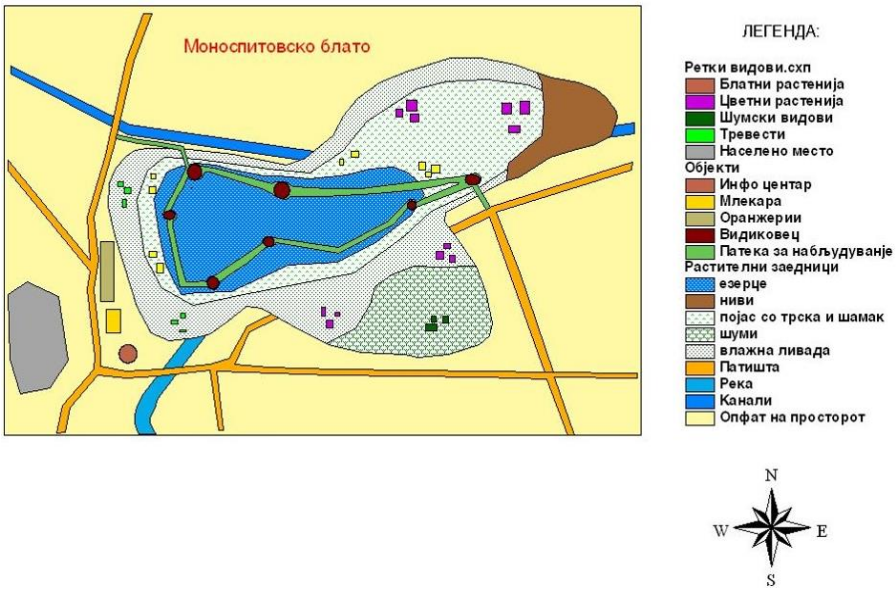
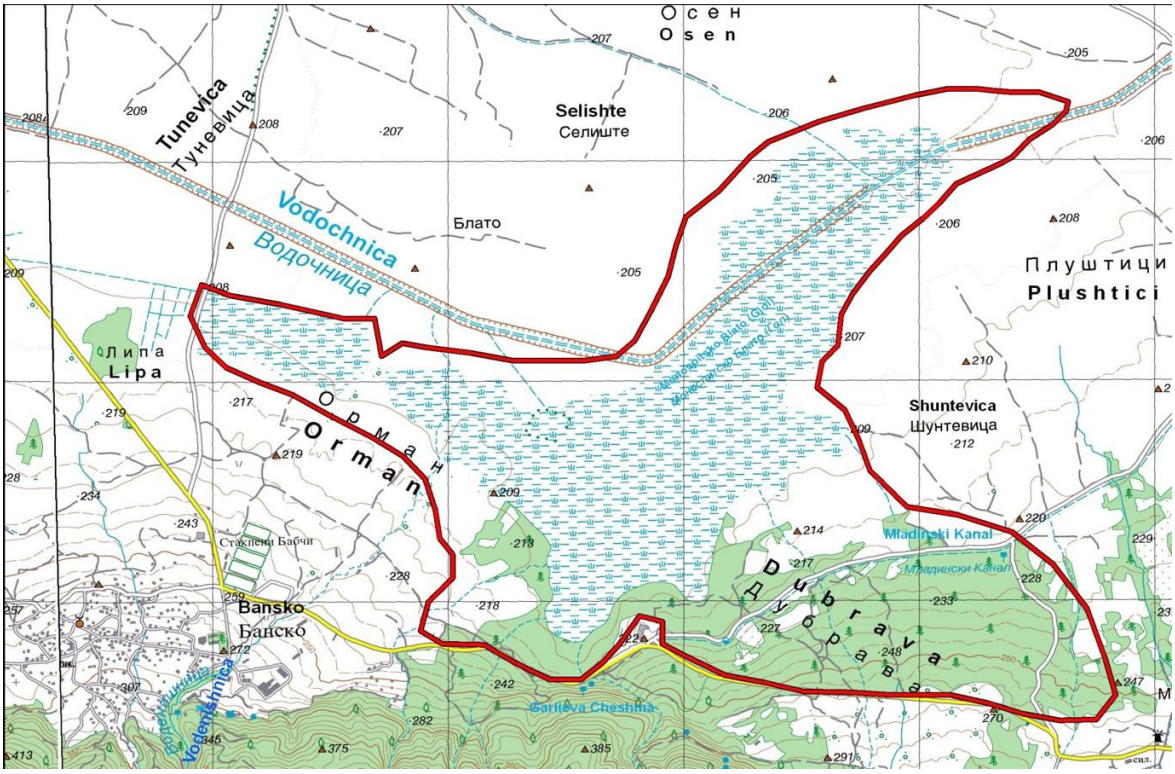


Image no.15 Planning basis on Monospitovsko blato

Legend:

Swamp plants	
Flower plants	
Forest species	
Grass	
Settlement	
Info center	
Milk factory	
Greenhouses	
Viewpoint	
Pathway for observation	
Lake	
Field	
Belt of cane and shrubs	
Forest	
Wet meadow	
Roads	
River	
Channel	
Scope of space	



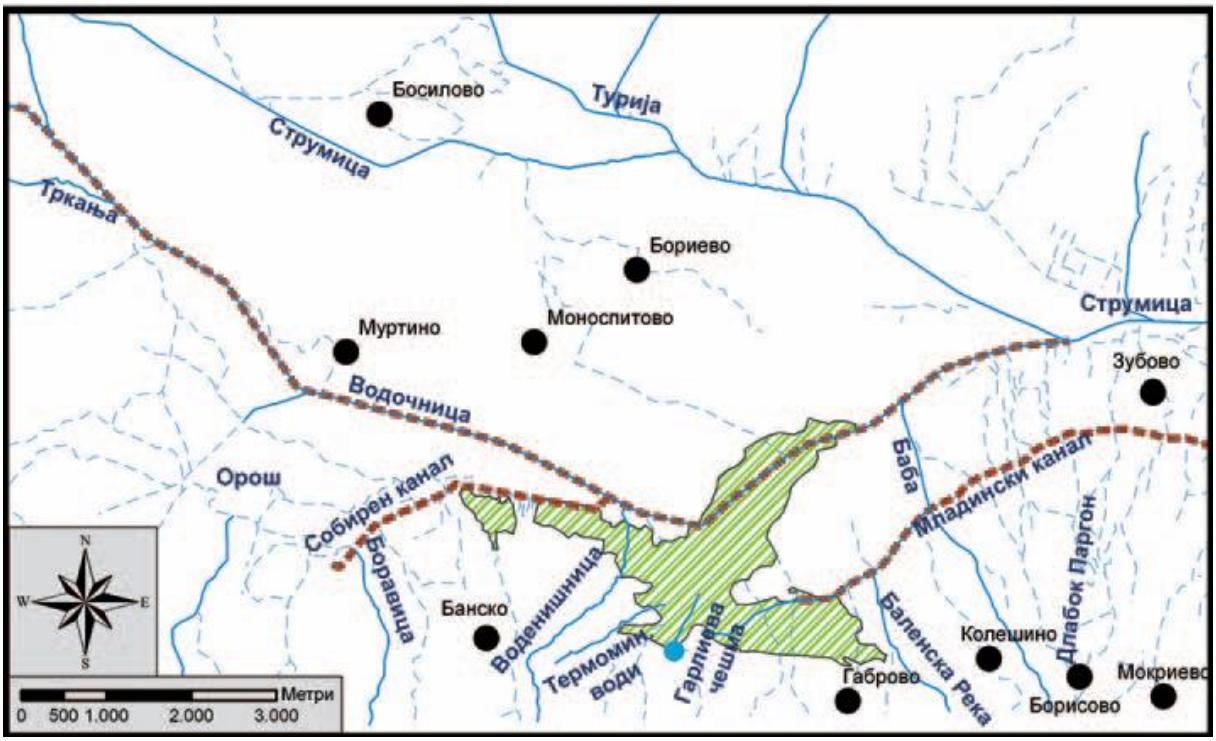


Image no. 17 The Maps of the Monospitovo Wetland

The basic feature of the Monospitovo Bog is, of course, its amazing plant diversity. Many remedial, useful, floating (natatorial), endemic, as well as other plant species can be found here. During the implementation of the project activities, the land on the site will not be cleared, disturbed or exploited at all. To access the location there is a local road along the river bank of the Vodocnica river. So the approach to the Monospitovo bog is facilitated.

