

## **Environmental and the Social Management Plan for the Sub-Project:**



### **Improvement of the conditions for development of active tourism at the locality - Vrteshka**

*Municipality of Karbinci, November 2018*

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## **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.

The investment will be made through a grant scheme for the regional tourism actors, such as municipalities, institutions, NGOs, and the private sector. At all times it will be in line with the Environmental and Social Management Framework (ESMF) prepared for the Local and Regional Competitiveness Project.

This Environmental and Social Management Plan (ESMP) has been prepared for activities carried out under the subproject “Improvement of the conditions for development of active tourism at the locality – Vrteshka“.

The ESMP presents the environmental due diligence document comprised of project description, technical details, scope, setting and location based on which it assesses the environmental and social impacts and the avoidance and mitigation measures addressing them. Implementation of mitigation measures addressing the identified environmental and social impacts defined in the ESMP is mandatory.

The implementation of this sub-project offers opportunities for affirmation of the sub-project on an international level. The appeal of the Vrteshka locality offers opportunities for tourism development. So far, tourists from all over Macedonia, but also from abroad, have visited (and stayed) at this 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-accommodation capacities (due to the probability that tourists will be more interested to visit this locality) as well as possibilities for self-employment of people from the local region.

## 1. Description of the project

The overall goal of the sub-project is to promote and improve the conditions for development of the active tourism on the Vrteshka locality (Figure 1).

Specific goals of the sub-project are:

- To improve the functionality of Mountain Lodge Vrteshka
- To attract tourists, visitors, highschool and faculty students that will visit and explore the locality Vrteshka. The wider surrounding of this locality has diverse flora and fauna
- The Vrteshka locality to be placed on the tourist map of the Republic of Macedonia
- To enable activities for exploration and protection of the biodiversity.

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

1. Development and construction of modern infrastructure for fast and safe access to tourist site, through reconstruction of a part of the access road to the Mountain Lodge Vrteshka. With foreseen project activities only 961,41 m of the overall length (2.261,46 m) of access road from regional road R-601 to v. Vrteshka, near church Sent Gjogji, Karbinci (the church is not part of the sub-project) will be reconstructed (compaction and pavement activities will be performed). The access road is reconstructed from the chainage 0 + 000.00-1 + 300.00, with maximum width of 4,75 m. The rest of the local road from chainage 1 + 300.00 to the chainage 2 + 261,41 is planned to be reconstructed in the second phase, within this sub-project. With this project only reconstruction activities will be performed of the existing road within its current width and length. There will be no widenings and extensions. Only placement of new pavement construction with application of pavement type BNHS (d= 7cm) and aggregate from crushed stone with grains 0-62 mm (d= 30 cm) will be performed;
2. Reconstruction and adaptation of the Mountain Lodge Vrteshka by addition of an attic for increasing of the accommodation capacity.
3. Construction of other supporting facilities for this type of tourism, such as:
  - Construction of a multifunctional artificial climbing rock
  - Construction of a children's playground with swings, a roundabout, seesaws, etc.
  - Additional elements, such as: benches, gazebos and others.
4. Placement of road signs and information boards for direction to the Vrteshka locality, and marking hiking trails that are heading to the tourist attractions. According to the data obtained from the DPS Lisec as active hiking trails for mapping, following routes are foreseen:
  - Archaeological site Bargala-Vodopadi Kozjak
  - Waterfalls Kamnik- Radanje
  - Kamnik-Kuchitsa-Vrteshka
  - Kozjachka River-Waterfall Parnalia- Mountain Lodge Vrteshka
  - Forest house -Kup Cave-Vrv Turtel
  - Vrteshka-Turtelska Cave-Kup Cave-Golema Peshtera- Vrv Turtel
  - Vrteshka-Vrv Lisec (Through the Lumiska River)
  - Vrteshka-Partizan hospital-Jumaya Radovish home.

The locations for placement of information boards and road signs (Table 1) will be determined by a working group composed of representatives of the mountaineering club and the Municipality of Karbinci.

**Table 1** Information boards and signs

Mark for traffic sign	Type of traffic sign	Num. of pieces
/	Information boards with QR code	4
601	Announcement board for cultural heritage or object	5
602	Announcement board for historical landmark or object	5
603	Announcement board for natural landmark	10
604	Announcement board for tourist landmark	10
605	Signal board for directing to cultural landmarks or objects	10
606	Signal board for directing to historical landmarks or objects	10
607	Signal board for directing to natural landmarks	10
Pillar	Pillars for placement of traffic signs	60



**Figure 1** Locality Vrteshka

According to the Spatial Plan, Certificate for Cadastral parcel no. 378 for Cadastral site Vrteshka, Municipality of Karbinci, reconstruction and adaptation of the roof of the existing Mountain Lodge Vrteshka will take place on the Cadastral parcel no. 378. Reconstruction and adaptation activities are referred to the existing object – (marked as 1 on Figure 1), with following levels: daylight basement + ground floor + first floor. The existing object is constructed with a massive system of load-bearing walls, constructed from stone. The connection with the floors is carried out with inside stairs up to the first floor. The Mountain Lodge Vrteshka is not a protected physical cultural heritage.

Access to object is provided through an unpaved road. Within the parcel in which the object is constructed, there is a natural water spring (which is not a subject of this sub-project nor it will be used for construction purposes). In the vicinity of the parcel is Church St. George. The church is not a part of the sub-project, it is not protected cultural heritage and no works or activities that would impact the facility will take place in its vicinity. Inside the parcel, there are two auxiliary facilities such as barbecue facility and timber warehouse. On the west side of parcel there is a rest area with wooden benches and tables.

The object is intended for Mountain Lodge, where sleeping rooms are constructed on all floors, except on the daylight basement where there are a kitchen and auxiliary room with one bedroom. No changes are planned for the part of the existing areas so that all floors will remain with the same surface, such as: daylight basement 50m<sup>2</sup>, ground floor 70,10m<sup>2</sup>, and first floor 69m<sup>2</sup>.

The access to attic, where the reconstruction of the roof and adaptation is planned, is provided through the existing vertical communication with the execution of stairs to overcome the height of the first floor. The attic is planned to have bedrooms and sanitary facilities with a total area of 83,60m<sup>2</sup>, three bedrooms with a total area of 63,3m<sup>2</sup>, a hall with a surface of 13m<sup>2</sup>, stairs covering a surface of 5,5m<sup>2</sup> and a toilet with a surface of 1,8m<sup>2</sup>.

With reconstruction and adaptation of the Mountain Lodge, the existing roof construction of four pillars will be dismantled and a roof construction with new steel structure with a roof insulation panel will be carried out on two pillars. Structural elements on the eaves are foreseen with wooden timber of 10/8cm. With this solution the existing constructive massive system of load-bearing walls with a thickness of 50 cm will be kept.

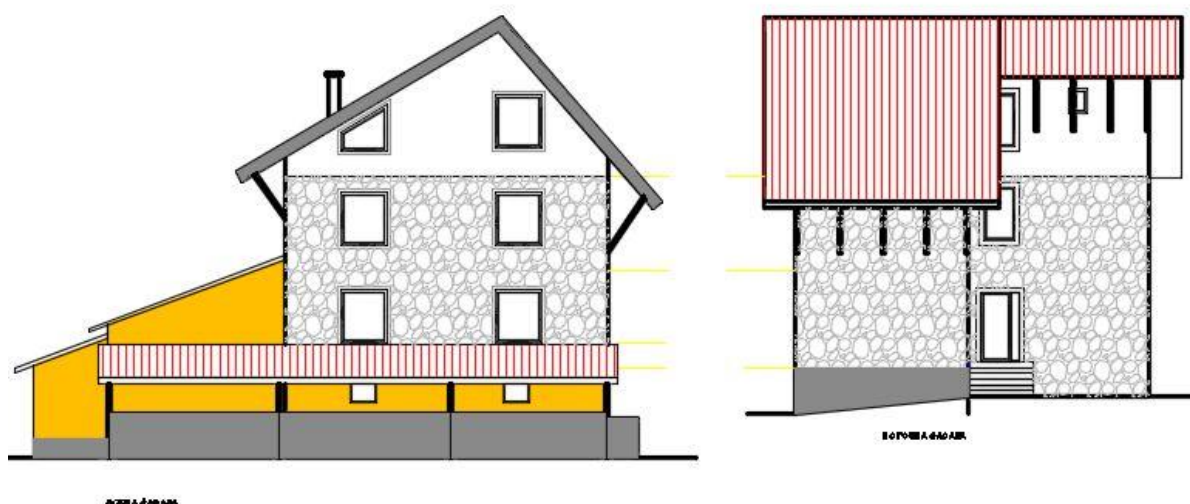
The masonry of the outer walls of attic is planned to be executed with a hollow ceramic block with facade processed with a plaster - imitation stone with a thickness of 30 cm. The interior partition should be made with walls made of plasterboard placed in a metal structure with a thickness of 12 cm. The interior processing of the walls should be done with extended mortar and painting will be performed with emulsion paint. In the sanitary toilet the floor will be treated with floor ceramic plates placed in cement mortar. Wall surfaces in the sanitary toilet will be made with wall ceramic tiles in cement mortar at a height from the floor to the ceiling. Existing inter-floor connections are made of wooden construction.

Newly designed mezzanine to the attic construction is planned to be made of lumber pyramid roof 2nd class with dimensions of 10/12cm, made with planks 2,5 / 10cm on which solid wood floor will be placed. The ceiling will be made with wooden paneling.

The dining room is made as an extension of the existing object. The newly designed roof covering will be installed on the existing roof construction from a roof insulation panels d=10cm with all the necessary moldings and angular panels according to the manufacturer's details. The newly designed reinforced concrete wall will be constructed with height up to an existing windows 1,70m. It is planned to be made with d=20cm of reinforced concrete with MB 30 in the required boarding. On the floor of the overhang, a concrete plate on armature web with thickness of armature of 20cm and 10cm should be installed. On the south side an overhang is designed, as an extension along the entire length of the existing object 16,70m in length, and 5.00m in width. The overhang will be made of steel construction, on which a roof cover of plasticized ribbed tin will be placed. The metal construction will be protected from different weather conditions with weatherproof paint.



**Figure 2** Mountain Lodge Vrteshka



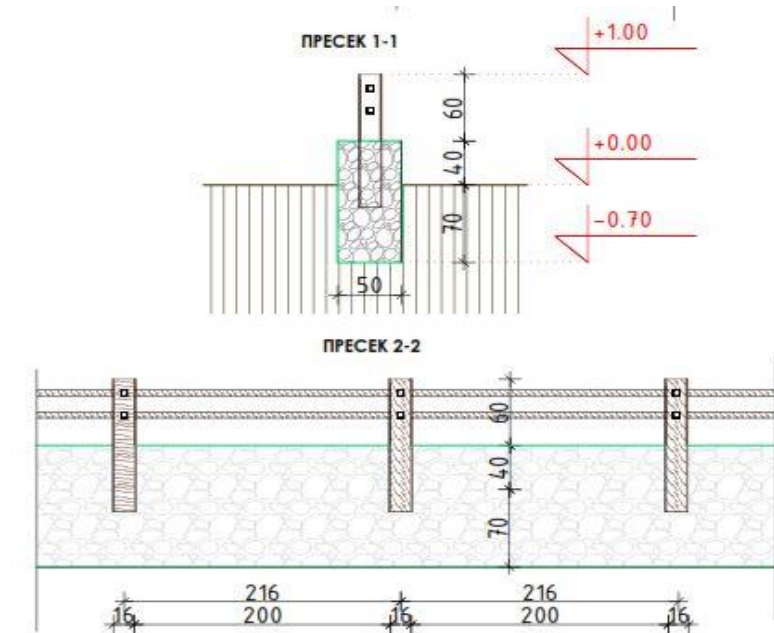
**Figure 3** Mountain Lodge Vrteshka (new design solution)

On the location are planned more activities with fun and educational character, so the site will become attractive tourist location.

Location will be fenced (Figure 4) with wooden pillars with a height of 40 cm, which will be placed on a 40cm banister (wall) made of natural stone. Entrance is planned to be on the north-east side, with gate covered with a roof made of roofing tiles.



All wastewaters will be collected in the existing cesspool. No works are planned related to sewerage.



**Figure 4** Detail of the fence

According to the location design, parcel arrangement will be performed and installation and construction of following urban equipment and structures will take place:

- Artificial climbing rock
- 2 Info board with dimensions - 170/220cm
- 4 benches, 4 waste bins
- Children's playground
- Three gazebos
- Lighting candelabras
- Signal board for directing to the location where fun activities will take place
- Pedestrian paths with surface of 501 m<sup>2</sup> and length of around 78m

Parcel arrangement will be on surface of 1.650 m<sup>2</sup> with compacting activities on surface of 100 m<sup>2</sup>.

