

LOCAL AND REGIONAL COMPETITIVENESS PROJECT

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN

"Dojran - tourist pearl of Southeast Macedonia "



Dojran, 2019

Content

1. INTRODUCTION	3
2. POLITICS, LEGAL AND ADMINISTRATIVE FRAMEWORK	4
2.1 PUBLIC CONSULTATION ABOUT THE ENVIRONMENTAL AND MANAGEMENT PLAN FOR THE PROJECT	7
3. PROJECT DESCRIPTION	8
3.1 INTRODUCTION	8
3.2 PROJECT LOCATION	8
3.3 TECHNICAL AND TECHNOLOGICAL DESCRIPTION OF THE ACTIVITIES	12
4. BASIC DATA	18
5. ENVIRONMENTAL IMPACTS	28
5.1 EMISSIONS	28
5.1.1 Air emissions	29
5.1.2 Water pollution	30
5.2 WASTE GENERATION AND MANAGEMENT	31
5.3 SOIL EMISSIONS	32
5.4 NOISE AND VIBRATION	33
5.1 BIODIVERSITY (FLORA AND FAUNA)	34
5.2 SOCIAL IMPACTS	35
6. MITIGATION MEASURES	36
6.1 AIR	36
6.2 WATER	36
6.3 SOIL	37
6.4 NOISE	37
6.5 WASTE	38
6.6 BIODIVERSITY (FLORA AND FAUNA)	39
7. ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN	40
8. MONITORING ACTIVITIES	55
9. ROLES AND RESPONSIBILITIES FOR IMPLEMENTING THE ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN	6460

Annex 1. Decision for approval of Environmental Protection Elaborates (Original and English translation)

1. Introduction

The Local and Regional Competitiveness Project (LRCP) is four-year operation for investment, supported from European Union, which use IPA 2 funds for competitiveness and innovations in Macedonia. With LRCP will be managed as hybrid trust fund, it consists of four components and it is carried out by the World Bank and the Government of the Republic of Macedonia. The project provides funding for investment and capacity building for supporting sector growth, investment in destinations and the creation of prosperity in certain destinations. On regional and local level, the project supports selected touristic destinations in the country through a combination of technical assistance for improving destination management, investment in infrastructure and investment in connectivity and innovation. Investments will be made through a grant scheme for regional tourism actors, such as municipalities, institutions, NGOs and the private sector. This Environmental and Social Management Plan (ESMP) is prepared for the activities undertaken for the subproject "Dojran - tourist pearl of Southeast Macedonia". The ESMP represents the environmental document consisting of a description of the project, technical details, scope, environment and location, on the basis of which environmental and social risks and measures for avoidance and mitigation are assessed. The application of measures for mitigation of the perceived risks and problems identified in the ESMP is mandatory.

Natural and cultural beauties, local products and food, as well as historical sites concentrated in Dojran, located in the Southeast region of the country, is a set of values that make this part attractive for tourists. At the moment, Dojran is a low-budget seasonal destination with dominant domestic tourists, but also a large number of daily visitors and transit tourists circulates during the season. Priority segments of tourists are domestic recreational and regional tourists (Bulgaria, Greece, Serbia) short stay and organized and independent active tourists. Despite the development of the covered destination to some extent, several challenges have been identified that slows down the development and promotion of the tourism product being offered.

Within the sub-project "Dojran - tourist pearl of South-East Macedonia ", several activities are included, as follows:

- Renovation of Green recreational zone - City Park Dojran
- Renovation of Open summer scene and arrangement of space around the Open summer scene
- Reconstruction of access road (Street no. 2) to Open summer scene

2. Politics, legal and administrative framework

The process of environmental impact assessment serves as the primary contribution to the decision-making process by the Macedonian authorities, which should approve the project before it is build and run by the World Bank, which provides funding for the project.

National legal framework

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

The procedure starts when the Investor (Project Proponent) who intends to implement a project submits a Letter of intent, in written and electronic form to the Ministry of Environment and Physical Planning (MoEPP – Directorate/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 a SEA, EIA Study or Elaborate for environmental protection should be carried out or not for a certain project. For the development of projects that do not belong to the list of the projects for which the EIA procedure has to be carried out (small scale projects), there is a requirement for the preparation of an "Environmental Impact Report-Elaborate for environmental protection" (relevant for the Category B projects under the WB OP 4.0.1 Environmental Assessment procedure).