Possibly the most important species in the Monospitovo Bog are the royal fern (*Osmunda regalis*) - IUCN Status Least Concern. This is the only locality in Macedonia where royal fern grows and it is in a very small part. Therefore, the municipality of Strumica passed a resolution for protection of the royal fern as a Monument of Nature in 1987 (Official Gazzette of the Municipality of Strumica No. 7/1987).

The four-leaf marsilea (Marsilea quadrifolia) - IUCN Status Least Concern, also grows here. It is a type of fern that looks like clover with four leaves which float on the water surface. This plant is mentioned in the Bern Convention as an endangered species. In addition, there are some other plants which are very rare in the other parts of Macedonia, but grow here in a limited space, such as the swamp fern (*Thelipteris palustris*) - IUCN Status Least Concern, the Smyrna tamarisk (*Tamarix smyrnensis*), the blue-eyed grass (*Sisyrinchium bermudiana*), the violet salep (*Orchis laxiflora*), Isoetes phrygia, the prickly amaranth (Amaranthus spinosus), *Cladium mariscus* - IUCN Status Least Concern, etc.

Image no. 19 *Osmunda Regalis* (royal fern)

The spider fauna at the Monospitovo Bog is not very known. One of the most significant discoveries is the determination of the presence of the fisher spider (Dolomedes plantarius) which is put on the IUCN as vulnerable taxon.

There are many spiders that live in the bog, such as: Mendoza canestrinii (not yet assessed for the IUCN Red List) which was last seen in Macedonia in 1929 and after 80 years it can be found only in this Bog. *Clubiona phragmitis* (not yet assessed for the IUCN Red List) and *Hypsosinga heri* (not yet assessed for the IUCN Red List)– species which can be found in Macedonia only in Monospitovo Bog.

There are 11 species of amphibians and 16 species of reptiles registered in the Monospitovo Blato and its surroundings. Following amphibians can be found in Monospotovo bog: Smooth Newt (*Lissotriton vulgaris*) Status: Least Concern, Southern Crested Newt (*Triturus karelinii*) Status: Least Concern, Common Fire Salamander (*Salamandra salamandra*) Status: Least Concern, Yellow–bellied Toad (*Bombina variegata*) Status: Least Concern, Green Toad (*Bufotes viridis*) Status: Least Concern, Common Toad (*Bufo bufo*) Status: Least Concern, European Tree Frog (*Hyla arborea*) Status: Least Concer, Eastern Spadefoot *Pelobates syriacus* (*Pelobates syriacus*) Status: Least Concern, Agile Frog (*Rana*

dalmatina) Status: Least Concern, Greek Stream Frog *Rana graeca* (*Rana graeca*) Status: Least Concern, Marsh Frog *Pelophylax ridibundus* () Status: Least Concern, as well as following spicies of reptiles: Western Caspian Turtle *(Mauremys rivulata)*, Status: Least Concern, European Pond Turtle (*Emys orbicularis*) Status: Lower Risk/near threatened, Hermann's Tortoise (*Testudo hermanni*) Status: Near Threatened, Common Wall Lizard (*Podarcis muralis*) Status: Least Concern, Erhard's Wall Lizard (*Podarcis erhardii*) Status: Least Concern, Balkan Green Lizard (*Lacerta trilineata*) Status: Least Concern, Green Lizard (*Lacerta viridis*) Status: Least Concern, Peloponnese Slow Worm (*Anguis cephallonica*) Status: Near Threatened, Tessellated Water Snake (*Natrix tessellata*) Status: Least Concern, Grass Snake (*Natrix natrix*) Status: Lower Risk/least concern, Large Whip Snake (*Dolichophis caspius*) Status: Least Concern, Four-lined Snake (*Elaphe quatuorlineata*) Status: Near Threatened, Aesculapian Ratsnake (*Zamenis longissimus*) Status: Least Concern, Dahl's Whip Snake (*Platyceps najadum*) Status: Least Concern, Smooth Snake (*Coronella austriaca*) Status: Least Concern, Horned viper (*Vipera ammodytes)* Status:Least Concern

As far as mamals are concerned, the presence of the otter (*Lutra lutra*) is of significant importance (IUCN Status: Near Threatened), as well as of seven species of bats: *Rhinolophus mehelyi* (IUCN Status Vulnerable), *Rhinolophus ferrumequinum (*IUCN Status Least Concern)*, Rhinolophus hipposideros (IUCN Status* Least Concern)*, Miniopteris schreibersi*, *Myotis blythii (*IUCN Status Least Concern), *Myotis myotis (*IUCN Status Least Concern) and *Myotis capaccinii* (IUCN Status Vulnerable).

All of these species are included in the Bern convention and the European directive. According to the last estimations of the IUCN Red list of endangered species, *Rhinolophus mehelyi* and *Myotis capaccinii* were included in the category **vulnerable species, while** the otter (*Lutra lutra*), European Pond Turtle (*Emys orbicularis*), Peloponnese Slow Worm (*Anguis cephallonica*), Four-lined Snake (*Elaphe quatuorlineata*) have Near Threatened status**.**

According to the IUCN Red list of endangered species, on global scale, the otter is categorized as nearly threatened**.**

The number of otters in Macedonia is reducing, so It is necessary to start activities for preservation of this animal species and its habitats. The otter could be one of the leading species for preservation of the Monospitovo Bog as its habitat.

The **fish** i.e. fishing in the Monospitovo Swamp was an activity of existential importance for the local population. Having in mind the current state of the Monospitovo Bog (dried-up and with poor quality of water), the fact that there is such a small number

of fish species does not seem strange. The waters which flow into the swamp gravitate towards the Monospitovo canal, which is located downstream of the swamp, due to the configuration of the terrain. The inflow of water from the base of the mountain Belasica has decreased as a result of the drying-up of sources gravitating towards the swamp. It can be said that the Bog is not a permanent habitat for most of the fish, but it is a significant location for their spawning. That is especially true of the pike (*Esox lucius IUCN Status Least Concern*), which undoubtedly comes to the Monospitovo Bog to spawn.

The data from the local population show that not so long ago (ten years ago), the pike stayed throughout the year in parts of the Monospitovo Swamp which were constantly under water, together with other carp-like fish.

In the water of the river Strumica the following species of fish can be found: the pike (Esox lucius), the bitterling (Rhodeus amarus- *IUCN Status* Least Concern), the Strumica barbus (Barbus strumicae- *IUCN Status* Least Concern), the Strumica ray-finned loach (Cobitis strumicae- *IUCN Status* Least Concern), the chub (Squalius Orpheu *IUCN Status* Least Concern), as well as the introduced (*Pseudorasbora parva, Carassius gibelio* i *Gambusia Holbrook- IUCN Status Least Concern)*. The Strumica barbus and the Strumica ray-fnned loach live in the outflowing waters, but not in the Monospitovo swamp nor in the quiet parts of the canals.

There is no additional protection or proclamation of certain protected species on this locality in accordance with the national or other regulative.

The introduced species of fish tolerate pollution, but are invasive and represent a threat to the population of indigenous fish. The mosquitofish (Gambusia holbrooki) is a species of fish introduced to fight the malarial mosquito biologically. So far, there have not been any relevant data to prove that this species has an effect on the decrease of the malarial mosquito population, but there is evidence that it influences the indigenous species of fish, thus seriously endangering a large number of endemic species.