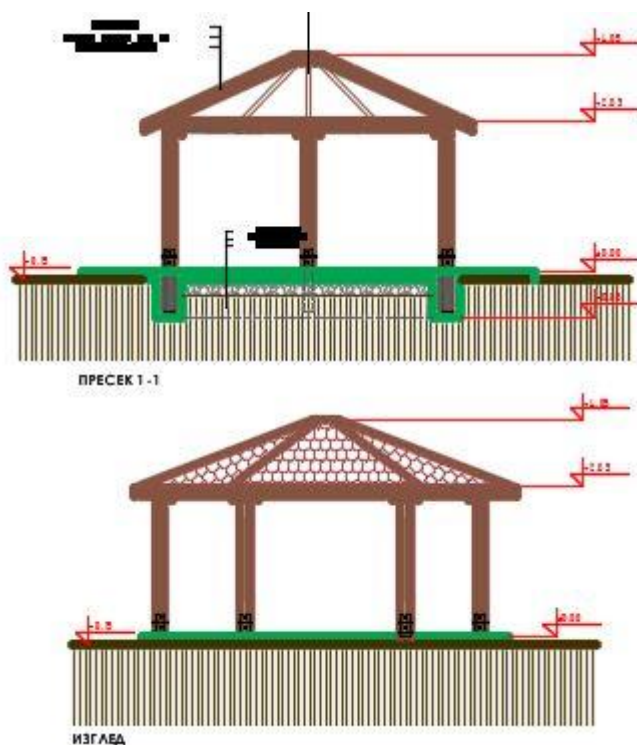
The elements are distributed across the entire area of parcel, and among them they are connected with pedestrian paths, as well as extensions in the form of small squares. From the entrance on the northeast side, on the right there is a space for placement of an information board for the visitors. On the southwest on the left side an artificial climbing rock will be placed, right next to an info house, as well as a gazebo for visitors. In the middle part of the location a children's playground with a swing, a seesaw, a toboggan, a carousel, and a place with sand will be constructed.

The area of the location for fun activities is situated on three different levels/platos, which follow the existing terrain, and the levelling is solved with stone walls for stabilization i.e. stones in cement mortar, as well as pedestrian stairs that fit in the entire space. The existing vegetation will be kept as much as possible, except on some locations where it is

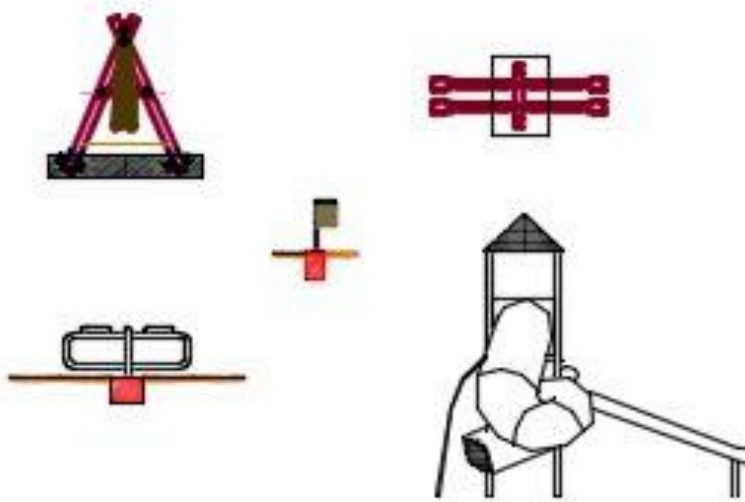


necessary to be removed, due to the construction of objects (artificial rock, lightning rod, gazebos). Only shrubs and low-stemmed plants will be removed on those locations.

Signal roads on several locations along the road for better accessibility to the site will be placed.



**Figure 5** Gazebo

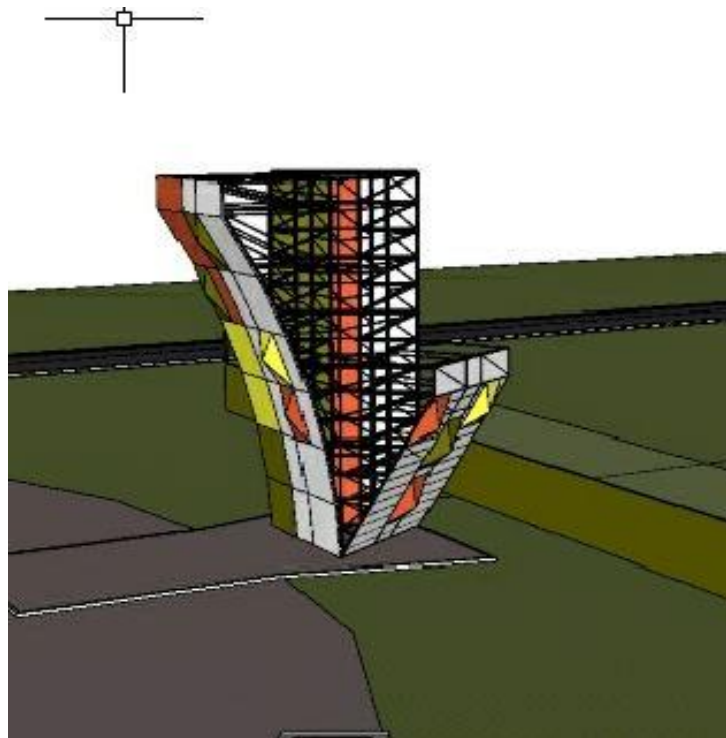


**Figure 6** Urban equipment

The artificial rock will be oriented from northwest to southeast due to exposure to wind and rain. With the proposed orientation of the rock it will be possible to climb on the same during wind blow and moderate intensity rainfall-without wind. The artificial rock is intended to be prefabricated with a steel structure and straps, anticorrosively protected by a method of galvanizing. The artificial rock will be placed on the AB foundation MB30 with a percentage of reinforcement according to the performed static calculation. The rock is intended to be made of panels with factory-fitted openings with steel threaded elements formed in a steel strip with thickness  $d=5\text{mm}$ . The shape of the surface, ie the relief is formed with the plates that are on the bearing construction. The choice of color, as well as the elements for climbing and catching, is enormous and it is combined to provide more weight for climbing.

The structural elements of the artificial rock are elaborated in detail in the constructive part of the project (Design for parcel arrangement). The equipment is intended for trained climbers as well as other users under the supervision of trained experts in the field of mountaineering with the necessary experience. The equipment will be constructed according to the existing prescribed standard of the Climbing federation EN 12572, artificial structures for climbing. The equipment should have all the necessary elements that will provide safety to the users and meet all safety standards for such types of activities. Artificial climbing walls can be used for weight climbing, with rope attached to the top and with bouldering.

The climbing routes to the top are at a surface at a distance between the surfaces of five feet (1 feet = 0,3048 m) (up to 1,50 m) from the base of the wall. The number of possible trails on the surface of the climbing wall is determined by the width of the the wall and it goes up to 5 m.



**Figure 7** Artificial rock

The entrance gate will be located on the northeast side next to the local road.

Wooden fence will be made with crossed wooden logs, semi-finished and protected against pests and also from weather fluctuations. The total length of the fence will be 365 m.

The surface that will be formed with the parcel arrangement is 1.650 m<sup>2</sup>, from which 672 m<sup>2</sup> will be arranged with stone. Concrete works are foreseen only for foundation for fencing wall and for stairs.

It is planned to preserve the existing landscape, only small shrubs and low stemmed plants will be removed from the location.

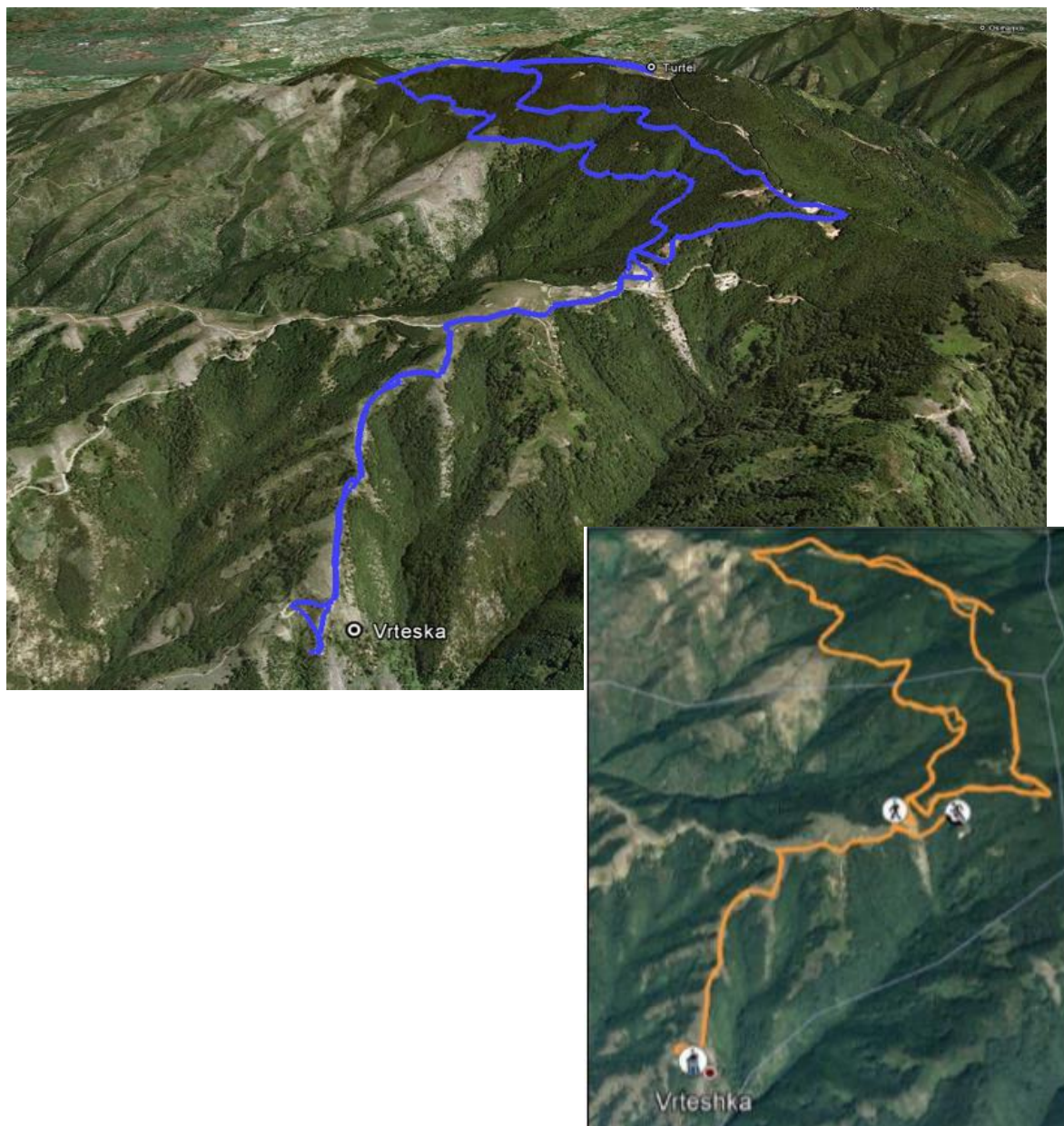


**Figure 8** Location where parcel arrangement is foreseen

There is an existing access road to the site that is functional and quite sufficient for the workers to access the work site. There will be no installation of a camp for the employees.

It is also planned on-line application - portal and mobile application to be created. The basis of the application will be digital maps where the tourist paths will be marked. Each map will be accompanied by additional instructions, visualization of the paths with attached photos and videos, marked key points: markers for tracking the route and navigation, sights, tourist sites and attractions. The application will also have a calendar of events, uploading informations about visitors' experiences, a panel with contact information for local guides. The mobile application also allows navigation of the proposed paths. It will consist of three parts: a web-based online application (Macedonian and English), a database and a mobile application. The new signs and signal boards will be placed with appropriate bar code tags or QR codes to link with the application.