During the EIA Procedure within the screening phase, if the decision has been that there is no need for EIA procedure to be carried out the investor should consult procedure for development of Environmental Impact Assessment Report – Elaborate for environmental protection. This procedure is obligatory for small scale infrastructural projects (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.), causing short-term, minor negative impacts to the environment.

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

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

protection need to be adopted by the Mayor of the municipality (Official Gazette of RM" No. 32/12) or Mayor of City of Skopje.

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

The Elaborate for environmental protection 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 Elaborate for environmental protection (according to the national legislation).

List of legal regulations and documentation on which the proposed environmental management measures are based:

1. Law on Environment ("Official Gazette of the Republic of Macedonia" No. 53/05, 81/05, 24/07, 159/08, 83/09, 48/10, 124/10, 51/11, 123/12, 93/13, 187/13, 42/14, 44/15, 129/15, 192/15 and 39/16)
2. Law on Waste Management ("Official Gazette of the Republic of Macedonia" No. 68/04, 71/04, 107/07, 102/08, 143/08, 09/11, 51/11, 123/12, 147/13, 163/13, 51/15, 146/15, 156/15, 192/15, 39/16 and 63/16)
3. Law on protection against noise in the environment ("Official Gazette of the Republic of Macedonia" No. 79/07, 124/10, 47/11, 163/13 and 146/15)
4. Law on ambient air quality ("Official Gazette of the Republic of Macedonia" No.100/12, 163/13, 10/15 and 146/15)
5. Law on nature protection ("Official Gazette of the Republic of Macedonia" No. 67/04, 14/06, 84/07, 35/10, 47/11, 148/11, 59/12, 13/13, 163/13, 41/14, 146/15, 39/16 and 63/16)
6. Law on packaging management and packaging waste ("Official Gazette of the Republic of Macedonia" No. 161/09, 17/11, 47/11, 136/11, 6/12, 39/12 ,163/13,146/15 and 39/16)
7. Law on safety and health in working of the Republic of Macedonia ("Official Gazette of the Republic of Macedonia" No.92/07, 136/11, 23/13 ,25/13 137/13, 164/13, 158/14, 15/15, 129/15 and 192/15)
8. Law on waters ("Official Gazette of the Republic of Macedonia" No.87/08, 6/09, 161/09, 83/10, 51/11, 44/12, 23/13, 163/13, 180/14 and 146/15);

9. Law for construction ("Official Gazette of the Republic of Macedonia" No. 70/13, 79/13, 137/13, 163/13, 27/14, 28/14, 42/14, 115/14, 149/14, 187/14, 44/15, 129/15, 217/15, 30/16, 31/16 and 39/16)
10. Law on occupational health and safety ("Official gazette of the RM" No. 92/07, 136/11, 23/13 and 25/13)
11. Law for protection of the cultural heritage ("Official Gazette of the Republic of Macedonia" No. 20/04, 71/04, 115/07, 18/11, 148/11, 23/13, 137/13, 164 / 13, 38/14, 44/14, 199/14, 104/15, 154/15, 192/15 and 39/16)

World Bank Environmental and Social Safeguard Policies

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

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

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

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

would lead to significant loss or degradation of any Critical Natural Habitats, whose definition includes those natural habitats which are either:

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

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

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

The WB OP/BP on Forestry aims to reduce deforestation, enhance the environmental contribution of forested areas, promote afforestation, reduce poverty and encourage economic development. Critical forest areas are natural forest lands which are:

- existing protected areas and areas officially proposed by governments as protected areas, areas initially recognized as protected by traditional local communities, and sites that maintain conditions vital for the viability of these protected areas;
- Sites identified by WB or an authoritative source, such as areas with known high suitability for biodiversity conservation and areas that are critical for rare, vulnerable, migratory or endangered species.

In accordance with the WB policy on Access to Information and LRCP Environmental and Social Management Framework, Public Consultations and Disclosure should follow specific procedures: Environmental and social management plans will be publicly published and available on LRCP/Cabinet of the Deputy Prime Minister of the Government of the Republic of Macedonia (Implementer of LRCP), Beneficiary (Municipality of Dojran) and Agency for promotion and support of tourism websites and will serve as the basic document for approval.