Because of the drying-up of the Monospitovo Bog and the moist meadows in its surroundings, the number of storks which nest in its vicinity has decreased considerably. There is no information on their number before the drying-up, but supposedly it exceeded 150 couples. In 1958, the number of storks in the villages in the vicinity of the swamp was at least 80 couples, and in 2007 this number was reduced to about 20 couples.

A total of 112 species of birds have been registered in the area of the Monospitovo Swamp. However, this number is not final, and possibly exceeds 130 couples. Unfortunately, despite the relatively large number of species, it is strange that there are so few birds of each species – of most birds typical of water habitats, only several couples or single birds. A large number of birds which are interesting to birdwatchers or are of

interest for protection, can be found in the Monospitovo Swamp only sporadically, and are difficult to see.

Of the total number of species, 48 are related to the swamp habitats, whereas the rest are related to the farmland in the vicinity, the bushy areas, or they come from the surrounding settlements. 63 species are considered birds that nest constantly, but only 19-21 of them belong to the group of birds related to the swamp habitats, which is a small number. This clearly depicts the adverse state of the swamp. At least 4 other bird species can be found in the area of the Monospitovo Swamp in search of food, although they do not nest there. In addition, out of the same group at least 7 species can be found over the winter and at least 16 others can be observed while migrating.

The following nesting birds can be found in the area of the Bog: the little bittern (*Ixobrichus minutus* - IUCN, Least concern), the mallard (*Anas platyrynchos* -- IUCN, Least concern), the common moorhen and the water rail (*Rallus aquaticus* - Status: Least Concern, *Gallinula chloropus*- - Status: Least Concern), the marsh harrier (*Circus aeruginosus* - Status: Least Concern), the lapwing (*Vanellus vanellus* - Status:Near Threatened), several species of reed warblers (*Acrocephalus* spp.) as well as other widespread species. During the nesting period many bird species, such as the black stork (*Ciconia nigra* - Status: Least Concern), the grey heron (*Ardea cinerea* - Status: Least Concern), the little egret (*Egretta garzetta* - Status: Least Concern), the lesser spotted eagle (*Aquila pomarina* - Status: Least Concern) and other species which nest in its vicinity, come in search of food.

The little grebe (*Tachybaptus ruficollis* - Status: Least Concern), many kinds of ducks, such as the common teal (*Anas crecca* - Status: Least Concern*)*, the wigeon (*Anas penelope* - Status: Least Concern*)*, the garganey (*Anas querquedula* - Status: Least Concern), the marsh tern (*Chlidonias* spp – IUCN Status: Least Concern.) and many others can be seen during the winter or while migrating. A small number of birds of prey (one or two couples of each species), such as the goshawk - *Accipiter gentilis* - Status: Least Concern, the sparrowhawk - *Accipiter nisus* - Status: Least Concern, the common buzzard - *Buteo buteo* - Status: Least Concern, the long-legged buzzard - *Buteo rufinus* - Status: Least Concern, the short-toed eagle - *Circaetus gallicus* - Status: Least Concern, and the common kestrel - *Falco tinnunculus* - Status: Least Concern can be seen in the vicinity of the Monospitovo Swamp, as well as the following bird species: the bee-eater (*Merops apiaster* - Status: Least Concern), the hoopoe (*Upupa epops* - Status: Least Concern), the common cuckoo (*Cuculus canorus* - Status: Least Concern), larks (the calandra lark - *Melanocorypha calandra* - Status: Least Concern, the skylark - *Alauda arvensis* - Status: Least Concern), swallows (*Hirundinidae*), thrushes (*Turdidae*), old world warblers (*Sylviidae*), tits (*Paridae*), finches (*Fringillidae*), buntings (*Emberizidae*) etc., some potentially voulnerable.

The black stork and the lesser spotted eagle belong to the group of rare birds in Macedonia, with an estimated number of more than 30, i.e. 10 couples. One couple of each species can be found in the Monospitovo Swamp during the breeding period. They nest in the surrounding mountains, and come to the Monospitovo Swamp in search of food. Both species are very sensitive to disturbance.

Image no. 21 A pelican from the Monospitovo Bog

There are many threats to the survival of the Monospitovo Bog:

-The change of the hydrological regime i.e. the hydrography of the Monospitovo Bog and its surroundings began after the Second World War, in 1947. Before then, the open water area of the Monospitovo Bog covered about 500 ha, and it was mainly filled by the rivers Vodocnica, Trkanja, Vodenicnica, Baba, and Barlenska Reka, as well as from the many torrential waters and streams flowing down from Belasica. With the land-improvement interventions, the river Vodocnica was dug up on the part next to the Swamp up to the part where it flows into the river Strumica (since then it has been known as the Monospitovo Canal) in order to drain the water of the Monospitovo Swamp. The Youth Canal, which is 16 km long, was dug up together with the Monospitovo Canal at the foot of the mountain Belasica in order to receive the largest part of the waters which came from Belasica and filled the Swamp. By digging the abovementioned two canals, the marshy part of the Swamp was reduced to the maximum and today it consists of several puddles in which the water level varies depending on the weather conditions. After the first land-improvement interventions in 1947, there were a few other interventions (in the period 1963-2006), which enforced the drainage of the Bog. Over the past 20 years, the state of the hydrologic network of the Monospitovo Bog and its surroundings has constantly been changing. Some of the old canals have been buried because of the poor

maintenance. New canals have been dug up for the needs of the local farmers. All these changes of the hydrological regime have had an effect on the spreading of the flora and fauna, as well as on the fragmentation of the habitats.

-Destruction and degradation of the habitats – The destruction of the habitats is the most serious threat identified in the Monospitovo Bog at present. The drainage of the swampy areas as well as the cutting and burning of the reed and the other plants in order to increase the fertile land for farming reasons is noticeable on all the peripheral parts which border the farmland. The loss of the habitats reflects on all the plant and animal groups. The species which live in the water ecosystems characterize with low level of adjustment, so that the destruction of their habitats inevitably results in dramatic decrease of their population and complete extinction. By burning the reed, birds' nests and a significant number of the food sources (various invertebrates which live in the Monospitovo Swamp) are directly destroyed. It is essential to know that even the locality where royal fern grows has not been spared of burning.

-Eutrofication and water pollution – the eutrofication and water pollution is a very serious threat to the biological diversity of the Monospitovo Bog. Most of the pollutants come from the continuous discharge of faecal waste waters in the river Vodocnica, which also carries the communal waste waters of the town Strumica (the sewerage). The continuous and uncontrolled use of chemical preparations (natural and artificial fertilizers, pesticides) in the surrounding farmland considerably intensifies the water pollution of the Monospitovo Bog. The existence of industrial capacities on the territory of the Bog is an additional serious threat. The presence of the ά-mesosaprobic diatom indicators is a proof of the poor quality of the water. Certain species of fish (*Pseudorasbora parva, Gambusia affinis, Carassius gibelio*), which are of the greatest number in the canals, indicate heavily polluted waters. The increased use of chemicals in farming causes serious problems in the population of amphibians and reptiles. The effect of these toxins can be instant (direct) or delayed. The delayed effect can be clearly seen when these chemicals enter the food chains. Having a cummulative effect, they cause the largest rate of mortality the following year when the animals awake from hibernation and are weakened by the long period without food. The use of fertilizers and chemical preparations in farming undoubtedly causes soil pollution, and moreover, it pollutes the farming products used in human as well as in stock nutrition. The pollution of the subterranean waters used as drinking water (artesian fountains, wells) is a direct threat to the health of the local population in the vicinity of the Monospitovo Bog.

Hunt and fishing.The excessive bird hunt in the Monospitovo Bog and the surrounding area is the main threat which leads to their extinction. This is particularly true for the protected species.