**Figure 9** Mapping of the routes



**Figure 10** Signal board

Realization of the subproject activities will further increase the tendency of the site towards the development of rural tourism at locality Vrteshka

Expected results from this subproject are:

- a) Equipped, functional and modern site for active tourism and creative development
- b) Reconstruction of a modern and functional Mountant Lodge
- c) Placement of signs, signal boards and other signalization
- d) Construction of a multifunctional artificial rock
- e) Construction of a playground for children with accompanying structures
- f) Reconstruction of access road to the site (second phase)
- g) Creation of on-line application - portal and mobile application

The realization of the project will have a positive impact on the destination (Karbinci and its surroundings) and will provide excellent opportunities for increasing the attractiveness of the natural beauty of the destination. The tourist map will be enriched with another site - offering diversity in the natural beauties of the destination

## **2. Legal framework**

### **National Environmental Impact Assessment procedure for the project development**

The Environmental Impact Assessment procedure has been prescribed into the Law on Environment (“Official 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 - 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 „Elaborate for environmental protection - Environmental Impact Assessment Report“ (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**

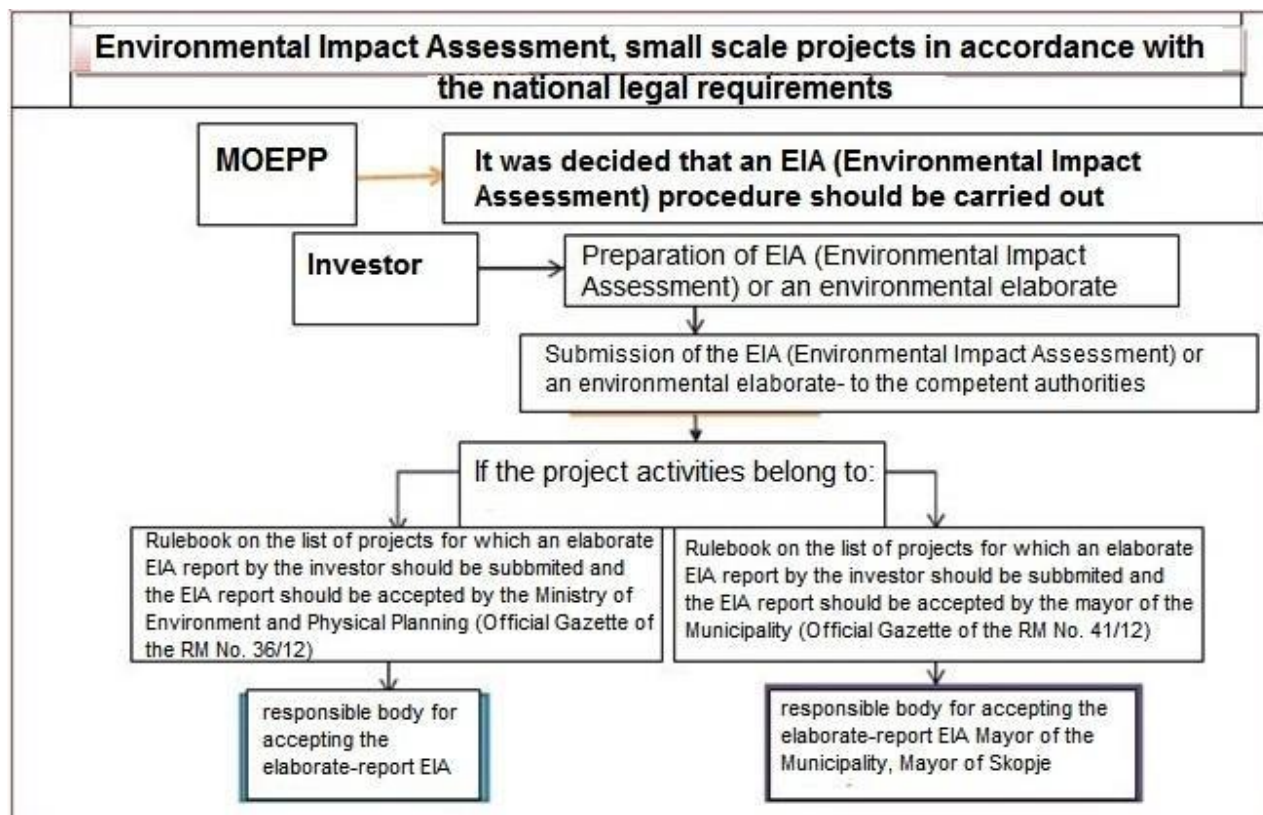
During the national EIA Procedure within the screening phase, if the decision has been made by the Ministry of environment and physical planning that there is no need for EIA procedure to be carried out, the investor should start with procedure for development of Elaborate for environmental protection. This procedure is obligigatory for small scale projects causing short-term, minor negative environmental impacts 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 Decrees that refer to the projects for which the - Elaborate should be prepared:

A) Decree on the list of projects for which the Elaborate for environmental protection should be prepared by the investor and the Elaborate need to be adopted by the Ministry of Environment and Physical Planning (Official Gazette of RM" No. 36/12);

B) Decree on the list of projects for which the Elaborate for environmental protection should be prepared by the investor and the Elaborate need to be adopted by the Mayor of the municipality or Mayor of City of Skopje („Official Gazette of RM" No. 32/12).The content of Elaborate for environmental protection - EIA report 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 11 the simplified scheme of the EIA Report-Elaborate procedure is presented as well as the competent authority for adoption of EIA Report/Elaborate.



**Figure 11** EIA (Environmental Impact Assessment) procedure for small scale projects (Environmental Report)

According to prescribed requirements from national legislation for the realization of the activities proposed within the subproject „Improvement of the conditions for development of active tourism at the locality Vrteshka“ only Elaborate for environmental protection for access road is necessary. Elaborate for environmental protection for access road from regional road R-601 to v. Vrteshka, church Sent Gjogji, municipality of Karbinci is prepared and Decision for its approval issued by municipality of Karbinci is attached in the Annex.

### Public consultations about the Environmental and Social Management Plan

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 Mitigation and Monitoring Plan and to inform the investor and the LRCP Project Office/Municipality of Karbinci.

The municipality will report on the state of the environment and the application of the mitigation and monitoring measures in the regular progress reports of the subproject and in the separate ESMP Implementation Report every three months (unless otherwise specified by the environmental expert, approved by the Environmental Specialist from WB) to the environmental expert.

According to the LRCP Environmental and Social Management Framework (ESMF), this ESMP must pass a public consultation before the sub-grantee is finally approved. Once the draft ESMP version is approved by the Project Implementation Unit (PIU), the environmental expert and the WB Environment Specialist, it will be published on the website of the LRCP PIU and/or Cabinet of the Deputy Prime Minister for Economic Affairs, the Agency for promotion and support of tourism and the website of the affected municipality (Municipality of Karbinci), where it will remain available to the public for at least 14 days. A printed copy will be available in the LRCP PIU / Cabinet of the Deputy Prime Minister of the Government of the Republic of Macedonia for Economic Affairs (CDPMEA) and the Municipality of Karbinci. The call for comment and participation in the public consultation meeting (by place and time) will go together with the ESMP. The public consultation meeting will be held in the affected municipality at the end of the consultation period. Proactively, the Applicant (Municipality of Karbinci) will inform and invite the major stakeholders in the project, including local NGOs, affected communities and municipalities directly and in an appropriate manner. The submitted comments will be included in the Report from Public Hearing, which will be part of the final version of the ESMP. In this manner, all comments from the public will be available to the applicants and they will take all relevant comments and cover the responses and notes in the final ESMP.

The ESMP must pass a public consultation in English, Macedonian and Albanian. The implementation of the Environmental and Social Management Plan will enable the timely undertaking of the proposed measures and contribute to the realization of the project activities without significant environmental impacts.

### **3. Basic Data/ Description of the municipality**

#### **3.1 Institutional capacity and arrangements**

The activities related to the implementation of the subproject „Improvement of the conditions for development of active tourism at the locality Vrteshka“ will be carried out on the territory of the Municipality of Karbinci by the employees in the Municipality of Karbinci.

The municipality of Karbinci is a unit of local self-government that carries out its work in accordance with the Law on Self-Government. The municipality is a service center for the citizens in the field of municipal problems, construction, tax obligations, education, environmental protection, culture, sports, etc.

With its administration, as well as with its public enterprise „Plachkovica“, the municipality is trying to satisfy the various needs of the local population. The main tasks of this public enterprise are organization of water supply in settlements, maintenance of communal hygiene, as well as maintenance of open atmospheric sewage.

The Municipality of Karbinci has the capacity to manage the environment on its territory through a specially organized department for municipal services, as well as through an authorized environmental inspector. The Municipality of Karbinci is a self-governing unit based in the settlement of Karbinci.

The municipal bodies are the Mayor, who represents and advocates the municipality, and the Municipal Council, which consists of 9 advisers as a body for representing residents in the municipality. In order to carry out activities that are in the competence of municipal bodies and are in accordance with the Systematization Act, the municipal administration consists of 4 departments:

- Department for legal, general and public activities
- Budget, Finance and Accounting Department
- Department for communal affairs and local economic development, consisting of an authorized environmental inspector who performs the duties related to the environment, communal inspector and communal steward; and
- Inspection Department-Inspectorate (education, taxes, construction, traffic).

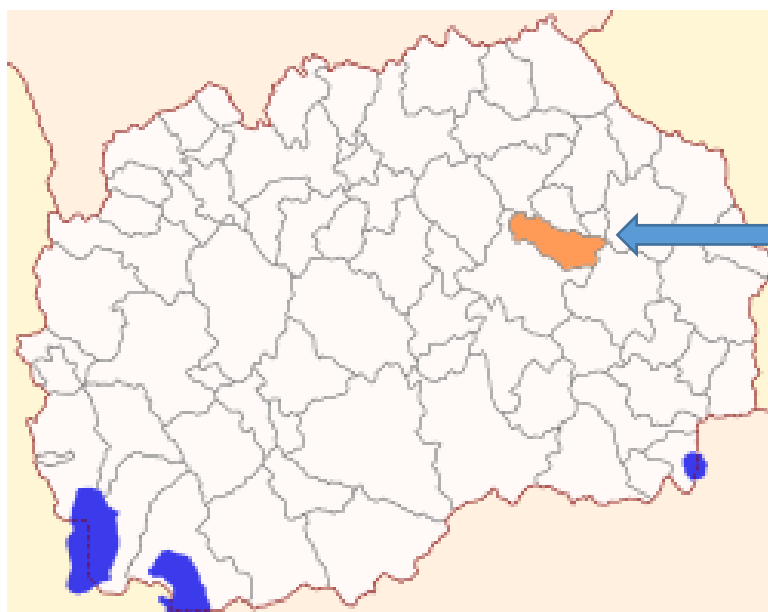
The territory of the Municipality of Karbinci for environmental issues, at the national level, is covered by a state environmental inspector who performs his duty in accordance with the national legislation. The municipal administration has a total of 12 employees and therefore the establishment of sectors was not performed in an organizational manner.

In accordance with the national legislation of the Republic of Macedonia for realization of the project, the municipality of Karbinci acquired a Decision for approval of Elaborate for environmental protection for the access road to the locality Vrteshka.

Regarding the nature of the foreseen project activities, following permits in accordance with the Law on construction („Official Gazzette of R. Macedonia“ num. 130/09 and its amendments) should be obtained: Construction permit for reconstruction of local road, for parcel arrangement and for reconstruction of the Mountain Lodge Vrteshka (addition of an attic) and approval for installation of the urban equipment. All infrastructure activities will be carried out in accordance with the project and technical requirements stated in prepared design documentation, which the Contractor must monitor and implement.

### **3.2 Geographical features, relief and geology**

The Municipality of Karbinci is part of a wider regional entity that has been identified as a region of East Macedonia for several decades from natural, economic, social and infrastructural aspect. The Municipality occupies a wide area in the middle catchment area on the river Bregalnica, stretching from the northwestern slope of the Plachkovica Mountain, across the wide valley of the river Bregalnica, to the north-west of the hilly morphological terrain of Ovchepole area. Karbinci is 13 km away from the town Shtip. It is located at the slope of Mountain Plachkovica and is rich in cereals and garden crops. It borders with the municipalities of Radovich, Shtip, Probishtip, Cheshinovo-Obleshevo and Zrnovci.



**Figure 12** Location of Municipality of Karbinci

The territory of the municipality of Karbinci covers an area of 259 km<sup>2</sup>, and belongs to medium by size municipalities in the Republic of Macedonia.

#### **Geology**

The municipality of Karbinci belongs to the Vardar zone. Within this zone, the following formations have been developed: Precambrian metamorphic rocks, Paleozoic metamorphic and magmatic rock, Mesozoic sediments and magmatites, tertiary sediments, quaternary deposits and volcanic rocks. The Precambrian metamorphic rocks are the oldest rocks in the Serbian-

Macedonian masses as well as in the Vardar zone. The Precambrian rocks on the Vardar zone are represented with high-metamorphic and magmatic rocks.

The Palaeozoic metamorphic rocks are divided on the basis of palinological analysis of: rief-Cambrian, early Palaeozoic and late Palaeozoic age. The rief-Cambrian rocks are quite prevalent on the mountain Plachkovica. It is transgressive through the mixture. They are presented with two parts: bottom, represented by albitized quartz-muscovite chlorite slates and upper, which is represented by epidot-quartz-seric-chlorite slates. In Ordovician sediments of the western branches of the Mountain Plachkovica and in the Vardar zone, several horizons are distinguished: horticultural-welding-seric slates, marble and graphite slates and phyllites. These rocks are encountered in a tectonic tunnel between the rief-cambrian and the pre-cambrian metamorphic rocks. Early age Paleozoic rocks are also divided according to palinological analysis, and are represented with: quartz-graphite slates in which quartzites, quartz sands and seric-chlorite slates are phase-shifted. Through these slates, rief-cambrian rocks are scaly dragged.