2.1 *Public consultation about the Environmental and Social Management Plan for the project*

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

In line with the ESMF, this ESMP must be publicly consulted prior to final approval of the sub-grant. Once the draft ESMP is approved by PIU Environmental Expert and WB

Environmental Specialist it will be published on the web site of LRCP PIU (CDMPEA), The Agency for Promotion and Support of Tourism and web site of impacted municipality of Dojran where it will remain available to the public for at least 14 days. A hard copy will be available at LRCP PIU (CDMPEA) and Municipality of Dojran call for comments and call for participation in the public consultation meeting (with time and venue) will accompany ESMP. The public consultation meeting will take place in the impacted municipality near the end of consultation period. Proactively, the Beneficiary (Municipality of Dojran), will inform and invite major project stakeholders including local NGOs, impacted communities and municipalities directly and by appropriate means. The submitted comments will be included in the Report from the public hearing which will be part of the final version of ESMP. This way all comments from the public will be available to the applicants and they will take all relevant comments and will include the answers and remarks into the final ESMP.

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

3. Project description

3.1 Introduction

In order to improve the tourist offer and improve the accessibility to tourist locations, the Municipality of Dojran has begun to prepare the project documentation.

With the realization of the set project goals, the following results are expected:

- Renovation of Green recreational zone - City Park Dojran
- Renovation of Open summer scene and arrangement of space around the Open summer scene
- Reconstruction of access road (Street 2) to Open summer scene

3.2 Project location

The locations where the activities included in the project proposal are foreseen are located on the territory of the city of Dojran. On the following cadastral parcels:

- KP no. 1050/1, KM Sretenovo, Open summer scene;
- KP no. 383/2, KP no. 399, KP no. 448/1 and KP no. 448/2 KM Star Dojran and KP no. 1050/1 KM Stretenovo, parks;

- Route of the street No. 2 (access road to open summer scene), KP no. 1050/1 KM Stretenovo.

The following figures show the Cadastre parcels covered by the project activities:

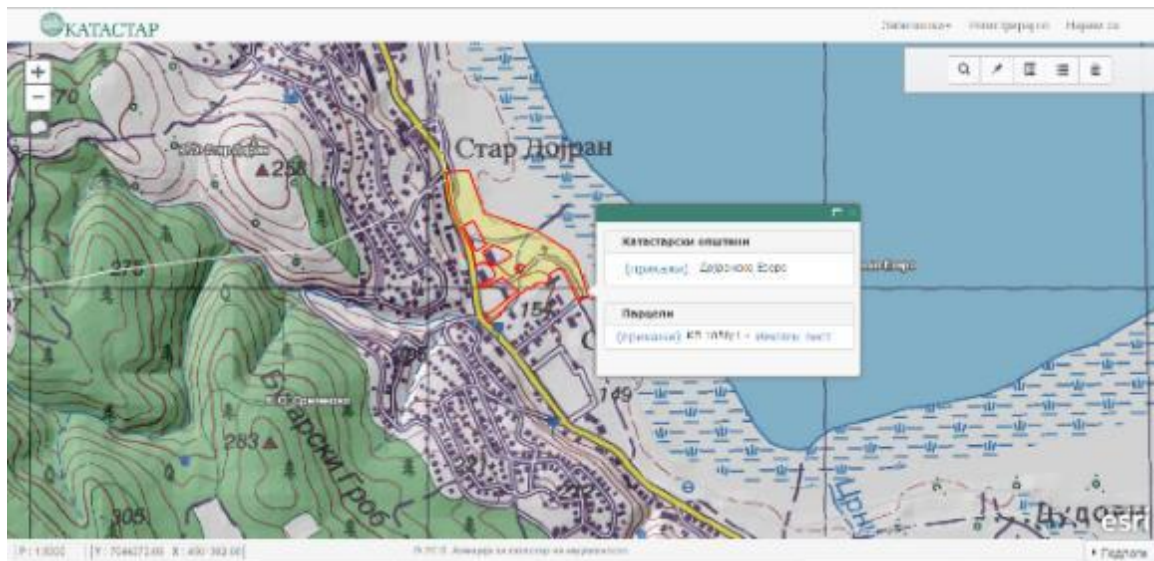


Figure 1 KP no. 1050/1, KM Sretenovo, Open summer scene and park

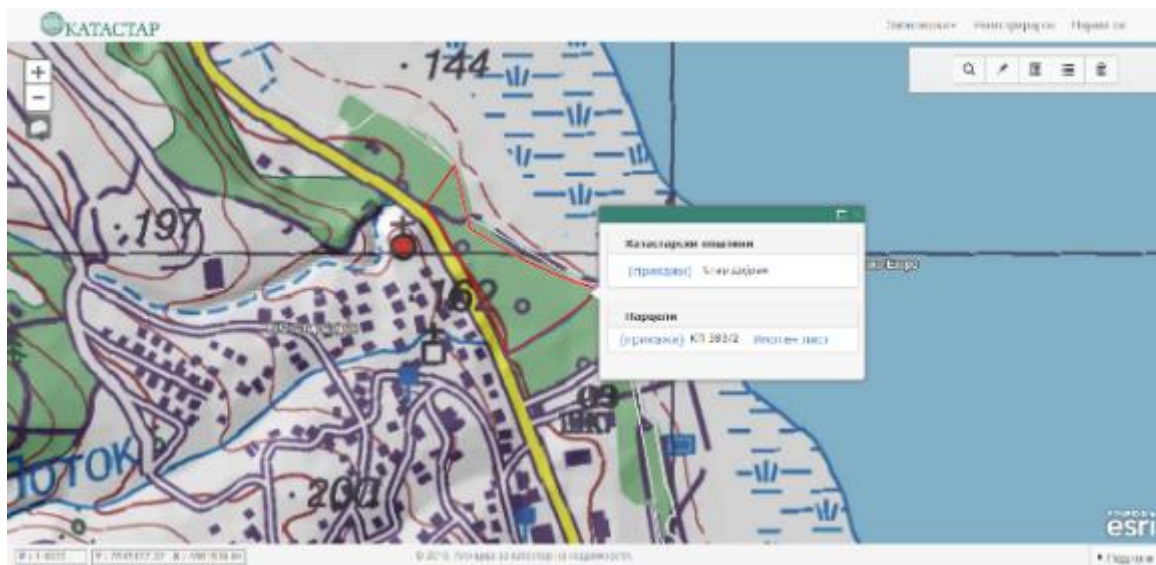


Figure 2 KP no. 383/2 KM Star Dojran, parks

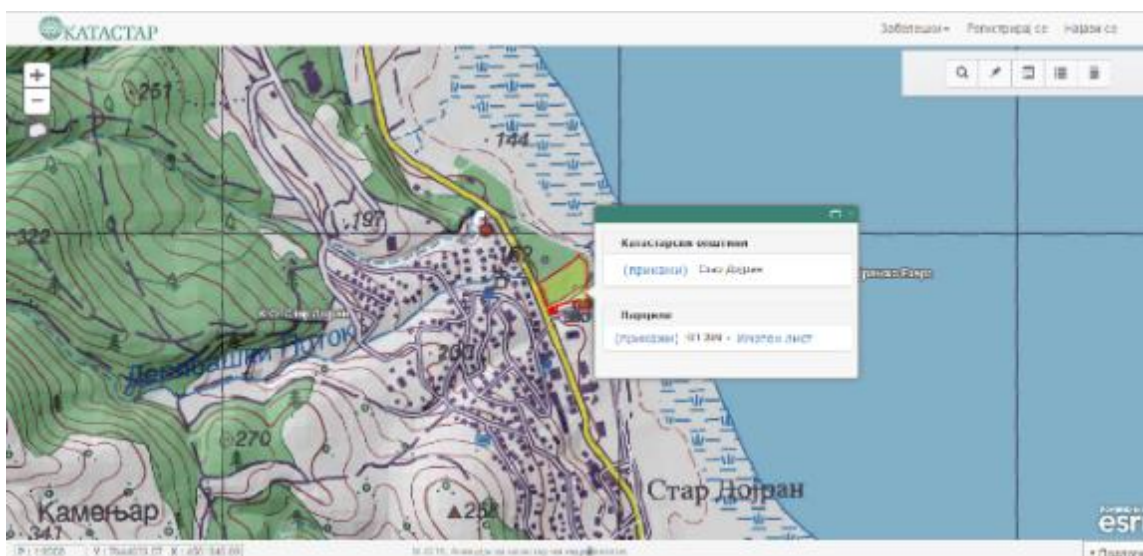


Figure 3 KP no. 399, KM Star Dojran, parks;