There is also poaching in this locality. The use of traps to catch otters which enter the neighbouring fishponds in search of food is a common practice in the Bog. The fish poaching is particularly frequent in the period of pike spawning, when this species is the most vulnerable. This endangers its survival in the Bog. The hunt and the poaching are one of the main reasons why there is such a small number of birds. The pressure caused by the hunt and poaching, possibly higher than in any other place in Macedonia, means that many birds are directly destroyed, and those that evade the shots are signifcantly disturbed. The hunt is also indiscriminate, which implies that the species which are protected by the Law or are not part of human nutrition are also hunted.

Poaching is very common during the night, thus the birds which perch on the Bog in order to rest or feed are deprived of shelter. Fortunately, this conditon can easily be improved by issuing a constant hunting prohibition, which will result in a considerable increase of the number of birds in a short period of time (one or two years). Therefore, the HA (Hunting Association) Goce Delcev from Bosilovo controls the hunt by an organized watchmen service as well as by employing a person who is responsible for physical protection of the Bog in the event of fire, usurpation, devastation, and other undesirable events.

Image no. 22 The Monospitovo Bog

Image no. 23 The Monospitovo Bog

Image no.24 The Monospitovo Bog

In the municipality, hunt is developed on the hunting ground of the HA Goce Delcev from Bosilovo. This association takes care of the game and is responsible for the proper treatment of game (breeding, protection, feeding etc.). The hunting ground has its own watchmen service. The total area of the hunting ground amounts to 13,990 hectares and 450 hectares of area on which hunting is not permitted. The folowing species of game can be found here: wild boars, foxes, partridges, pheasants, wolves, rabbits, quails and others.

There is one larger fishpond in the municipality, where fish is bred in a natural way, and it is in the area of the village Monospitovo, near the Bog. The fishpond is a private property with an area of about a hectare. The capacity of the fishpond is 6,000-8,000 fish per year, for which 1.4 tons of food is needed annually.

2.9 Urbanistic and Spatial Planning

The existent urbanistic documentation for the municipality of Bosilovo does not meet the standards due to its being outdated. Therefore, it is necessary to replace it with a new one in order to achieve better planning of the development of the municipality as well as in order to use the space possibilities of the municipality to the maximum. At present, the municipality holds the following urbanistic documentation:

-General urban plan for a head office of the municipality of Bosilovo, passed in 1999,

-Elaborate urban plan for the settlement Bosilovo, passed in 1988,

-Urbanistic documentation: Saraj – passed in 1975, Ednokukjevo – passed in 1975, Turnovo – 1986, Petralinci – 1986, Sekirnik – 1987, Borievo – 1987, Radovo – 1987, Robovo – 1987, Monospitovo – 1987, Ilovica – 2001, Shtuka – 2001, and Gecherlija – 2001.

-General Settlement Act (Communal organization programme) in 1988 for the settlements Staro Baldovci and Drvosh.

The construction requirements i.e. the construction permits are issued on the basis of the abovementioned urbanistic documentation in accordance with the Construction Law. There are large areas of building land which have not been built on. They are situated within the construction range of the settlements, but are not in the possession of the municipality. This has a great impact on the opportunity to achieve a local economic development of the municipality via selling the abovementioned land to local as well as to foreign investors.

3. Environmental impacts

The environmental management plan aims to provide an assessment of the potential impacts on the environment and society associated with the proposed activities.

3.1. Emissions into the air

The sub-project location is a relatively peaceful place, without intensive traffic that

would dramatically affect the environment and air pollution.With the construction, use and maintenance of the planed infrastructure, substantial change the air quality is not expected, given the fact that the scope of work is limited to construction of proper parking lot on locality already used as such and pellet central heating system installation which will be upgraded since currently wood-burning stove is used.

The only air polluters in the construction phase will be the vehicles and machinery used by the contractor. However, it is envisaged that they will be of minimal and short duration (during the performance of the work) and will have no serious impact on the air quality.

Therefore, there is no potentially negative impact on the realization of this sub-project on any sensitive area of the environment. In conclusion, there will be no additional discharge of contaminants in the air that would have a significant impact on the environment.

The planned project for the construction and reconstruction does not foresee the emergence of obstacles that would act to change the direction of the wind, so do not expect additional significant climate impact of subject areas from what is described and typical for this region.

In operational phase there will be no air emissions except those from use of pellet central heating system within the Center. This impact will be long term, with low (minor) significance and intensity as well as with local character (equal or lower impact in comparison to current state – use of wood furnace).

3.2. Emissions into water and sanitation

During the activities that will be carried out during the construction and the reconstruction envisaged in the subproject, emissions in the underground and surface waters are not expected, nor in the atmospheric (storm) sewage system. It is particularly important to avoid any kind of leaks of oil and gas from construction machinery that would be in direct contact with the soil, and indirectly with groundwater, ie water resources.

Sanitary facilities will be provided for workers (chemical toilets or existing infrastructure).

Project activities at the site (inside the muddy areas) will be performed summer time when the ground is dry and there is no water, additionally no heavy vehicles and electrical equipment will be used in reconstruction of wooden infrastructure so there will be no conditions for any emissions in the waters. Materials used in rehabilitation, wood in particular, will not be treated with any type of agent (coating, impregnaton, etc.) or dye. There will be no anticorrosion measures applied at the site either.

3.3. Emissions into soil

The project activities that are to be performed will not have any influence over the soil, because no heavy vehicles and electrical equipment will be used in reconstruction of woden infrastructure, reconstruction works will be conducted manually and immediate surroundings of wooden infrastructure will be treated carefully and in accordance with a certain procedure. There will be no waste. left on the soil, communal waste created by engaged workers will be placed in an adequate container and later transported by vehicle. The constructor will not allow any leakage of motor oil from the vehicles which will perform the predicted infrastructural activities. These precautions will protect the underground waters as well.

Project activities must be undertaken in such mannor to disable incidental emissions in the soil as well as damage of the soil structure by movement of vehicles. Possible incidental emissions include leakages of fuel, oil, lubricants or other chemicals as well as excavated topsoil runoff due to rain and erosion

Contractor must take into account the precosionarry mitigation measures given in Mitigation Plan Table below, in order to prevent possible leakage of fuel or engine oils from the engaged construction machinery in the soil.

The execution of the works at the locality Monospitovsko Swamp (renewal of the wooden infrastructure) will not cause any impact on the soil because only timber material will be used as an accessory material.

3.4. Noise, vibrations and non-ionizing radiation

The term "noise" means any unpleasant sound that the human ear hardly tolerates. Noise as a complex physical phenomenon depending on intensity, duration and frequency, adversely affect the psycho-physical condition and permanently or partially damages the hearing aid.

The occurrence of noise is expected through use of the vehicles, machines and power tools of the contractor.

The occurrence of noise from the motor vehicles of the contractor while working will have quite small negative impact due to the fact that it has a limited duration and local character. Noise emissions should be insignificant if contractor use vehicles and construction machinery according to technical standards and construction activities are performed during daytime hours (7-19h).

When performing the works in the Centre for alternative tourism (at the location planned for equipping and installing of equipment) there will be noise from the hand and

power tools, but since the equipping and installing is indoors, its impact will be quite small for the external environment and the people living nearby.

3.5. Waste generation

During construction of parking lot, instalation of equipment and reconstruction of wooden paths, cottages and veiwponts, the size of the waste will vary. Creation of waste from construction activities can potentially pollute the surrounding environment. Almost all of the generated waste will be inert and will be produced during the construction phase. According to the list of types of waste, most of the waste generated by the project activities is categorized as a construction and demolition waste as well as generation of small quantities of hazardous wastes e.g. due to accidental spillage of machine oil, lubricants, fuel and other hazardous substances, residual coatings and contaminated packaging. Purchase and installation of equipment for the Center might produce non hazardous wastes (paper, cardboard, plastic and other synthetic materials) because of the equipment out boxing (packaging wastes).