### 3.3 Hydrological features

River Bregalnica is the second longest river in the Republic of Macedonia. It springs into the forest part of the Malesevo Mountains, near Pehchevo and passes through or along the cities Pehchevo, Berovo, Delchevo, Makedonska Kamenica, Vinica, Kocani and Shtip, and then flows into the Vardar River before proceeding to the Aegean Sea. The total length of the river Bregalnica is 225 km, and the surface of the watershed (Figure 13) is about 742,5 km<sup>2</sup>. The river Bregalnica has 6 tributaries from the left side (Ratevska, Osojnica, Zrnovska, Kozjačka, Otinja and Lakavica) and 6 tributaries on the right side (Zelevica, Kamenicka Reka, Orizarska Reka, Kochanska Reka, Zletovica and Svetiikolska Reka).

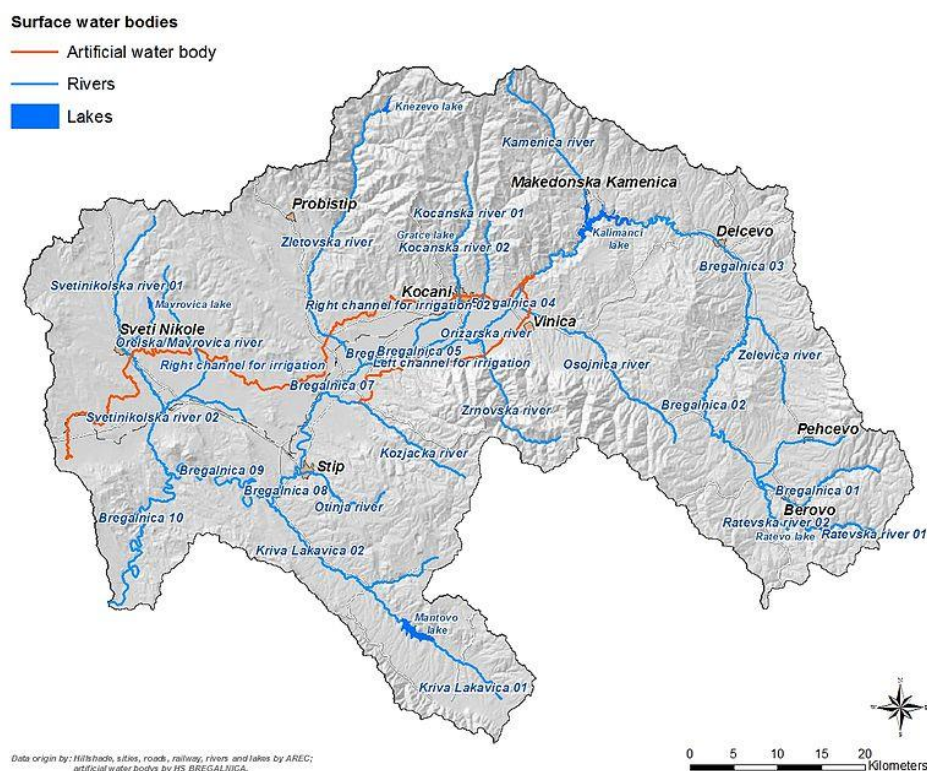


Figure 13 Watershed of river Bregalnica

The realization of the project activities will not cause negative impacts on the quality and quantity of the waters on the territory of the Municipality of Karbinici.

### **3.4 Climate**

Climate at the territory of the municipality of Karbinci is moderate continental, which is characterized with long and warm summers and short and mild winters. The annual temperature amplitude is quite large and equals 25.4 °C. The most frequent are the winds from the southwest and from the west. The air humidity depends on its air temperature, which is an important climatic element for agriculture. The average relative air humidity equals 70%. The lowest in August is - 56%, and the highest in December - 83%. The number of foggy days is insignificant and the cloudiness is not large. The average annual cloudiness is 5.0.

### **3.5 Natural resources**

On the territory of the municipality of Karbinci, as characteristic natural resources are: river Bregalnica and the mountain Plačkovica (Figure 14).

Plačkovica is a mountain located the eastern part of Republic of Macedonia, it extends between the cities of Radoviš, and Vinica.

The highest peak is Lisec at 1,754 m, the length of main valley slopes of the peak Lisec is 34 km. The valley of Zrnovska river splits the mountain in two, eastern and western parts. The peak of the western part is Turtel at 1,689 m. Lisec is a popular climbing route for the local climbers, being one of the harder peaks to scale in this part of Macedonia. It is not unusual to have snow on the peak during the month of June. The peak is served by two mountain lodges: Vrteshka from Štip's side and, Dzumaja from Radoviš's side. Geological components of Plačkovica are mainly granite and marble. With the valley of “Zrnovska” river, the mountain Plachkovica is divided in two parts: east and west. The western part is lower with the highest peak “Turtel” 1.689 m, while the eastern part of Plachkovica is higher and on it are the peaks “Lisec” (1754 m), “Čupino Brdo” (1725 m), “Bel Kamen” (1707 m), “Kara Tepe” (1625 m) and others. The mountain is divided with deep river valleys. The rivers are more numerous and richer with water on the north side and have deep valleys and a large longitudinal fall. Thus, on “Zrnovska” river there are many waterfalls. The western and southwestern slopes are bare with developed erosion, while the other parts are under the forest. On the mountain Plachkovica there are three beautiful canyons: “Kamnik”, “Kozjak” and “Zrnovka”, which are abundant with natural beauties such as rivers, waterfalls, slope, high rocks. Also very interesting are the caves on mountain Plachkovica, of which five are examined and accessible to visitors. The largest of them is the Great Cave, with a length of 600 meters.





**Figure 14** Mountain Plačkovica

Previous researches on the territory of the wider area of municipality of Karbinci identified numerous deposits and potential areas for further research and studies of metal, non-metal raw materials and energy resources.

### **3.6. Population**

In accordance with the Law on Territorial Division of the Republic of Macedonia („Official Gazette of the Republic of Macedonia“ No. 49/96) the Municipality of Karbinci has been established, with a total of 29 settlements: Argulica, Batanje, Vrteshka, Golem Gaber, Gorni Balvan, Gorno Trogerci, Dolni Balvan , Dolno Trogerci, Ebeplija, Yunuzlija, Kalauzlija, Karbinci, Kepekcheliya, Kozjak, Krupishte, Kurfaliya, Kuchilat, Kuchica, Mal Gaber, Michak, Muratliya, Nov Karaorman, Odjaliya, Pripachani, Prnaliya, Radanje, Ruljak, Tarinci and Crvulevo.



Figure 15 Map of settlements in the Municipality of Karbinци

According to the statistics from 2002, the Municipality of Karbinци has 4012 inhabitants - inhabited in 29 settlements and 1212 households. The average number of members in one household is 3,31.

Table 1 Population in the Municipality of Karbinци – Census of Population 2002

No.	Settelments	Population	Number of households
1.	Argulica	315	119
2.	Batanje	2	1
3.	Vrteshka	6	3
4.	Golem Gaber	32	7
5.	Gorni Balvan	57	26
6.	Gorno Trogerci		1
7.	Dolni Balvan	358	115
8.	Dolno Trogerci	4	2
9.	Ebeplija	11	2
10.	Junuzlija	35	7
11.	Kalauzlija	61	17
12.	Karbinци	673	192

13.	Kepekcheklija	9	2
14.	Kozjak	51	46
15.	Krupishte	336	123
16.	Kurfalija	43	9
17.	Kuchilat	/	/
18.	Kuchica	199	24
19.	Mal Gaber	/	/
20.	Michak	/	/
21.	Muratlija	0	/
22.	Nov Karaorman	67	17
23.	Odjalija	109	27
24.	Pripechani	1	1
25.	Prnalija	197	40
26.	Radanje	471	162
27.	Ruljak	2	1
28.	Tarinci	905	245
29.	Crvulevo	51	23
	Total:	4012	1212

Source: State Statistical Office of the Republic of Macedonia

### 3.7 Biodiversity

On the territory where the project activities will take place, no nature protected areas and rare and endangered species are present, only ruderal vegetation, shrubs and low stemmed plants are found.

On the wider area on the locality Vrteshka there is Querco-Carpinetum orientalis plant association.

(Querco-Carpinetum orientalis): These forests belong to the Querco-Carpinetum orientalis macedonicum Rud. 39 apud Ht. 1946. This thermophilic and xerophilic plant association develops under the regional climatic influence of the soil. The main species in these forests are: downy oak (*Quercus pubescens*) and oriental hornbeam (*Carpinus orientalis*). Other common plant species to this associations are: *Fraxinus ornus*, *Colutea arborescens*, *Coronilla emeroides*, *Acer monspessulanum*, *Rhamnus rhodopaea*, and grass species *Cyclamen neapolitanum* and *Carex halleriana*. This community is widespread in the Adriatic and Aegean sub-Mediterranean region. It occurs on shallow calcareous soils (limestone dolomite mulberry, rindzins), on shallow rocky silicate soils formed on filites and mikastics, as well as on soils formed on lake sediments.

It develops in almost all directions (east, southeast, south, southwest and western) to 600 m above sea level, but in some localities, in conditions of explicitly shallow and rocky dry soils with hot pedoclimate, they reach up to 1000 m above sea level. In Macedonia, this association is mainly widespread in the central and eastern parts.

Flora - in addition to the listed species, other common species belong in this plants association, such as: *Juniperus oxycedrus*, *Rubus sanguineus*, *Pyrus amygdaliformis*, *Cornus mas*, *Colutea arborescens*, *Coronilla emeroides*, *Prunus spinosa*, *Acer monspessulanum*, *A. tataricum*, *Crataegus monogyna*, *Ulmus campestris*, *Rhamnus rhodopaea*, *Asparagus acutifolius*, *Ruscus aculeatus*, *Hedera helix*. Grass species are: *Cyclamen neapolitanum*, *Lathyrus venetus*, *Anemone apennina*, *Lithospermum purpureoviolaceum*, *Lamium purpureum*, *Cardamine graeca*, *Carex halleriana*.

Fungi - fungi are represented by typical lignic species found on deciduous trees, such as: *Daedalea quercina*, *Dichomitus campestris*, *Exidia truncata*, *Hapalopilus nidulans*, *Peniophora quercina*, *Radulomyces molaris*, *Stereum hirsutum*, *Vuilleminia comedens* and others (on *Quercus pubescens*) and *Hyphodontia crustosa*, *Phellinus punctatus*, *Steccherinum ochraceum* and others (on *Carpinus orientalis*). Among the teric fungi, the following thermophilic representatives are important: *Amanitacaesarea*, *Leccinum griseum*, *B. aereus*, *Boletus aestivalis*, *Boletus fechtneri* and others.

Fauna: fauna representatives are divided into groups: Mammals - represented by the wild cat (*Felis silvestris*), the wild boar (*Sus scrofa*), the rodents (*Apodemus agrarius*, *A. flavicollis*, *A. sylvaticus*, *Mus macedonicus*), hedgehog (*Erinaceus concolor*), squirrel (*Sciurus vulgaris*), mole (*Talpa europea*), European hare (*Lepus europeus*), fox (*Vulpes vulpes*).

Birds - frequent inhabitants of oak forests are: blackbird (*Turdus merula*), Eurasian jay (*Garrulus glandarius*), *Fringilla coelebs*, *Parus major*, *Erithacus rubecula*. Other species are: *Parus lugubris*, *Streptopelia decaocto*, *S. turtur*, *Otus scops*, *Phoenicurus phoenicurus*, *Oriolus oriolus*, *Buteo buteo*, *Picus canus*, *Picus viridis*, *Dendrocopos syriacus*, *Troglodytes troglodytes*, *Turdus philomelos*, *Turdus viscivorus*, *Aegithalos caudatus*, *Carduelis carduelis*, *C. chloris* and *Coccothraustes coccothraustes*.

Reptilia – characteristic species are: lizards - *Lacerta erhardii riveti*, *Lacerta viridis*, *Lacerta trilineata*, snakes - *Elaphe longissima* and *Coluber najadum* and others.

Amphibia - characteristic species are: *Salamandra salamandra* and frogs: *Bufo bufo*, *Bufo viridis*, *Hyla arborea*.

### 3.8 Urbanistic and spatial planning

The current urbanistic documentation for Municipality of Karbinci does not satisfy the standards because it is quite outdated. Therefore, it is necessary for it to be replaced in order to improve the development of the planning of the Municipality and maximally utilization of its spatial possibilities.

At this moment, the Municipality has the following urbanistic documentation:

- Urbanistic Plan for Village (UPV) for v.Tarinci
- UPV for v. Karbinci
- UPVMN for the commercial complex KO Tarinci
- LUPD solar panels KO Krupishte
- LUPD antenna column Turtel, KO Vrteshka
- LUPD base station for mobile telephony of VIP operator STP 6094 Radanje
- LUPD for object G2 – light and non-pollutant industry KO Tarinci

The conditions for construction, i.e. the building permits are issued on the basis of the above-mentioned urbanistic documentation and in accordance with the Law on Construction. There is vast undeveloped construction area, situated in the construction areas of the settlements, but they are not in possession of the Municipality. This situation significantly creates possibilities for increasing of local economic development, through sale of these areas to potential domestic and foreign investors.