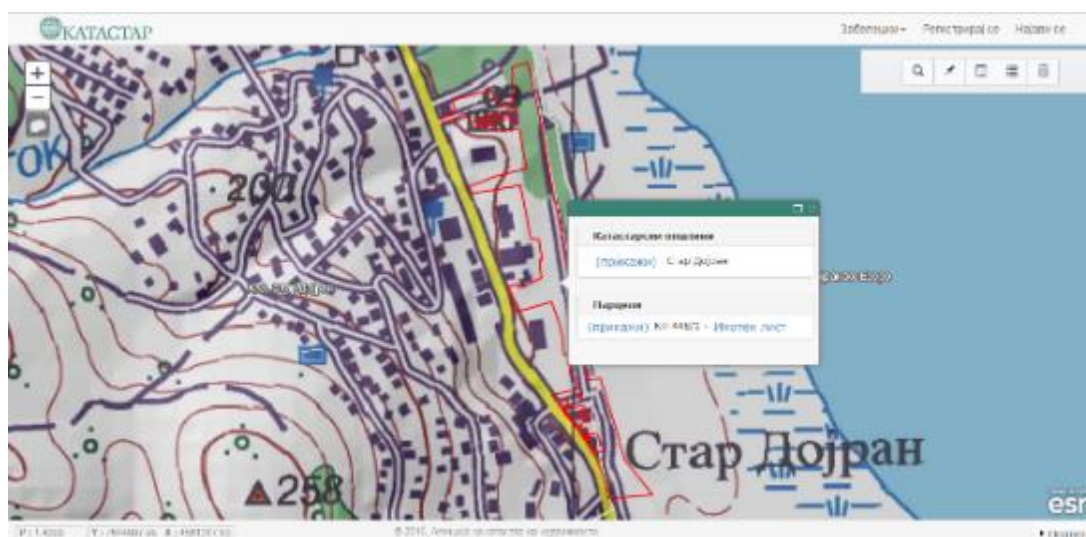


Figure 4 KP no. 448/1 KM Star Dojran, parks;

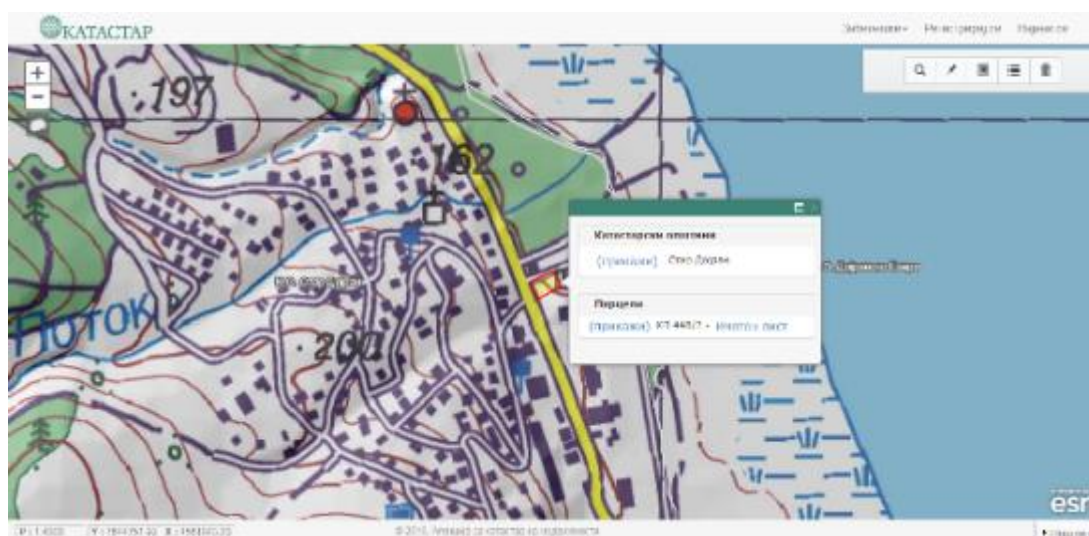


Figure 5 KP no. 448/2 KM Star Dojran, parks



Figure 6 Schematic view on Street no. 2 (access road to Open summer scene)