The inert waste that will be produced is placed in the category of non-hazardous waste. It does not adversely affect the environment, but it is still necessary to have a location where that waste will be disposed.Inert waste (eg soil, concrete, crushed stones and tiles, etc.) can cover large areas and may disrupt the landscape. Most of the excavated soil will be used for coating and will be stored for further use on temporary surfaces.Waste quantities would be minimal if there is proper waste management using the best available techniques for reducing waste during the construction phase and during the operational phase.The obligation to handle waste that will be created during the execution of the project activities will be on the contractor of the works.

The construction waste created, will be carried to a closest legal landfill. The waste from the reconstruction of the wooden infrastructure and other activities will be deposited on temporary site outside of the wetland and later delivered to Public Communal enterprise "Ograzden" - Bosilovo for disposal to legal landfill.

3.6. Impacts to nature, habitats and species

Monospitovsko Blato is a natural habitat for many species of flora and fauna. As a vast habitat for many species is a significant destination of the natural ecosystem in the region.

The project activities to be carried out on the project site in Monspitovo bog will be carefully planned and implemented in order not to disturb the wildlife nor to damage and destroy their natural habitats.

Possible adverse impacts to the wildlife may occur in construction phase due to the increased number of people on the site. There is a possibility of disturbance of wildlife from noise created from reconstruction activities. Also there is a risk of accidental ignition of fire and littering. These impacts are local and limited to the location of reconstruction activities with small possibility of occurence.

The natural ambience of the environment will be carefully guarded and promoted. Workers who work on the site will be familiar with the procedures they need to take in order to not disturb the natural ecosystem.

None of used materials will be toxic for the environment, nature (especially aquatic) and people. There will be no treatment of wood (with coatings, dye, etc.) and no treatment of other materials at the site (e.g. using anticorrosives). The renovation and reconstruction of cottages, paths and observation posts will remain within the existing size and design.

In operational phase there is a possibility of increased waste creation due to the expected increased number of tourists. Main risk for the wildlife is status quo is related to the proclamation of the bog for Monument of nature. Not having official body responsible for protection and management increases the possibility for hunt of animals in breedeng seasons, poaching, unauthorised collection and irrational use of flora and fauna, and disturbance of existing wildlife. Lack of management organization, preparation of a management plan and financial support from the state can lead to impacts, assessed as possibly long term and with repetitive occurrence.

We consider that the impacts on nature, species and habitats will be minimized without danger for their serious threat - because we are advocating for a longer time to protect this natural biodiversity.

3.7. Social impacts

The implementation of this subproject is expected to give positive socio-economic benefits to the region through increased employment opportunities, as well as through improved access and a better market for goods and services. No land acquisition or resettlement of local population is envisaged within this sub-project. The biggest benefit will be the possibility of developing rural eco-tourism, the development of local crafts and the development of the local economy. Positioning of this site on tourist map will enable better tourist information and opportunities for its further development. Certainly, the positive socio-economic benefits arising from this project will be greater than the negative effects on nature and the environment, which explains the justification for the implementation of these project activities.

4. Mitigation measures

Mitigation measures described in this section are the general ones, detailed mandatory mitigation measures are provided in the table in the Mitigation and Monitoring Plan chapter.

Contractor must comply with all OH&S requirements in order elimination of injure possibility for workers, local population and tourists. All reconstruction activities must be done by trained workers.

Entities in charge of implementing the environmental protection program:

1. Contractor (selected company in a tender)
2. Supervision engineer
3. Applicant (Benefitiary) / Municipality of Bosilovo.

4.1. Air

During the construction works, following preventive measures should be implemented in order to minimize the negative impact on air:

- Careful determination of the time of work on parking lot (within the settlement of Monospitovo).- Restriction of unnecessary traffic on the construction site. - Implementation of regular maintenance of vehicles and construction mechanization and periodic repairs procedures in order to reduce leakage, emissions and dispersion.

-Using a quality (in accordance to national standards) fuel for vehicles. Using protective equipment as masks for workers at work in conditions of dust. Providing measures for protection of vehicles and equipment - particularly the measures for maintaining the installation (pipes) for the exaust fumes, the filters for the motor oil, and regular service of equipment.

4.2. Water

During the construction works, following preventive measures should be implemented 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 construction site location (parking lot).

- Contractor vehicles and construction mechanization use existing access roads.

- Careful selection of the location for building material, warehouses / disposal of the construction waste (locations should be envisaged within the site for construction of parking lot).

4.3. Soil

During the construction works, following preventive measures should be implemented in order to minimize the negative impact on soil:

- Careful planning of the construction works in order to reduce the negative effects and ensure the prevention of soil pollution.- Reducing the size of the site due to the minimization of the land that will receive negative impact (all proposed construction activities must be conducted within the footprint of the site proposed for construction of parking lot).- Restrictions on the movements of vehicles and the use of machinery that exerts less pressure on the land.- All of the hazardous materials as fuels, lubricants, glues as well as packaging waste and non inert wastes must be placed in separated apropriate containers (suitable to accept and contain any kind of leakages) located on construction site, protected from extreme weather conditions (rain, wind).

-Protection of construction materials and stoping of construction activities in conditions of torrential rains.- The area of the construction site will be limited.

-All borrowings of gravel and sand, ie landfills where excess of excavated material will be disposed must posses appropriate permits/approvals.

4.4.Noise

During the construction works, following preventive measures should be implemented in order to minimize the negative impact on noise:

- Construction activities can only take place during the daytime (07-19h) as agreed in the permit.

- Construction activities should be planned appropriately to reduce the use time of the equipment that creates the most intense noise.

- As it is a urban residential area (driving through the town to the site) the level of noise should not exceed 55dB during the day and evening and 45dB during the night

- 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.

- use of best building practices with particular emphasis on noise levels.

4.5. Waste

During the construction works, following preventive measures should be implemented in order to minimize the negative impact on waste:

- Establishing contact with authorized collectors, transporters of different fractions of waste and enabling its safe final disposal.-Generated waste should be stored at specific locations on parking lot construction site marked with the type of waste (hazardous / non-hazardous / inert) until the moment of collection, transport and final disposal.-The vehicles transporting the waste from the construction site should be covered to prevent dispersion.-Construction 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.

- Classification of waste according the national List of Waste (Official Gazette no.100/05),

The main waste would be classified under the Waste Chapter 17 “Construction and demolition wastes (including excavated soil)” and Waste Chapter 20 “Communal waste (waste from household and similar waste from commercial, industrial and administrative activities) including fractions of selected waste".-Generated waste, if possible, should be reused as a building material (with approval of Supervision engineer, Beneficiary and LRCP Environmental expert).-The construction waste will be disposed at a landfill for inert waste.

- A waste that is generated during the stay and work of the Contractor employees, applying the best management practices, should be collected, transported and deposited in a landfill that meets the basic standards in accordance with the legal acts.

4.6. Biodiversity (flora and fauna)

During the construction works, following preventive measures should be implemented in order to minimize the negative impact on biodiversity (flora and fauna):

-The space that will be affected by construction should be reduced to a minimum

in the planning phase of the construction site.

- There will be no land clearing and no removal of tall greenery at the nature site. In te case tree removal located in the immediate surroundings of the parking lot as well as the higher wood on the plateau in front of the building cannot be avoided, it will be carried out only upon the written permission of the competent authority (e.g. forest management authority).

- Prohibit the collection of firewood from and around working areas.

- Plan of works will be reviewed and approved by a nature protection expert/biologist. Works in the sensitive nature area (swamp) will be supervised by the expert.

- Works during sensitive periods (e.g. breeding) for voulnerable and (nearly) threatened will be avoided.

- Disturbance of animals and collection of plants in the area is prohibited.

- Only locally produced, virgin wood/timber with certified origin and identical species to the original installation will be used for rehabilitaton.

- No green surface is to be removed. No trees will be damaged or removed during works in Monospitovsko Blato.