## **4. Environmental and social Impacts**

Realization of the planned activities of the subproject “Improvement of the conditions for development of active tourism at the locality Vrteshka”, will cause certain environmental and social impacts. The Environmental and Social Management Plan aims to assess the potential environmental and social impacts from the foreseen project activities.

The environmental impacts of this type of project activities are categorized into two main types of activities:

- Construction and Reconstruction phase (reconstruction of local road, reconstruction of mountain lodge - addition of an attic, installation of urban equipment, activities for parcel arrangement, etc.)
- Operational phase (functioning of mountain lodge and all foreseen structures with this sub-project)

### **4.1 Emissions in to the air**

The location of the sub-project is on a relatively peaceful place, without intensive traffic that would dramatically affect the environment and cause air pollution. With the construction, use and maintenance of the planned infrastructure, no significant changes in air quality are expected, as construction activities will be short term and limited to a reconstruction of access road, reconstruction of mountain lodge- addition of an attic and parcel arrangement with construction of a multifunctional artificial climbing rock and other supporting facilities.

#### **Construction and Reconstruction phase**

During this phase following impacts on air quality can be identified:

- Fugitive dust emission from reconstruction activities on local road, terrain clearance (removal of vegetation on site) from activities for dismantling the roof
- Emission of exhaust gases from construction machinery.
- Fugitive emission of volatile organic compounds from the use of bituminous emulsion and asphalt mixture and from paints and varnishes from activities for reconstruction and renovation of the existing lodge- addition of an attic

The dust generated by mechanical interventions of construction mechanization, from activities of reconstruction of the mountain lodge, from parcel arrangement, terrain clearance and the combustion of fuel from construction mechanization during such activities, affects the surrounding environment depending on the size of the particles (aerodynamic diameter) and conditions during activities, primarily because of the wind speed (which affects on their distribution - transmission).

Emissions of exhaust gases in the air will be generated by construction mechanisation



The most common pollutants produced by the exhaust gases are SO<sub>2</sub>, NO<sub>x</sub>, CO, PM<sub>10</sub>, unburned carbohydrates, sulfur, lead, benzene and other aromatic hydrocarbons that contribute to the secondary production of ozone, and they are all present as a direct or indirect threat to human health and the environment.

The type and quantity of exhaust gases will depend primarily on the type of fuel, the condition of the vehicles, the frequency of movement and the duration of the construction activities. However, the quality of fuel in Macedonia follows European standards and is controlled by accredited laboratories. So, we can conclude that emissions from mobile sources engaged within this sub-project do not pose a major threat to air quality.

The fugitive emission of volatile organic components from the use of bitumenous emulsion, asphalt mixture, paints and varnishes will have less influence, because these compounds are easily evaporative and retain shortly in the air. Contractor should use eco-friendly paints and varnishes to minimize environmental impacts.

During this phase, most sensitive receptors that will be exposed to emissions in the air will be the engaged employees. The impact on air quality can be assessed as short-term, local, indirect, reversible, with a low intensity of environmental impact.

### **Operational phase**

In operational phase effect on the air quality will occur during traffic on road section. Emissions from use of firewood for heating in Mountain Lodge are also expected. This will be a long-term impact, with a minor significance and intensity but with repetitive occurrence, as well as with a local character (equal or less influence compared to the current state - the use of firewood).

## **4.2 Emissions in the water**

### **Construction and Reconstruction phase**

Within the activities planned with the sub-project that will be carried on site no emissions in the underground and surface waters are expected. In the vicinity of the site there are not any watercourses which may be affected from these project activities.

It is of particular importance to avoid accidental oil, fuel leakages from the vehicles and machines that will be used during the construction and their direct contact with the soil, and therefore indirectly with the groundwater/surface water resources. Any paint spills in to the existing sewerage system/septic tank should be avoided by the Contractor. Improper waste management can also cause emissions in to soil and underground waters. If preventive measures detailed in Mitigation Plan given below, are not set there is a possibility these emissions to cause long term and significant impacts on surface, underground waters and soil. Sanitary devices (mobile toilets) will be provided for the Contractor employees.

### **Operational phase**

In the operational phase, the sources of emissions in the waters will generally be the same as so far from sanitary toilets.

### **4.3 Emissions in to the soil**

The project activities are expected to be mitigatable with proper implementation of measures for protection of the soil during planed project activities. The Contractor should establish a system for proper waste management so no waste to remain on the soil and the municipal waste genersted by the engaged employees to be collected in appropriate containers and later transported from the site by authorized companies. The Contractor shall not permit any leakage of engine oil from the vehicles that will be used to perform the envisaged infrastructure activities. Project activities must be carried out in such a manner as to prevent accidental emissions in the soil, as well as preventing damage to the soil structure due to the movement of the vehicles and construcion mechanization. Possible unintentional emissions include leaks of fuel, oil, lubricants and other chemicals, as well as the erosion of the upper layer of the soil due to rain and erosion. The Contractor must take into account the precautionary and mitigation measures planned within the Mitigation Plan, as presented below, in order to prevent the possible leakage of fuel or engine oil into the soil from the mechanization.

#### **Constuction and Reconstruction phase**

At this phase, the following impacts can occur:

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

#### **Operation phase**

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

We can conclude that the realization of the project activities at the locality Vrteshka will not cause major negative impacts on the soil.

### **4.4 Noise**

The word "noise" denotes any unpleasant sound that the human ear finds difficult to bear. The noise, as a complex physical phenomenon depends on intensity, duration and frequency; it affects the psycho-physical condition negatively and can permanently or partially damage the hearing.

### **Construction and Reconstruction phase**

During the realization of the foreseen project activities there will be an increased level of noise as a result of work of the equipment and construction mechanization engaged in reconstruction of the local road and activities for reconstruction of mountain lodge, parcel arrangement, installation of urban equipment (benches, waste bins, artificial climbing rock etc.).

The occurrence of noise from the construction mechanization during the work will have very small negative impact due to the fact that it will have limited duration and local character. Noise emission would be insignificant if the Contractor uses vehicles and construction machinery in accordance to the technical standards and the construction works are performed during daytime (7-19 o'clock).

There will be noise from the electric tools during the construction works and activities for dismantling the roof, but the impact on the surrounding environment will be insignificant.

The distance from the populated areas, the geological characteristics and the configuration of the terrain is essential for the impact of noise on the environment.

According the Rulebook for the locations of monitoring stations and measuring points ("Official Gazette of RM" no. 120/08), the project location will be in Area with I degree of noise protection, space intended for **tourism and recreation**, areas near medical equipment and hospitals, and area of national parks and nature reserves. In this Area following noise levels are allowed: -Ld - day (period from 07:00 to 19:00) – 50 dB; Lv - evening (period from 19:00 to 23:00) - 50 dB and for Ln night (period from 23:00 to 07:00) – 40 dB.

There are no settlements and sensitive areas in the vicinity of the location where project activities will take place, so there are no expected negative impacts as a result of noise that will be generated in this phase.

### **Operational phase**

In the operational phase, noise will be generated from visitors on the site that will use all foreseen structures for fun and from vehicles that will use the local/access road.. Generated noise will not cause significant negative environmental impact.

## **4.5 Waste generation and management**

During the overall project activities the quantity of the generated waste will vary.

### **Construction and Reconstruction phase**

Waste generation from the reconstruction and construction activities can potentially pollute the surrounding environment if it is inadequate managed. Mainly generated waste in this phase will be inert, and there will be a fraction of recyclable waste (such as paper, plastic, wood and glass). According to the List of types of waste, generated waste during this phase can be categorized as mixed municipal waste generated from the employees, construction and demolition waste, but there will also be small quantities of hazardous waste, for example, due to accidental spilling of machine oil, lubricants, fuel and other hazardous substances, contaminated

packaging. Biodegradable waste from terrain clearance and vegetation removal will also be generated in this phase and mineral material from excavations for parcel arrangement and access road reconstruction. The purchase and installation of equipment may create non-hazardous waste (paper, cardboard, plastics and other synthetic materials) and due to the packaging of the equipment (packaging waste). From usage of paints and vernishes hazardous packaging waste will be generated.

The inert construction waste that will be created is listed as non-hazardous waste. It is still necessary to have planned location where that waste will be stored. The inert waste (e.g. surplus earthen material, concrete, crushed stones and bricks, etc.) can cover large areas and may disrupt the landscape. The largest quantities of the excavated earthen material will be used for bulking and will be stored for further use on temporary surfaces or sent to a landfill defined by the Municipality. The amount of waste will be minimal if proper waste management is applied using the best available techniques and construction practices. The Contractor has the obligation for proper waste management on the site.

The generated construction waste will be transferred to the nearest legal landfill. The waste from the reconstruction of the mountain lodge and the other activities will be deposited at a temporary location and later transported to the "PE Plachkovica" and disposed at a legal landfill.

There is no asbestos waste on site nor radioactive lighting rods.

### **Operational phase**

In the operational phase, municipal waste will be generated from visitors on the site and from the employees. In the sub-project it is foreseen waste bins and containers to be placed on the location, so proper management of municipal waste will be provided.

## **4.6 Impacts on the nature, habitats and species**

With the realization of the sub-project, the impacts on biodiversity will be insignificant.

On the territory where the project activities will take place, no nature protected areas and no rare and endangered species are present, only ruderal vegetation, shrubs and low stemmed plants are found.

Project activities to be carried out at the site proposed for the project will be carefully planned and implemented in order not to disturb flora, fauna and habitats.

### **Construction and Reconstruction phase**

In this phase, the impacts on the surrounding biodiversity will occur as a result of the use of construction mechanization, noise generation, fugitive dust emission and emission of exhaust gases, as well as an increase in the number of employees at the site. Also, there is a risk of accidental fire ignition and improper waste management. Such impacts are local and limited to the location where construction and reconstruction activities will be carried out and the possibility of

their occurrence is low if proper supervision is engaged.

### **Operation phase**

There are no nature protected areas and rare and no endangered species on the locality, so the impacts are considered insignificant if appropriate mitigation measures are implemented.

## **4.7 Social impacts**

The project does not acquire the land acquisition therefore there are not any social impacts due to land acquisition and resettlement issues. During construction and reconstruction activities some occupational, health and safety issues for the employees may emerge due to increased noise, fugitive emission of dust, exhaust gases etc. But these impacts will be short-term and limited to the location where project activities will take place.

The implementation of this subproject is expected to provide positive socio-economic benefits to the region through the increased employment opportunities, and other social benefits. The greatest benefit will be the possibility for rural eco-tourism development, the development of local crafts and the growth of the local economy. Setting this location on the tourist map will provide better information to tourists and will create opportunities for further development. Naturally, the positive socio-economic benefits that will result from this project will be greater than the negative effects over the nature and the environment, which justifies the implementation of these project activities.

## **5. Mitigation measures**

The mitigation measures described in this section are general, and the detailed compulsory mitigation measures are provided in a table in the respective chapter on the Mitigation and Monitoring Plan.

The Contractor must agree to all the requirements in order to eliminate the potential for injuries to employees and other occupational, health and safety issues, local population and tourists. All reconstruction activities must be carried out by trained employees. Parties responsible for the implementing of the mitigation measures stipulated in this ESMP are:

1. Contractor (company selected through tender/procurement procedure)
2. Engineer-supervision
3. Applicant /beneficiary (Municipality of Karbinci).

### **5.1 Air**

During construction and reconstruction activities following preventive measures should be implemented in order to minimize identified negative impacts on air quality:

- Carefully determined period for works on the the location;
- Limiting unnecessary traffic on the site where the construction works are implemented;
- Use of quality fuel for the vehicles (according to the national standards);
- Using personal protective equipment by the employees;
- Providing measures for the protection of vehicles and equipment - in particular, measures for maintenance of the exhaust pipes installation, the engine oil filters, and regular servicing of the equipment and construction mechanization in order to reduce leakages and emissions.

### **5.2 Water**

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

- Regular maintenance of the vehicles and construction mechanization and periodic repairs in accordance with the procedures and in order to reduce leakage, emissions. The maintenance and repairs of the vehicles and construction machinery are not allowed to be carried out at the construction site;
- Contractor vehicles and construction mechanization to use existing access roads;
- Careful selection of the location for storage construction material, disposal of the construction waste to the licensed landfill (approved by the Municipality of Karbinci);
- The excavated soil should be adequately stored on the location;
- All of the hazardous materials and hazardous waste are separately stored and labeled in containers with secondary containment system.