3.3 Technical and technological description of the activities

As a part of the project activities, the following activities are foreseen:

1. Renovation and reconstruction of the open summer scene

The existing open summer scene is with capacity of 250 visitors, designed for performing various cultural events. The auditorium is an open stage with nine rows of seats. The main and primary purpose of the object is organization of cultural manifestations: concerts, theatre performances, performances of cultural and artistic associations, etc. Below the stage several exhibition rooms are located, exhibiting traditional and modern artwork such as: traditional costumes, jewelry, ceramics, paintings and photographs, sculptures.

The stage of the open summer scene is with dimension of 5,5x10.6 m. Behind the stage, there is a space (part with the stage), intended for the preparation of performers before their acts. This space contains wardrobe, toilets and make-up room.

In the open summer scene, restoration and reconstruction of the existing object and installation of new roof construction, i.e. overhang is foreseen.

The renovation/reconstruction cover several activities that will encompass surroundings and the object itself. The existing wooden and aluminum carpentry is worn out and damaged, so new interior and exterior carpentry with PVC profiles and features is foreseen.

System of PVC profiles:

The profile should be unilaterally foiled (in RAL 7016-antracite grey, from the outside, inside white, on a white basis). Combined with double-glazed glass should satisfy the values ($U_w=1.0 -1.1 \text{ W/m}^2\text{K}$) with an adequate distance between the two glasses (Ψ), to achieve a total coefficient of passage on the heat of the window $U_w= 1.2 \text{ W/m}^2\text{K}$. The window fitting must be movable.

The system to allow installation of a shaft that will allow smooth operation of the window. In the part of the floor treatment due to the current condition, sub-project foresees removal of the existing floor covering from cement screed (with asphalt-concrete construction) and installation of anti-slip tiles from artificial granite on new cement screed. Where necessary, two-component waterproofing between the finished flooring and the cement screed is installed. In the part of sanitary facilities, it is planned to install floor and wall ceramic tiles.

Repair of partition walls, repair of damages and cracks in the existing walls and partitions (gypsum boards) is foreseen, as well as painting of interior surfaces with a dispersive paint.

The exterior facade walls are foreseen to be repaired through the fulfillment of existing cracks and holes with polymeric fillings with cement base and painting on the entire facade surface with facade paint.

Roof Construction – Overhang

With the newly designed roof construction is foreseen installation of spherical overhang, from metal profiles, triangular connected, each other for static hardness. They, between themselves are connected as individual elements with metal joints. Above previous described steel structure, a corroded and perforated steel sheet will be placed. The steel structure itself is mounted on ten steel pillars (with a circular cross-section) and are based on the foundations. The roof construction itself is designed in order to preserve the existing entrances in the building and enable cover and protection of visitors from atmospheric influences.

Equipment

In order to improve the surrounding space, an installation of five jardinières made of concrete with artificial granite tiles, is foreseen. The jardinières will be made of concrete with a dimension of 1.0 / 0.4 / 0.95 m, with a wall thickness (envelope) = 5 cm,

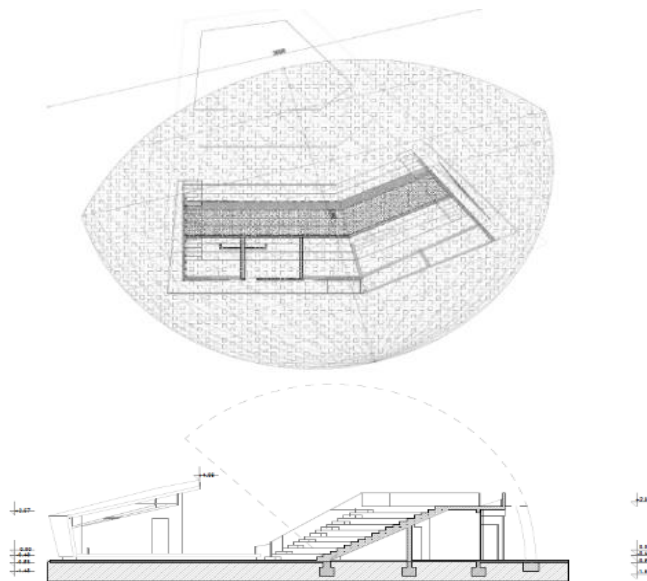


Figure 7 Schematic view of the newly designed open summer scene

2. Arrangement of access road (Street 2) to Open summer scene in Star Dojran

Street-2 is located in Star Dojran, Municipality of Dojran K.O. Sretenovo and it beginning is in the junction with Street-1, and ends up as a dead end with the turning point.