5. Environmental and social management plan

5.1 Mitigation Plan

Municipality of Bosilovo is responsible for environmental compliance of the project preparation, implementation and operation with the national legislation, this ESMP and the measures it defines as well as ESMF of the overall project. Monitoring of environmental and social compliance, as defined in the Monitoring Plan is a responsibility of Municipality of Bosilovo. Municipality of Bosilovo will report the environmental compliance and environmental measures and monitoring implementation progress to the PIU in the regular project progress reports as well as quarterly during the implementation period.

The prepared Environmental and Social Management Plan for these sub-projects will be part of the bidding and contracting documentation for all project activities. The Contractor will be obliged to implementation of the envisaged measures according to the Mitigation Plan. The Supervising engineer has an obligation to monitor and evaluate the

implementation of the proposed measures within the Monitoring Plan and to inform the investors and the Project Office (Municipality of Bosilovo).

The public will be included in the procedure for impacts assessment during the public hearings in the Municipality of Bosilovo. The submitted comments will be included in the Report from the public hearing which will be part of the Plan. This way all comments from the public will be available to the applicants and they will take all relevant comments and will include the answers and remarks into the final ESMP.

The implementation of the Environmental and Social Management Plan will ensure timely undertaking of the proposed measures and will contribute for realization of the project activities without significant environmental impacts.

Mitigation Plan
Preparation and Construction Phase

Activity	**Expected Environmental Impact**	**Proposed Measure for Mitigation**	**Responsibility for Implementing Mitigation Measure**	**Period of Implementing Mitigation Measure**	**Cost associated with implementation of mitigation measure**
All works	Possible adverse social and health impacts for the workers and local population as a result of non-compliance with the safety measures	- Planning of the time for startup of the project activates (during the working days when number of tourists and local population on/near the project locations is low). Public is informed of works. - All needed permits, opinions and decisions have been obtained before the works commence. - Environmental, nature protection and other relevant inspections and competent authorities have been notified of works before they start. - Access paths for local population to their homes must be ensured. - Implementation of Good construction practices during the reconstruction phase including: - Ensure proper marking of the project locations with tapes and warning signs	Constructor Supervision engineer Municipality of Bosilovo	During construction	the expenditure is included in the bill of quantities

		- Set up an Information Board on the project locations with general data about the project, and name of the Contractor and the Supervisor; - Installation of signs for reducing / limiting of the vehicle speeds near the project location of the parking lot; -Access of non-authorized personnel within the project locations is not allowed. The site and works will be organized and ran in a safe manner. All potentially dangerous spots (e.g. ditches, hoes and piles) are marked and protected; - Set up a special traffic regime, 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 instalation of signs to ensure safety, traffic flow and access to land and facilities; - Ensure pedestrian safety. Special focus for safety of children since school is in the vicinity (fence off the site). - Set up of vertical signalization and signs at the beginning of the rehabilitation site; - Adequate warning tapes and signage need to be provided and placed;			

		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 (e.g. for works in heights 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. Procedures for cases of emergency (including spills, accidents, etc.) are available at the site.			
	Transport and materials management (Activity A&B)	- Wearing protective equipment and clothes (hardhats, etc.) at all times. -Installed boards and signs must no interfere with traffic safety and visibility. - Coarse aggregate in concrete applied and used in rehabilitation need to conform to durability and gradation requirements. - Mineral resources (aggregate, sand, gravel, etc.) are procured only from licensed companies with valid concessions for extraction/exploitation.			

	waste management	The companies can prove H&S measures and environmental management is in place. - Only locally produced, virgin wood/timber with certified origin and identical species to the original installation will be used for rehabilitaton. The good waste management practice will be applied including: • Identification of the different waste types that could be generated at the reconstruction site and its classification according the national List of Waste (Official Gazette no.100/05); • 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. • 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 waste will be reapplied to its original location or reused. • All construction waste will be collected and disposed properly by licensed collectors and at licensed landfills/processing plants. • 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			

	air emissions	• 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 all waste types by a licensed company; • The construction waste should be promptly removed from the site and re-used if possible;The incineration of all waste at site or unlicensed plants and locations is strictly prohibited. • Hazardous waste will be separately collected and collected, transported and disposed/processed of all waste types by a licensed company.; • Construction site, transportation routes and materials handling sites should be water sprayed on dry and windy days. • Construction materials should be stored in appropriate places covered to minimize dust • Vehicle loads likely to emit dust must be covered. • Restriction of the vehicle speed to the reconstruction location. • 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. • All loads of soil are covered when being taken off the site for disposal.			

		• 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. • There will be no excessive idling of construction vehicles at sites.			
	- emission of noise	- using low noise machinery - As it is a urban residential area (the site is within the settlement of Monospitovo) the level of noise should not exceed 55dB during the day and evening and 45dB during the night - The construction work will not be permitted during the nights, the operations on site shall be restricted from 7.00h to19.00h (agreed in the permit). - 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. - Pumps and other mechanical equipment should be effectively maintained.			
	- toxic / hazardous	- Temporarily storage on site of all hazardous or toxic substances (including wastes) will be in safe			

	materials and hazardous waste management	(leak-proof) containers labeled with details of composition, properties and handling information. - Hazardous substances (including liquid wastes) should be kept in a leak-proof container to prevent spillage and leaking. This container should possess secondary containment system such as bunds (e.g. bunded-container), double walls, or similar. Secondary containment system must be free of 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 facility's property line. - 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. There will be no anti-corrosion measures taken at the site. There will be no storing of a large amount of fuel at the site.			

	Emergency Preparedness	Ensure workers are familiar with safety regulations and storage requirements for each product. Provide absorbents for spills at site. In the case of an accident curb the spill and remediate the site. Waste is to be treated as hazardous. Follow MSDS instructions when handling chemicals. Emergency Preparedness Plan is prepared and communicate it to the employees. Ensure familiarity with networks in the proximity of the site. In case of accidental disruption, immediately stop all works, notify proper authorities in the region and emergency remediation of damaged network in line with the requirements of the national legislation and Emergency Preparedness Plan. Provide firefighting equipment and training for employees.			
	Water and soil quality	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 should be transported to proper waste water treatment facilities. Only existing water spurces will be used. There will be no water extraction form the location. Water will be separated from the works. Prevent hazardous spillage coming from tanks (mandatory secondary containment system, e.g. double walled or bunded 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.			
	Chance findings	No works are allowed at the the heritage and archeological sites. In the case of chance findings, works will be stopped, responsible authorities notified in line with the national regulation and their instructions followed. Works will start again			

	Nature protection	only once relevant authorities have provided their clearance. There will be no felling. Removal of greenery is allowed only for the carpark works. In the case individual trees need to be removed, competent authorities (such as forestry or nature protection agencies) must approve.			
2. Installing a central heating system that works on pellets	- Waste (small construction waste from drilling of the internal walls)	- transport of construcion waste to the nearest legal landfill	Constructor	During construction	No expenditure
3. Reconstruction of wooden paths, wooden observation posts, wooden cottages and wooden boats	- Biodegradable waste (waste from wooden materials) - Nature protection	- Transport of waste from wooden materials to the licenced landfill Pouching, disturbance of animals, collection of herbs and forest food is strictly prohibited. Open fires are strictly forbidden. There will be no littering. Before works, the area must be checked for young, dens and nests. Minimize the working area and use only what is necessary. There will be no cleaning or washing of machinery and vehicles at the location. Workplan is reviewed and approved ab a nature	Constructor	During construction	Included in project budget .

		protection expert (biologist). Works are supervised by the nature protection expert. There will be no removal of greenery. There will be no anty-corrosive application at the location. Wood/timber will be used in its natural state and it will not be treated with wood protection, dye, coatings nor lacquers or other agents. No materials will be used that can jeoperdise water quality, aquatic and other wildlife. - Disturbance and hunt of animals in the area is prohibited. - No green surface is to be removed. No trees will be damaged or removed during works. Open fires are strictly prohibited. - In the case of replanting only native species typical for the area can be used.			