### **5.3 Soil**

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

- Careful planning of the construction works in order to reduce the negative effects and to prevent soil contamination;
- Reducing of the size of the construction site in order to minimize the land surface that will suffer adverse impact (all foreseen construction activities must be carried out within the site that is planned for implementation of project activities);
- Restricted movement of vehicles and use of machinery that puts less pressure on the ground;
- All hazardous materials, such as fuel, paints, vernishes, lubricants, adhesives and packaging waste must be placed in separate leak-proof containers (suitable for acceptance and storage of all types of materials) located at the construction site, protected from extreme weather conditions (rain, wind);
- Protection of construction materials and stopping of construction activities in conditions of heavy rains;
- The area of the construction site should be limited and properly marked;
- All borrow pits from where gravel and sand will be borrow, and landfills where excess of excavated material will be disposed must possess appropriate permits/approvals;
- In case of occurrence of contaminated soil from the eventual release of oils from the construction mechanization, contaminated soil should be removed and treated as hazardous waste, and for the further handling of hazardous waste, the Contractor should act in accordance with Article 57 of the Law on Waste Management ("Official Gazette of RM" no. 68/04, 71/04, 107/07, 102/08, 134/08, 82/09, 124/10, 09/11, 47/11, 51/11, 163/11, 123/12, 147/13, 163/13, 51/15, 146/15, 156/15, 39/16, 63/16).

### **5.4 Noise**

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

- Construction activities to be carried out only during daytime (07-19 o'clock) as determined by the permit;
- The construction activities should be adequately planned in order to reduce the time of use of the equipment that generates noise with significant intensity;
- Since it is a rural area, and in the vicinity of the site there aren't any settlements the emitted noise has no impact;
- 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 construction practices with particular emphasis on noise levels.

## **5.5 Waste**

During construction and reconstruction activities, following preventive measures should be implemented in order to minimize the negative impact on waste

- Classification of waste according the national List of Waste („Official Gazette of R. Macedonia“ no.100/05);
- Establishing contact with authorized waste collectors, transporters of different types of waste and providing safe storage/disposal. The generated waste should be stored at separate locations at the construction site, marked/labeled with the type of waste (hazardous / non-hazardous / inert) until the moment of its collection, transportation and final disposal. The vehicles transporting the waste from the construction site should be covered to prevent dispersion;
- Reconstruction and 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 should be forbidden to burn waste at the construction site;
- The generated waste should, if possible, be reused as construction material (with the approval of the engineer-supervisor, the user and LRCP Environmental Expert);
- The construction waste should be disposed at a licensed landfill designated by the Municipality;
- The waste that will be generated from the engaged employees on the site, should be collected, transported and disposed at a landfill that meets the basic standards in accordance with the legal acts, and by applying of the best waste management practices.

## **5.6 Biodiversity (flora & fauna)**

As a measure for reducing the impacts of the use of construction machinery (vibration, noise and increased exhaust emissions) it is recommended to use proper construction mechanization with appropriate technical features and use of adequate fuels. The footprint of reconstruction works should be reduced to a minimum at the construction site at the planning stage. It is forbidden to collect firewood from and around the workspace. Animal harassment and the collection of plants in that area is strictly prohibited.

With the commencement of reconstruction activities, more precisely with the beginning of earthworks, it is necessary to remove and appropriately storage of the surface layer of the soil, which later in the final part of the reconstructive phase can be used for the recultivation of possible embankments or incisions if it quality meets standards and with permission of supervision engineer.

## **6. Environmental and Social Management (Mitigation and monitoring) Plan**

### **6.1 Monitoring plan**

The Municipality of Karbinci has the responsibility for harmonizing the project with the environment, project implementation and operating within the frames of the national legislation, of this ESMP and within the frames of the measures it defines, as well as within the frames of the ESMF (Environmental and Social Management Framework) of the entire project. The monitoring of the environmental and social aspects, as defined in the Monitoring plan, is the responsibility of the Municipality of Karbinci. Municipality of Karbinci will submit reports on environmental compliance and on the implementation of environmental protection measures and on the progress to the PIU (Project Implementation Unit) in the project progress reports, as well as within the quarterly reports during the implementation period.

The prepared Environmental and Social Management Plan for this sub-project will be a part of the tender and contractual documentation for all project activities. The Contractor will be obliged to implement the envisaged measures according to the Mitigation Plan. The engineer-supervisor has the obligation to monitor and evaluate the proposed measures implementation within the frames of the Monitoring Plan and to inform the investors and the project office (Municipality of Karbinci).

The public will be included in the procedure for assessing the impacts during public hearings in the Municipality of Karbinci. The submitted comments will be included in the report from the public hearings, which will be a part of the plan. In this manner, all comments from the public will be available to the applicants and they will take all relevant comments and include the responses and comments in the final ESMP.

The implementation of the Environmental and Social Management Plan and the social aspects will enable timely undertaking of the proposed measures and will contribute to the realization of the project activities without significant impacts on the environment.

### Mitigation plan

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
<b>Preconstruction phase</b>					
Preparation of design documentation, etc.	Possible adverse social and health impacts for the employees, users and local population as a result of non-compliance with the safety measures	<ul style="list-style-type: none"> <li>- Planning of the time for startup of the project activates;</li> <li>- Public is informed of works through Notification at Municipality Notice Board and web site and through other means, if needed;</li> <li>- All needed permits, opinions and decisions have been obtained before the works commence, including the EIA approval;</li> <li>- Local, Environmental and occupational, health and safety (OHS) inspections have been notified of works before they start;</li> <li>- Set up a special traffic regime, approved by the competent authority (e.g. traffic police);</li> <li>- the children's playground, artificial climbing rock as well as the street furniture and gazebos are designed in line with the national legislation and following the best practices and international safety standards.</li> </ul>	Municipality of Karbinci, Contractor, Supervision engineer	Prior to start of Reconstruction and Construction activities	The expenditure is included in budget of the municipality
	Light pollution; biodiversity	<ul style="list-style-type: none"> <li>- Choice/design of lamps will take into account minimizing light pollution.</li> </ul>	Municipality of Karbinci, Contractor, Supervision engineer	Design phase	The expenditure is included in budget of the municipality
<b>Construction and Reconstruction phase</b>					

- Construction phase	Possible adverse social and health impacts for the employees, users and local population as a result of non-compliance with the safety measures	<ul style="list-style-type: none"> <li>- Implementation of Good construction practices during this phase including:</li> <li>- Ensure proper marking of the project locations with tapes and warning signs, fencing off if necessary;</li> <li>- Installation of signs for reducing / limiting of the vehicle speeds near the project location;</li> <li>- Access of non-authorized personnel within the project locations is not allowed;</li> <li>- Special traffic regime is set, approved by the competent authority (e.g. traffic police) for the vehicles of the Contractor during the period of construction (together with the municipal staff and police department) and instalation of signs to ensure safety, traffic flow, and access to land and facilities;</li> <li>- Set up of vertical signalization and signs at the beginning of the site;</li> <li>- Machines should be handled only by experienced and trained personnel, thus reducing the risk of accidents;</li> <li>- All employees 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;</li> <li>- Employees must be adequately trained, certified and experienced for the work they are performing in accordance with national occupational, health and safety legislation;</li> <li>- Devices, equipment and fire extinguishers should be always functional, so in case of need they could be used rapidly and efficiently;</li> </ul>	Contractor, Supervision engineer	During Reconstruction and Construction activities	The expenditure is included in the bill of quantities
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		<ul style="list-style-type: none"> <li>- First aid kits should be available on the site and personnel trained to use it;</li> <li>- Procedures for emergency situations (including spills, accidents, etc.) are available at the site;</li> <li>- Employees to wear PPE (personal protective equipment);</li> <li>- the children's playground, artificial climbing rock as well as the street furniture and gazebos are constructed in line with the national legislation and following the best practices and meeting the best international safety standards.</li> </ul>			
<b>Impacts on the air</b>					
Construction phase	<ul style="list-style-type: none"> <li>- Fugitive dust emission from construction mechanization from performance of activities such as: excavations, removal of vegetation, terrain clearance etc.</li> <li>- Exhaust gases from construction machinery</li> <li>- Fugitive emission of volatile organic compounds from the use of bituminous emulsion and asphalt mixture and from paints and varnishes</li> </ul>	<ul style="list-style-type: none"> <li>- Spraying with water on windy and dry days to reduce the amount of fugitive dust emission;</li> <li>- Use of proper construction mechanization;</li> <li>- Avoiding work mechanization in the so-called "idle";</li> <li>- Determining the duration of machine operation;</li> <li>- Local population will be informed about construction activities and working hours;</li> <li>- Vehicles loads likely to emit dust must be covered; prevent dust during upload and unload;</li> <li>- Keep the topsoil and stockpiles separate. Protect with sheets/fences in the case of windy weather;</li> <li>- Locate stockpiles away from drainage lines, and places susceptible to land erosion;</li> <li>- Ensure all transportation vehicles and</li> </ul>	Contractor, Supervision engineer	- During Reconstruction and Construction activities	The expenditure is included in the bill of quantities

		<p>machinery have been equipped with appropriate emission control equipment, regularly maintained and attested;</p> <ul style="list-style-type: none"> <li>-Ensure all vehicles and machinery use petrol from official sources (licensed gas stations) and on fuel determined by the machinery and vehicles producer;</li> <li>- Utilization of eco-friendly paints and vernishes</li> </ul>			
<b>Impacts on water and soil</b>					
Construction phase	<ul style="list-style-type: none"> <li>- Spillage of fuel or motor lubricants and oils,</li> <li>- Discharge of waste water from employees</li> <li>- Accident of construction machinery at construction site</li> <li>- Improper waste management.</li> <li>- Impacts to soil and water</li> </ul>	<ul style="list-style-type: none"> <li>- Carrying out regular maintenance of vehicles and construction mechanization and periodic repairs in accordance with the prescribed procedures to reduce leakage, emissions and dispersion;</li> <li>- The washing, maintenance and repairs to vehicles and construction machinery are forbidden to be carried out at the construction site;</li> <li>- The vehicles and construction machinery of the Contractor to use only existing access roads;</li> <li>- no mineral or other waste is to be stored near watercourses;</li> <li>- no water will be released to the recipient without a prior treatment;</li> <li>- Careful selection of the location for storage of construction materials, warehouses / disposal of construction waste; location must be defined/approved by the Municipality;</li> <li>- The excavated earthen material should be adequately stored at the location;</li> <li>- Prevent hazardous spillage coming from waste (temporary waste storage will be</li> </ul>	Contractor, Supervision engineer	<ul style="list-style-type: none"> <li>- During Reconstruction and Construction activities</li> </ul>	The expenditure is included in the bill of quantities



		<p>leakage-proof and those for hazardous or toxic waste equipped with secondary containment system, e.g. double walled or bunded containers);</p> <ul style="list-style-type: none"> <li>- If hazardous spillage occurs, remove it, clean the site and follow procedures and measures for hazardous waste management;</li> <li>- In the case of any run-off coming from working 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;</li> <li>- Install/provide and maintain of proper sanitary facilities/toilets for employees. The wastewater from these sources should be transported to proper waste water treatment facilities;</li> <li>- Prevent hazardous spillage coming from tanks (mandatory secondary containment system, e.g. double walled or bunded containers);</li> <li>- 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.</li> <li>- Water, and other components, in concrete mixture shall be clean and free of harmful chemicals.- Protection of construction materials and stopping reconstruction activities in conditions of heavy rains;</li> <li>- All hazardous materials, such as fuel,</li> </ul>			
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		<p>lubricants, adhesives, and packaging waste are non-inert waste must be placed in special appropriate containers located at the construction site, protected from extreme weather conditions;</p> <ul style="list-style-type: none"> <li>- In case of occurrence of contaminated soil from the eventual release of oils from the construction mechanization, contaminated soil should be removed and treated as hazardous waste.</li> <li>- water for the construction will be supplied from the existing sources and there will be no new drilling or use of natural waterdourses (including the nearby spring);</li> <li>- no anticorrosives will be applied on the site;</li> <li>- when applying protective coatings and paint, measures will be taken against accidental spilling;</li> </ul> <p>Apply storm water management and soil erosion prevention measures;</p>			
<b>Waste management</b>					
Construction phase	<ul style="list-style-type: none"> <li>- Generation of mixed municipal waste</li> <li>- Construction waste from reconstruction and construction activities</li> <li>- Organic waste from removed vegetation and terrain clearance</li> <li>- Waste from demolition activities</li> <li>- Surplus earthen material</li> <li>- Packaging waste</li> <li>- Hazardous waste</li> </ul>	<ul style="list-style-type: none"> <li>- Selection and separation of the generated waste;</li> <li>- Identification and classification of waste according to the national List of Waste („Official Gazette of R.M.“no.100/05);</li> <li>- Determination of waste characteristics;</li> <li>- Storage on places designated for that purpose. Landfills for final and temporary disposal must be approved by the Municipality;</li> <li>- Containers for each identified waste type are provided in sufficient quantities and positioned conveniently;</li> </ul>	Contractor, Supervision engineer	<ul style="list-style-type: none"> <li>- During Reconstruction and Construction activities</li> </ul>	The expenditure is included in the bill of quantities