Horizontal solution

The horizontal solution of Street 2 is completely adapted to the excerpt from Local urban planning documentation (LUPD). The street has a length of 98.10 m. The horizontal axis consists of 3 elements: 2 directions and 1 round turn with the radius: $R1 = 83.25\text{m}$. The width of the cross-section of the Street-2 is defined by the excerpt of LUPD and it is:

- traffic lanes $2 \times 3.25 = 6.5\text{m}$
- sidewalk $2 \times 1.5 = 3.0\text{m}$
- total of 9.5m

The pavement structure for Street -2 is as follows:

- AB 11 d = 4.0 cm
- BNS 22 d = 6.0cm
- Tampon from crushed stone material d = 35.0cm

The structure of the sidewalk is as follows:

- Behaton plates d = 6.0cm
- sand d = 3.0-5.0cm
- Tampon from crushed stone material d = 20.0cm

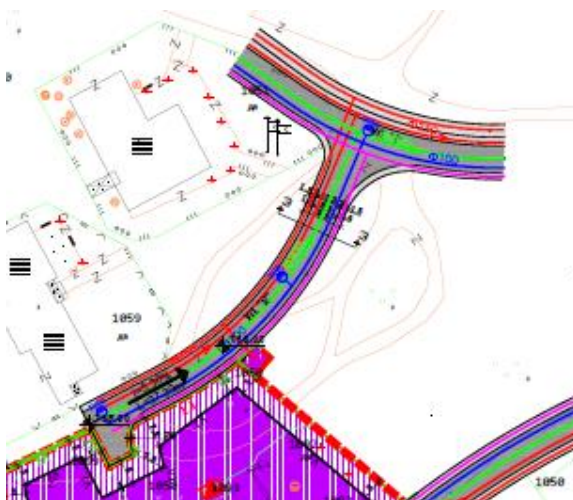


Figure 8 Schematic view of the Street 2

3. Landscaping and horticultural arrangement of green recreational zone - City park Dojran and arrangement of the space around the Open summer scene

This activity covers landscaping and horticultural arrangement of existing green recreational zones in four locations in the city Dojran.

- Park 1: around the municipal building

At park 1 is in the immediate vicinity of the municipality building, new footpaths will be built in order to provide a communication throughout the whole park and the current built-up contents (sports terrains and recreational facilities). On several locations is foreseen installation of several gazebos from pinewood placed on surface with paver elements.

In addition, the installation of elements for two children's playgrounds (Figure 11) made of pinewood and metal, placed on concrete basis with dimension of 14x15 m. On the concrete basis, laying of protective rubber pad is envisaged. Around the playground, is planned construction of a walking path with a width of 1m covered with paver elements.