Operation Phase

Activity	**Expected Environmental Impact**	**Proposed Measure for Mitigation**	**Responsibility for Implementing Mitigation Measure**	**Period of Implementing Mitigation Measure**	**Cost associated with implementation of mitigation measure**
1. Activities and work of the employees or during operation phase	- mixed communal waste	- dumping into cans or waste containers, separate, transportation and landfilling/processing by licensed companies	Public utility "Ograzhden"	During operation	350 denars per month – this expenditure shall be paid by the Municipality of Bosilovo
2.Generating waste from the central heating system	ash	- dumping into cans or waste containers, separate, transportation and landfilling/processing by licensed companies	Public utility "Ograzhden"	During the heating of the object	350 denars per month – this expenditure shall be paid by the Municipality of Bosilovo
3. operation of pellet central heating system	Air quality	Regular maintenance of central heating system	Municipality of Bosilovo	Prior to start of heating season	
4.Waste from visitors at the locality Monospitovo Swamp	Communal waste	- dumping into cans or waste containers, separate, transportation and landfilling/processing by licensed companies	Public Utility"Ograzhden" Bosilovo	During visits and strolls by the visitors of the locality	500 denars per month – this expenditure shall be paid by the Municipality of Bosilovo

5.2 Monitoring activities

It is essential that the preparation of a monitoring program and appropriate monitoring of frequency, in order to demonstrate the overall performance of the project activities and short-term impacts caused by construction activities.

More specifically, as an integral and critical part of the Environmental Monitoring Plan and social aspects, the Environmental monitoring program should have the following objectives:

- Determining the real extent / size of impacts;
- To control the impacts that are created as a result of the construction process and the operational phase;
- To check environmental protection standards applicable to the project during construction;
- To check and monitor the implementation of environmental protection solutions during construction;
- To propose measures for reduction in case of unexpected impacts;To assess the effect of reduction measures in the construction and operational phase;

The project will implement an environmental monitoring plan that:

(I)monitors the work of the contractor during the implementation of the project in order to check the contractual compliance with anticipated reduction measures, and then (II) assess the actual environmental impacts of the project over the years after the completion of the various components of the project. The main components of the monitoring plan include:

-Ecological parameters to be monitored;

-Specific areas, locations and parameters to be monitored;

-Applicable standards and criteria;

-Duration and frequency

-Obligations of the institution and

-Costs.

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**
1. All works All needed permits, opinions and decisions have been obtained before the works commence. Environmental, nature protection and other relevant inspections and competent authorities have been notified of works before they start. Planning of the time for startup of the project activates (during the working days when number of tourists and local population on/near the project locations is low), - Access paths for local population to their homes must be ensured. - Ensure proper marking of the project locations with tapes and warning signs - Set up an Information Board on the	Yard of the Center for alternative tourism and creative development in vlg. Monospitovo	Work in allowed period of day (7-19h) Access paths for local population to their homes are ensured construction site is marked and secured Information Board is set on the project locations signs for reducing / limiting of the vehicle speeds installed	Prior and during construction	Supervisor, Municipalinspectorate (civil, communal, H&S environmental)	Included in subproject budget

project locations with general data about the project, and name of the Contractor and the Supervisor; - Installation of signs for reducing / limiting of the vehicle speeds near the project location of the parking lot; -Access of non-authorized personnel within the project locations is not allowed; - Set up a special traffic regime for the vehicles of the contractor during the period of construction (together with the municipal staff and police department) and instalation of signs to ensure safety, traffic flow and access to land and facilities; - Set up of vertical signalization and signs at the beginning of the rehabilitation site; -Installed boards and signs must no interfere with traffic safety and visibility. - Coarse aggregate in concrete applied and used in rehabilitation need to conform to durability and gradation requirements. - 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	Prior to acceptance of materials on construction site Yard of the Center for alternative tourism and creative development in vlg. Monospitovo	Access of non-authorized personnel within the project locations Is prohibited Traffic regime around the construction site and signs to ensure safety, traffic flow and access to land and facilities set vertical signalization and signs at the beginning of the rehabilitation site are set Installed boards and signs dont interfere with traffic safety and visibility Coarse aggregate conforms to durability and gradation requirements. Mineral resources are procured only from licensed companies with valid concessions for extraction/ exploitation.			

environmental management is in place. - Containers for each identified waste category are provided in sufficient quantities and positioned conveniently. - 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 waste will be reapplied to its original location or reused. - All construction waste will be collected and disposed properly by licensed collectors. - 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. - The construction waste should be promptly removed from the site and re-used if possible; - Construction site, transportation routes and materials handling sites should be water sprayed on dry and windy days	On and around construction site (Yard of the Center for alternative tourism and creative development in vlg. Monospitovo)	Containers for each identified waste category are set on site Waste is separated per types of waste. Wastes are collected by licensed collectors Records of waste disposal are regularly updated and kept as proof No waste and waste water are discarded in surrounding nature or water-bodies water spraying is used to prevent dust construction materials and vehicles are covered vehicle speed to the reconstruction location is			

- Construction materials should be stored in appropriate places covered to minimize dust - Vehicle loads likely to emit dust must be covered. - Restriction of the vehicle speed to the reconstruction location. - 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. - All loads of soil are covered when being taken off the site for disposal. - 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. - Using vibro-rollers with low noise emmisions - As it is a urban residential area (the site is within the settlement of Monospitovo) the level of noise should not exceed 55dB during the day and evening and 45dB during the night - The construction work will not be permitted during the nights, the operations on site shall be restricted		implemented roads are regularly swept and cleaned topsoil and stockpiles separate all transportation vehicles and machinery have been equipped with appropriate emission control equipment, regularly maintained and attested all vehicles and machinery use petrol from official sources (licensed gas stations) and on fuel determined by the machinery and vehicles producer vibro-rollers with low noise emmisions the level of noise should not exceed 55dB during the day and evening and 45dB during the night is not exceed the operations on site are restricted from 7.00h to19.00h operations the engine			

from 7.00h to19.00h (agreed in the permit). - 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. - Pumps and other mechanical equipment should be effectively maintained. - 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. - Hazardous substances (including liquid wastes) should be kept in a leak-proof container to prevent spillage and leaking. This container should possess secondary containment system such as bunds (e.g. bunded-container), double walls, or similar. Secondary containment system must be free of 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		covers of generators, air compressors and other powered mechanical equipment are closed, and equipment is placed as far away from residential areas as possible Pumps and other mechanical equipment should be effectively maintained Temporarily storage on site of all hazardous or toxic substances (including wastes) is in safe containers labeled with details of composition, properties and handling information Hazardous substances are kept in a leak-proof container Containers possess secondary containment system such as bunds, double walls, or similar (free of cracks, able to contain the spill, and be emptied quickly). Containers with hazardous substances are kept closed. They arent handled, opened, or stored in a manner			

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 facility's property line. - The wastes are never mixed and are transported by specially licensed carriers and disposed/processed only in a licensed facility.		that may cause them to leak The containers holding ignitable or reactive wastes are located at least 15 meters from the facility's property line The wastes are never mixed and are transported by specially licensed carriers and disposed/processed only in a licensed facility			
2. Biodegradable waste and waste from wooden materials	Locality Monospitovsko Blato	Is the waste taken away to the nearest landfill	During construction or twice a week	- supervisor, -municipal inspector -LRCP Environmental expert	Included in budget of the project
3. Prohibit collection of plants and wood from and around working areas. - Disturbance and hunt of animals in the area is prohibited. - No green surface is to be removed. No trees will be damaged or removed during works Workplan is reviewed and approved ab a nature protection expert (biologist). Works are supervised by the nature	The working areas in the locality - Monospitovo Swamp	collection of plants and wood from and around working areas as well as disturbance and hunt of animals in the area are prohibited No green surface is removed. No trees are damaged or removed during works	During construction period,	- supervisor, -municipal inspector -LRCP Environmental expert	Included in budget of the project

protection expert.					