	(contaminated soil, and packaging waste from paints, vernishes, etc.)	<ul style="list-style-type: none"> <li>- Waste collection and disposal pathways and licensed landfills/processing plants will be identified for all major waste types expected from demolition and construction activities. For management of hazardous wastes, instructions/guidelines from Ministry of Environmental Protection and Physical Planning will be followed.</li> <li>- 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;</li> <li>- The records of waste disposal will be regularly updated and kept as proof for proper management, as designed;</li> <li>- Whenever feasible the Contractor will reuse and recycle appropriate materials;</li> <li>- Discarding any kind of waste (including organic waste) or waste water to the surrounding nature or water-bodies is strictly forbidden;</li> <li>- Collect, transport and final disposal/processing of the municipal waste by a licensed company</li> <li>- If the waste has one or more hazardous characteristics, the generator and / or owner is obliged to classify the category of hazardous waste and handle it as hazardous waste;</li> <li>- All waste will be collected and disposed adequately by licensed collectors and to licensed landfills;</li> <li>- Planed project activities will end (finish) only after all waste materials have been removed (no waste must be left on the</li> </ul>			
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		<p>construction site)/ collected by authorized company;</p> <ul style="list-style-type: none"> <li>- It is forbidden to burn waste at the construction site;</li> <li>- A waste that is generated during the stay and work of the Contractor employees, by applying the best management practices, should be collected, transported and deposited in a legal landfill that meets the basic standards in accordance with the legal acts</li> </ul>			
- Construction phase	- Toxic / hazardous materials and waste management	<ul style="list-style-type: none"> <li>- Temporarily storage on site of all hazardous or toxic substances (including wastes) will be in safe containers labeled with details of composition, properties and handling information. Chemicals are managed, used and disposed, and precautionary measures taken as required in the Material Safety Data Sheets (MSDS);</li> <li>- Hazardous substances (including liquid wastes) will be kept in a leak-proof container to prevent spillage and leaking. This container will possess secondary containment system such as bunds (e.g. bunded-container), double walls, or similar. Secondary containment system must be free of cracks, able to contain the spill, and be emptied quickly;</li> <li>- 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;</li> <li>-The containers holding ignitable or reactive wastes must be located at least 15 meters</li> </ul>	Contractor, Supervision engineer	- During Reconstruction and Construction activities	The expenditure is included in the bill of quantities

		<p>(50 feet) from the facility's property line; -</p> <p>- Large amounts of fuel will not be kept at the site;</p> <p>- Waste should be never mixed and should be transported by specially licensed carriers and disposed/processed only in a licensed facility'</p> <p>- Paints with toxic ingredients or solvents or lead-based paints will not be used;</p> <p>- Hazardous waste will be transported and handled only by licensed companies in line with the national regulation;</p> <p>- Hazardous waste will be disposed only to licensed landfills or processed in licensed processing plants.</p> <p>- All borrow pits from where gravel and sand will be borrow, and landfills where excess of excavated material will be disposed must posses' appropriate permits/approvals;</p>			
	- Materials management	<p>- No new materials containing asbestos or lead-based paint will be used;</p> <p>- Mineral resources (aggregate, sand, gravel, etc.) are borrowed/supplied only from licensed companies with valid concessions for extraction/exploitation. The companies can prove H&amp;S measures and environmental management in accordance with national legal requirements.</p> <p>- existing quarries and asphalt plants are used.</p>	Contractor, Supervision engineer	During Reconstruction and Construction activities	The expenditure is included in the bill of quantities
<b>Impacts due to increased noise level</b>					
Construction phase	- Increased noise level as a result of construction, reconstruction and	<p>- Construction activities can only take place during daytime (07-19h);</p> <p>- Construction activities should be planned</p>	Contractor, Supervision engineer	- During Reconstruction and Construction	The expenditure is included in the bill of quantities

	demolition activities	appropriately to reduce the use time of the equipment that creates the noise with high intensity; - During the operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed.		activities	
<b>Impacts on biodiversity</b>					
Construction phase	- impacts to biodiversity (removal of vegetation, disturbance due to noise, fugitive dust emission and exhaust gases)	-Use proper construction mechanization with appropriate technical features and use of adequate fuels, adequate removal of vegetation, use of best construction practices; - Reducing the size of the construction site due to the minimization of the land that will suffer a negative impact; - Open fires and burning waste is strictly prohibited; - Pouching and other types of disturbance of animals as well as collection of plants and forest products is strictly prohibited; - when replanting or greening the site, only native plants will be used;	Contractor, Supervision engineer	- During Reconstruction and Construction activities	The expenditure is included in the bill of quantities

Construction phase	- Cultural Heritage (chance findings)	- In the case of chance findings, the works must be stopped immediately and competent authorities, (Ministry of Culture, Directorate for Protection of Cultural Heritage – Skopje and Museum and Institute Shtip), informed within 24 hours following the national procedures. Works will recommence upon approval of competent authorities.	Contractor, Supervision engineer	- During Reconstruction and Construction activities	N.A.
<b>Social impacts</b>					
Construction phase	-Occupational, health and safety issues for employees	- Preparation of Plan for protection at work on so called temporary construction mobile sites in accordance with OHS legislation	Contractor, Supervision engineer	- During Reconstruction and Construction activities	The expenditure is included in the bill of quantities
<b>Operative phase</b>					
<b>Waste management</b>					
Operational phase: Tourists visiting the location Vreshka	- Municipal waste management; - Water and soil impact;	- Concluding Contract with a local utility company for waste collection, transportation and its disposal to a municipal landfill; - Regularly emptying of cesspool by an authorized company and management/treatment of content in treatment plants in line with the national legislation; - Regular maintenance and testing impermeability of the cesspool.	Municipal communal enterprise	- During working period of Mountain Lodge and other supporting facilities	Depending on the tariff of the Municipal Communal Enterprise
<b>General safety measures</b>					
Operational phase: Tourists visiting the location Vreshka	- Safety issues for visitors	- Implementation of safety instructions and measures for visitors, especially for children safety, such as warning signs, etc.	Employees in Mountain Lodge	- During working period of Mountain Lodge and other supporting facilities	N.A.

N.A. – Not applicable



## **6.2 Monitoring activities**

It is essential to prepare a monitoring plan and to conduct frequent monitoring in order to demonstrate the overall performance of the project activities and the short-term impacts of the construction activities. More specifically, as an integral and essential part of the Environmental and social management plan, the environmental monitoring program should have the following objectives:

- Determining the true scale / size of the impact;
- Controlling the impacts of the construction processes and the operational phase;
- Inspecting environmental protection standards that are applicable during construction activities;
- Checking and monitoring of the implementation of environmental protection solutions during construction activities;
- Proposing mitigation measures in the event of unexpected impacts;
- Assessment of the effect of the mitigation measures during the construction and operational phase;

The project will implement an environmental monitoring plan that: (1) monitors the performance of the Contractor during the implementation in order to inspect whether the contractor applies the expected mitigation measures, and then (2) assess the real impacts the project has on the environment over the years after completion of the various project components. The main components of the Monitoring Plan are as follows:

- Observation/monitoring of the environmental parameters;
- Observation/monitoring of specific areas, locations and parameters;
- Applicable standards and criteria;
- Duration and frequency
- Obligations of the institution and
- Costs.

### Monitoring plan

What	Where	How	When	By Whom	How much
Parameter is to be monitored?	Is the parameter to be monitored?	Is the parameter to be monitored (what should be measured and how)?	Is the parameter to be monitored (timing and frequency)?	Is the parameter to be monitored— (responsibility)?	is the cost associated with implementation of monitoring
<b>Preconstruction phase</b>					
1. Checking the necessary documentation (permits, etc.)	- Offices of the municipality of Karbinci	Visual inspection of the necessary documentation and check if it is inline with national legal requirements	Before the start of the construction activities	Supervision engineer, municipality representative, LRCP EE	- Included in sub-project budget
2. Notification of public and relevant institutions	- Offices of Contractor	Visual inspection of the necessary documentation	Before the start of the construction activities	Supervision engineer, municipality representative, LRCP EE	- Included in sub-project budget
<b>Construction and Reconstruction phase</b>					
3. Occupational health and safety measures for employees, users, safety measures for local population and other visitors on construction site	- On so called temporary construction site; - Mountain Lodge (addition of an attic). - Safety of playgrounds, street furniture and climbing wall	Verification of documentation and visual checks before and during the execution of the reconstruction and construction activities. Monitoring whether envisaged OHS and safety measures are met	During construction and reconstruction activities	Contractor, Supervision engineer, LRCP EE, Municipality inspection	- Included in sub-project budget

4. Occurrence of fugitive dust emission during construction and reconstruction activities Exhaust emissions from construction mechanization and vehicles. Fugitive emission of volatile organic compoundads	<ul style="list-style-type: none"> <li>- On so called temporary construction site;</li> <li>- Mountain Lodge (addition of an attic)</li> </ul>	Visual inspection of the presence of dust and exhaust gases and check whether the paints and varnishes meet the prescribed quality standards	During construction and reconstruction activites	Supervision engineer, LRCP EE, Municipality inspection	- Included in sub-project budget
5. Spillage of fuel or motor fuel and oils Discharge of waste water from employees Accident on construction site from construction mechanization	<ul style="list-style-type: none"> <li>- On so called temporary construction site;</li> <li>- Mountain Lodge (addition of an attic)</li> </ul>	Visual inspection of the presence of oil stains on soil Visual inspection for discharges of waste water from the employees	During construction and reconstruction activites	Supervision engineer, LRCP EE, Municipality inspection	- Included in sub-project budget
6. Leakage of fuels and oils from construction mechanization, a process that can cause impacts on groundwater, as its filtration goes through the soil; Inadequate management of generated waste at construction site Pollution of groundwater and soil can occur in case of accidents and emergencies.	<ul style="list-style-type: none"> <li>- On so called temporary construction site;</li> <li>- Mountain Lodge (addition of an attic)</li> </ul>	Visual inspection of the presence of oil stains on soil Visual inspection of waste management	During construction and reconstruction activites	Supervision engineer, LRCP EE, Municipality inspection	- Included in sub-project budget
7. Generation of mixed municipal waste Construction waste from construction activities  Surplus earthen material and other waste types	<ul style="list-style-type: none"> <li>- On so called temporary construction site;</li> <li>- Mountain Lodge (addition of an attic)Kolibi:</li> <li>- Urban equipment</li> </ul>	Selection and separation of waste by type  Control of documentation for handed over waste to authorized companies  Visual inspection for	During construction and reconstruction activites	Contractor, Supervision engineer, LRCP EE, Municipality inspection	- Included in sub-project budget

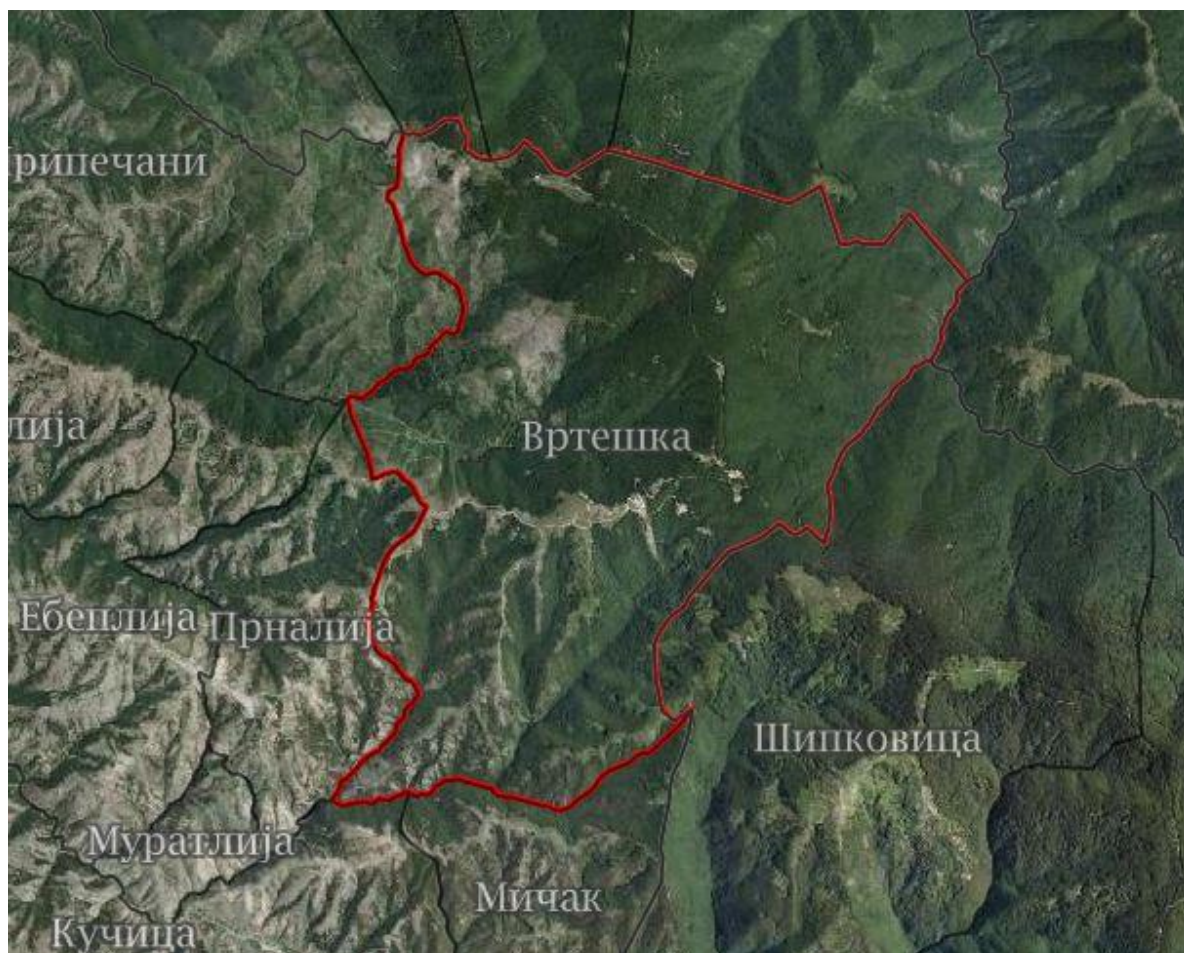
		inadequate temporarily (disposed) waste and all other mitigation measures given in mitigation plan			
8. Occurrence and generation of hazardous waste from construction activities	<ul style="list-style-type: none"> <li>- On so called temporary construction site;</li> <li>- Mountain Lodge (addition of an attic)</li> </ul>	Visual inspection of the presence of hazardous waste and its proper management according to legislation for waste management; inspection of waste records	During construction and reconstruction activities	Contractor, Supervision engineer, LRCP EE, Municipality inspection	- Included in sub-project budget
9. Increased noise level as a result of project activities	<ul style="list-style-type: none"> <li>- On so called temporary construction site;</li> <li>- Mountain Lodge (addition of an attic)</li> </ul>	Auditive noise level assessment	During construction and reconstruction activities	Contractor, Supervision engineer, LRCP EE, Municipality inspection	- /
<b>Operative phase</b>					
<b>Waste management</b>					
1. Municipal waste from visitors and employees on the locality Vrteshka	- Locality of Vrteshka	/	According to the dynamics of the Public Utility Company	Public Utility Company	- /
<b>General safety measures</b>					
1. Safety issues for visitors	- Locality of Vrteshka (children playground and climbing rock)	Regular visual check of safety measures implementation and maintenance of children playground and climbing rock	On daily basis	Employees in locality of Vrteshka	- /