Operation Phase					
1. Disposal of communal waste from employees and visitors	Center for alternative tourism and creative development in vlg. Monospitovo and the locality Monospitovo Swamp	waste is properlycollected and delivered to authorized company	In operation phase During visits and strolls by the visitors of the locality, During the heating of the object	Communal Inspector Public Utility"Ograzhden" Bosilovo	850 denars per month – this expenditure shall be paid by the Municipality of Bosilovo
2.Disposal of ash from central heating system	Center for alternative tourism and creative development	waste is properly collected in separate labeled can/container and delivered to authorized company	Daily and with agreed dinamics for delivery to authorized company	Communal Inspector Public Utility"Ograzhden" Bosilovo	850 denars per month – this expenditure shall be paid by the Municipality of Bosilovo

During the project activities, special attention shall be paid to small significances that have particular influence over the environment.

-The constructor is obliged to minimize influences such as waste, dust and noise.

-The supervising body shall supervise how the work of the constructor influences the environment.

-The local inspection bodies shall also supervise so that the constructor will remove all eventual irregularities.

Annex

Republic of Macedonia
Ministry of environment and physical planning

Archive N^0 :11-3306/2

Date: 13.07.2017

To: Municipality of Bosilovo
s.Bosilovo bb

2431 Bosilovo

Subject: Professional opinion

Connection:
Your archive N^0:03-1071/1 20.06.2017
Our archive N^0: 11-3306/1 22.06.2017

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Dear sirs,

With reference to your request, number 11-3306/1 on 22.06.2017, referring to need of professional opinion on the project proposal - Improvemenet of the conditions for development of alternative tourism at the locality – "Monospitovsko Blato", Department of Environment, part of Ministry of environment and physical planning, from aspect of its competencies in the field of environment protection, gives the following opinion:

The area, that is the subject of realization of the abovementioned project, represents a range that includes the site of "Monospitovsko blato", due to the exceptional diversity of aquatic and marsh plant species and communities, with a special emphasis on the rare plant species of the royal fern (Osmunda Regalis), by the council of Municipality of Strumica with Decision N^0 02-498/1 on 29.06.1987 , is declared as a Monument of nature.

At the same time, the site as a protected area of national interest is included in the sector Study on the protection of natural heritage(1999), prepared for the needs of the Spatial Plan of the Republic of Macedonia (Official Gazette of the Republic of Macedonia, $N^0$39/04), the National Strategy and the Action Plan for protection of biological diversity in the Republic of Macedonia(2004), in the Emerald network of Areas of Special Conservation Interest (ASCI- Areas of Special Conservation Interest) and in the Proposal for Representative protected areas network.

The project proposal in accordance with the submitted technical documentation envisages the building of a parking space, equipment of a museum and installation of a central heating system within the Center for alternative tourism and creative development of Monospitovo village, preparation of signposts and informative boards (signalization) as well as renewal of wooden paths, wooden cottages and wooden observation posts, within the locality "Monospitovsko blato".

The landscaping project, according to pre-survey estimate and the accompanying graphic attachments(sketches) of the site, envisage setting up information boards on 3 locations with the reconstruction of the existing wooden paths in length of 1000 m, the reconstruction of 2 observation posts and 7 wooden cottages, as well as the production of 5 wooden boats (shajkas) using natural local material that does not disturb the natural balance of the space and provides protection of the natural, ambient and aesthetic values of the site.

In accordance with the stated and the fact that the project will provide conditions for development of alternative and eco-tourism on the territory of the Republic of Macedonia, with a special importance on the territory of Municipality of Bosilovo, the Department of Environment, fully supports the initiative of creating the project - Improvemenet of the conditions for development of alternative tourism at the locality – "Monospitovsko Blato" and gives a positive opinion on its implementation.

MINISTER
Sadula Duraki
Personaly signed here

Made by: V. Chavdarova
Head of unit
Personaly signed here

Supervisor check by: V. Trpeski
Head of department
Personaly signed here

Approved by: Toni Martinoski
V.d. director od Department of environment
Personaly signed here

The round seal attached here reads as follows:
Ministry of Environment and Physical Planning
Skopje
Republic of Macedonia

Република Македонија
Министерство за животна средина
и просторно планирање

B. Ivanovski
20.07.17

Република Македонија
Министерство за
животна средина
и просторно
планирање

Бул."Гоце Делчев" бр.18,
1000 Скопје,
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Тел. (02) 3251 400
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Сајт: www.moepp.gov.mk

Архивски број: 11-3306/2

Дата: 13.07.2017

До: Општина Босилово
с. Босилово бб
2431 Босилово

Предмет: Стручно мислење

Врска: Ваш број: 03-1071/1 од 20.06.2017
Наш број: 11-3306/1 од 22.06.2017

Почитувани,

Во врска со Вашето барање, допис Бр.11-3306/1 од 22.06.2017 година за доставување на стручно мислење по Предлог на Проект за унапредување на условиоте за развој на алтернативниот туризам на локалитетот "Моноспитовско Блато" Управата за животна средина како орган во состав на Министерството за животна средина и просторно планирање, од аспект на своите надлежности во областа на заштита на природата, го дава следното мислење:

Просторот кој е предмет на реализација на горенаведениот проект претставува простор кој го зафака локалитетот "Моноспитовско Блато" кој заради исклучителниот диверзитет на акватични и блатни видови на растенија и заедници со посебен акцент на реткиот растителен вид на кралски папарат *(Osmunda Regalis)* од страна на Собранието на општина Струмица со Одлука Бр.02-498/1 од 29.06.1987 година е прогласен за Споменик на природата.

Истовремено локалитетот како простор за заштита од национален интерес е вклучен во секторската Студија за заштита на природното наследство (1999), изсотвена за потребите на Просторниот план на Република Македонија ("Сл. Весник на РМ", Бр. 39/04), Националната Стратегија и Акциониот План за заштита на биолошката разновидност во Република Македонија (2004), во Емералд Мрежата на подрачја од посебен интерес за зачувување

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(ASCI - Areas of Special Conservation Interes) и во Предлог-Репрезентативната мрежа на заштитени подрачја (2010).

Предметниот Предлог на проект согласно доставената техничка документација предвидува изработка на паркинг простор, опремување на музеј и изведба на инсталација за топловодно греење во рамките на Центарот за алтернативен туризам и креативен развој на с. Моноспитово, изработка на информативни табли (сигнализација) како и обновување на дрвените пешачки патеки, осматарчници и дрвени кукќчки во границите на локалитетот "Моноспитовско Блато".

Партереното уредување на локалитетот "Моноспитовско Блато" согласно Предмер - Пресметката и приложените графички прилози (скици) предвидува поставување на информативни табли на 3 локации со реконструкција на постоечките дрвени пешачки патеки во должина од 1000м, реконструкција на 2 осматарчници и 7 дрвени куќички како и изработака на 5 дрвени чунови (шајки) со употреба на природни и локални материјали што не ја нарушува природната равнотежа на просторот и обезбедува заштита на природните, амбиентални и естетски вредности на локалитетот.

Согласно изнесеното како и фактот дека предметниот проект ќе обезбеди услови за развој на алтернативниот и еко туризам на територијата на Република Македонија со посбен акцент на територијата на општина Босилово, Управата за животна средина во целост ја подржува иницијативата на општина Босилево за изработка на Проектот за унапредување на условиоте за развој на алтернативниот туризам на локалитетот "Моноспитовско Блато" и дава позитивно мислење за реализација на истиот.

Со почит,

МИНИСТЕР
Sadula Duraki

Изработил: В. Чавдарова
Раководител на Одделение

Контролирал: В. Трпески
Раководител на Сектор

Одобрил: Тони Мартиноски
в.д директор на Управа за животна средина