During the project activities, special attention should be paid to:

- The contractor is obliged to minimize the impacts of generated waste, emitted dust and noise.
- The supervisory authority will supervise the impacts of the construction works over the environment.
- Local inspection entities/bodies will also supervise, in aim to ensure the Contractor will remove any possible irregularities.

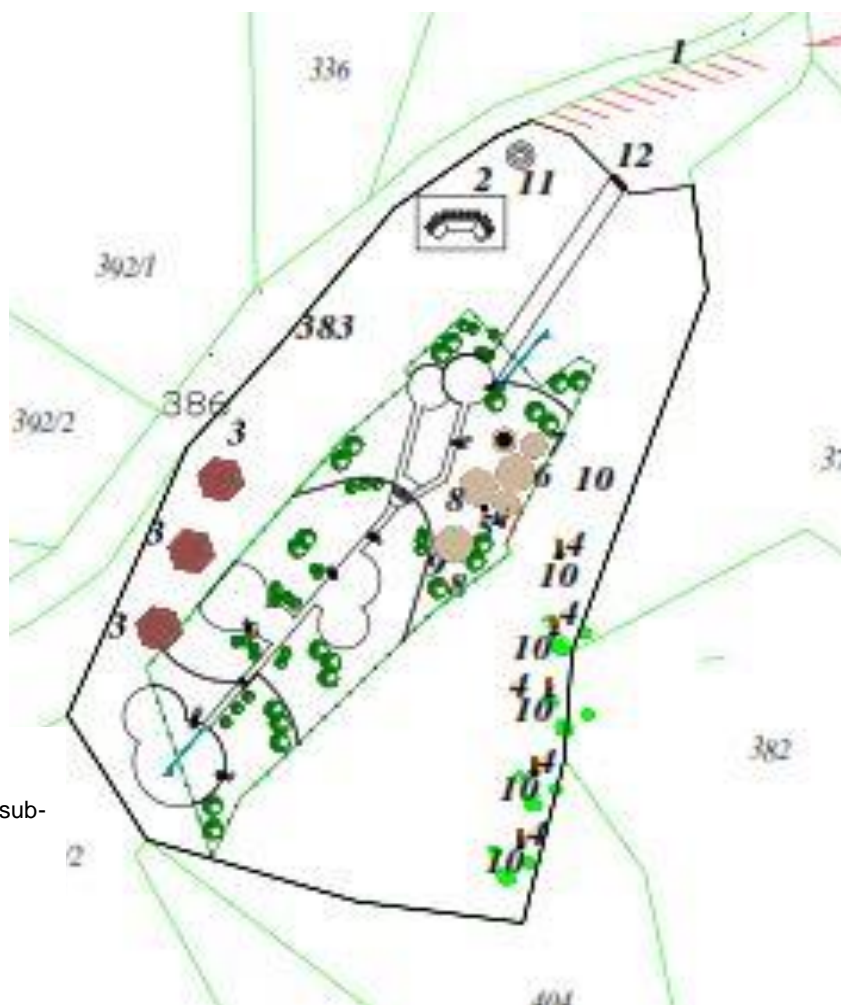
ANNEXES:

1. Micro and Macro location of locality Vrteshka
2. Layout of locality Vrteshka
3. Intersection through location
4. Decision for approval of Elaborate for environmental protection for local road
5. Satellite image of access road



Macro and micro location of locality Vrteshka (source: Google Earth)

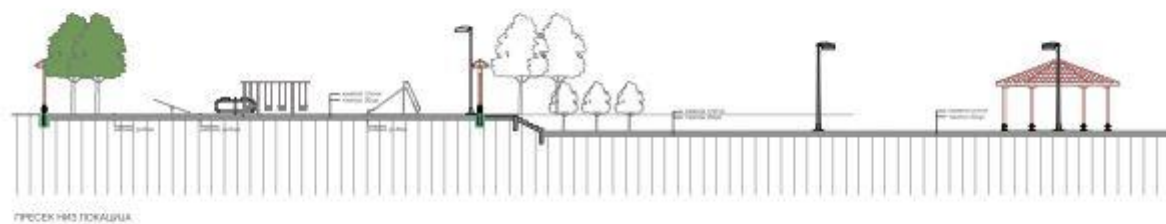




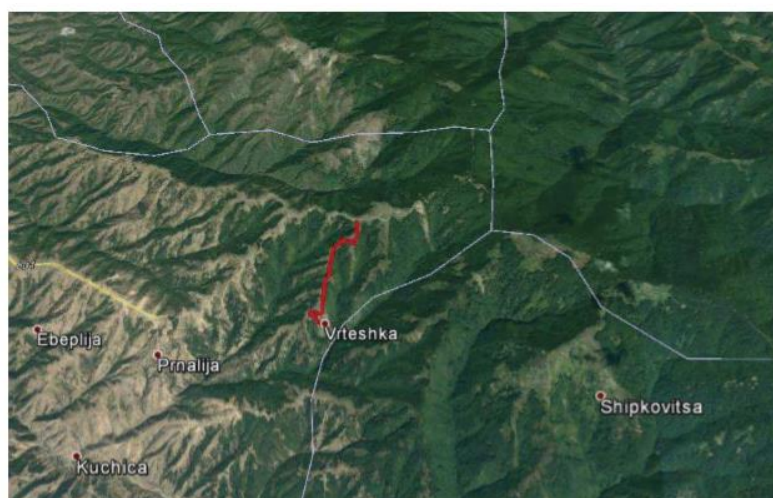
Legend:

1. Parking space (not part of this sub-project);
2. Climbing rock;
3. Gazebo;
4. Banches;
5. Rocher for children;
6. Swings;
7. Seesaw for children;
8. Toboggan;
9. Sand for children activities;
10. Waste bins;
11. Rod bucket;
12. Entrance gate

Layout of the locality Vrteshka



Intersection through location



Satelite image for access road from regional road R-601 to v. Vrteshka, curch Sent Gjogji, Karbinci



РЕПУБЛИКА МАКЕДОНИЈА  
ОПШТИНА КАРБИНЦИ  
Број Уп.І бр.11 - 13  
22 Јануари 2016 год.  
Карбинци

Градоначалникот на Општина Карбинци, решавајќи по барањето на ОПШТИНА КАРБИНЦИ со ЕМБС: 6059171, за одобрување на Елаборат за заштита на животната средина, врз основа на член 24 став 7 од Законот за животна средина ("Сл. весник на РМ" бр.53/05, 81/05, 24/07, 159/08, 83/09, 124/10, 51/11, 123/12, 93/13, 187/13, 42/14, 44/15, 129/15 и 192/15) го издава следното:

**РЕШЕНИЕ**  
**ЗА ОДОБРУВАЊЕ НА ЕЛАБОРАТ ЗА**  
**ЗАШТИТА НА ЖИВОТНАТА СРЕДИНА**

1. Со ова Решение **СЕ ОДОБРУВА** Елаборатот за заштита на животната средина за изградба на пристапен пат од Регионален пат Р-601 до с. Вртешка, црква Св. Ѓорѓи, Општина Карбинци.

2. Од доставената документација е констатирано дека со работата на предвидениот објект "Пристапен пат од Регионален пат Р-601 до с. Вртешка, црква Св. Ѓорѓи, Општина Карбинци" и со вршењето на предвидените градежни активности, нема да има негативно влијание врз животната средина.

3. Подносителот на елаборатот Општина Карбинци, е потребно целосно да се придржува према поднесениот елаборат и мерките за заштита на животната средина наведени во него и да превзема и други мерки и активности за заштита на животната средина доколку со нови прописи се одредат дополнителни мерки.

4. Ова Решение влегува во сила од денот на донесувањето.

**Образложение**

ОПШТИНА КАРБИНЦИ со ЕМБС 6059171, претставувана од Градоначалникот на Општина Карбинци достави барање за одобрување на Елаборат за заштита на животната средина за објект Пристапен пат од Регионален пат Р-601 до с. Вртешка, црква Св. Ѓорѓи, Општина Карбинци, под број: УП.І бр.11 - 13 од 12.01. 2016 година.

Инвеститорот со барањето достави:

- Три примероци од Елаборатот за заштита на животната средина, Тех.бр. ПД\_112\_07/15 од Октомври 2015 година, изработен од "ТЕИНГ Кребс унд Кифер Интернешнл и др.", со овластување број 07-2037/75 од 29.07.2009 година на Каракашова Александра издадено од Комора на овластени архитекти и овластени инженери;
- Компакт диск со Елаборатот во електронска форма.

Предметниот Елаборат за заштита на животната средина е изготвен за дејности и активности за кои задолжително се изработува елаборат, а за чие одобрување е надлежен градоначалникот на Општина Карбинци, во ПРИЛОГ 1, точка XII – ИНФРАСТРУКТУРНИ ПРОЕКТИ, точка 1. Локални патишта и улици, согласно Уредбата за дејностите и активностите за кои задолжително се изработува елаборат, а за чие одобрување е надлежен градоначалникот на општината, градоначалникот на Градот Скопје и градоначалникот на општините во Градот Скопје, донесена на 06.03.2012 година на седница на Владата на Република Македонија (“Службен весник на РМ”, број 8/09, 32/12).

Предметниот елаборат за заштита на животната средина за Пристапен пат од Регионален пат Р-601 до с. Вртешка, црква Св. Ѓорѓи, Општина Карбинци е составен од текстуален дел и графички прилози, анализирани се сите неопходни компоненти, изворите и видовите можни деградации и загадувања врз основа на што се димензионирани и дефинирани мерките за заштита на основните медиуми. Според наша оценка, прикажаните заштитни мерки во Елаборатот за заштита на животната средина за “Пристапен пат од Регионален пат Р-601 до с. Вртешка, црква Св. Ѓорѓи, Општина Карбинци”, се апликативни и во целост ги задоволуваат основните барања со што поднесениот Елаборат се одобрува на која основа и се издава ова Решение.

Врз основа на горе изнесеното, а согласно член 24 став 7 од Законот за животна средина (“Сл.весник на РМ” бр. 53/05, 81/05, 24/07, 159/08, 83/09, 124/10, 51/11, 123/12, 93/13, 187/13, 42/14, 44/15, 129/15, 192/15 и 39/16), Градоначалникот на Општина Карбинци одлучи како во диспозитивот на ова Решение.

**Правна поука:** Против ова решение може да се изјави жалба во рок од 15 дена од денот на приемот на решението, која се поднесува до Градоначалникот на Општина Карбинци.

Доставено до:

- Лицето – барател,
- Архива,