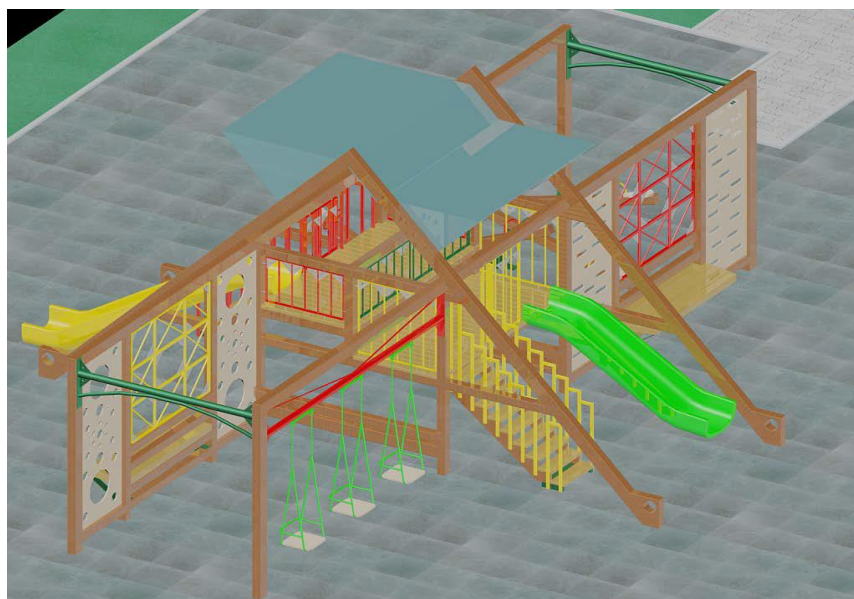


Figure 9 A preview of the foreseen children's playgrounds

In the park 1, tables and benches, as well as two replica wooden bridges, made from pinewood are also planned to be installed. At the beginning of the park to the existing parking lot the construction of pet's playground fenced with a 2D metal frame, with wood elements is planned (scheme given on figure below).

- Park in front of hotel Romantik

In the park 2, located in front of hotel Romantic children playground, next to the existing one is foreseen. New children playground will be same as the one in park 1, near the municipality, placed on concrete basis, covered with protective rubber. For connection of the quay with the street a pedestrian path with paver elements is foreseen, installation of gazebo and space for social games are also foreseen.

- Next to hotel Romantik

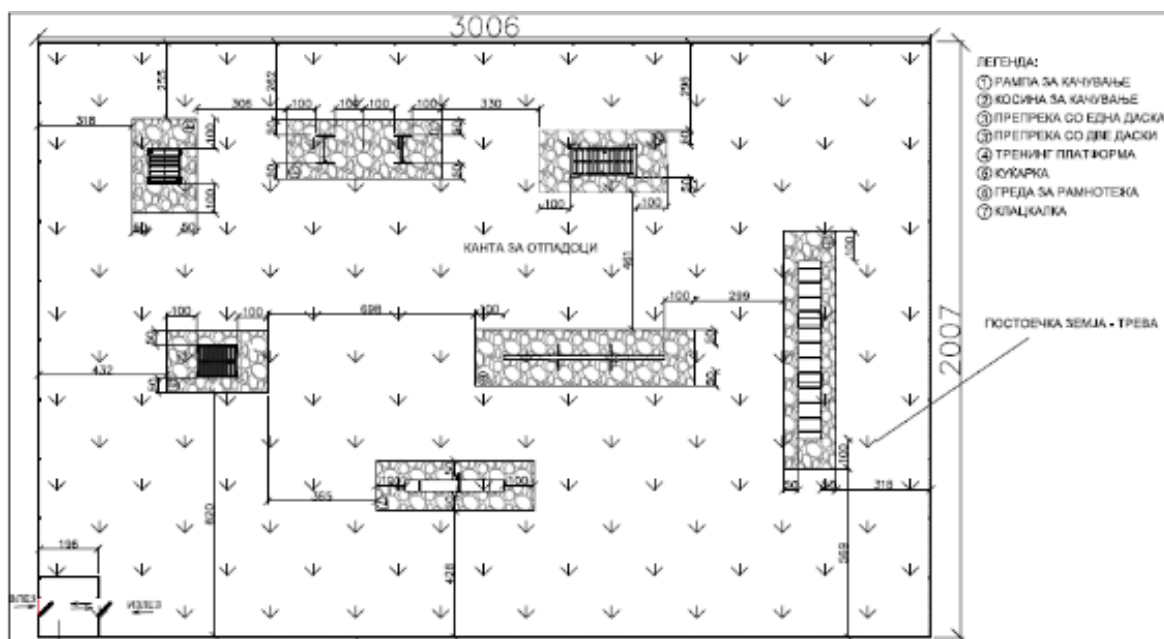
In the park 3, next to the hotel Romantik construction of pedestrian path from paver elements with direct connection of the streets with a quay, for easier communication of the pedestrians from the streets to the lakefront quay is foreseen.

Also, next to the pedestrian path construction of children playground (Figure 7), on concrete basis 14x15 m, covered with protective rubber cover is foreseen. Around the playground, the construction of a pedestrian track with a width of 1m was covered with paver elements.

- Around existing amphitheater

In the park 4, around open summer scene is foreseen placement of paver elements for construction of mini-square and pedestrian path.

Figure 10 Schematic view of the pet's playground



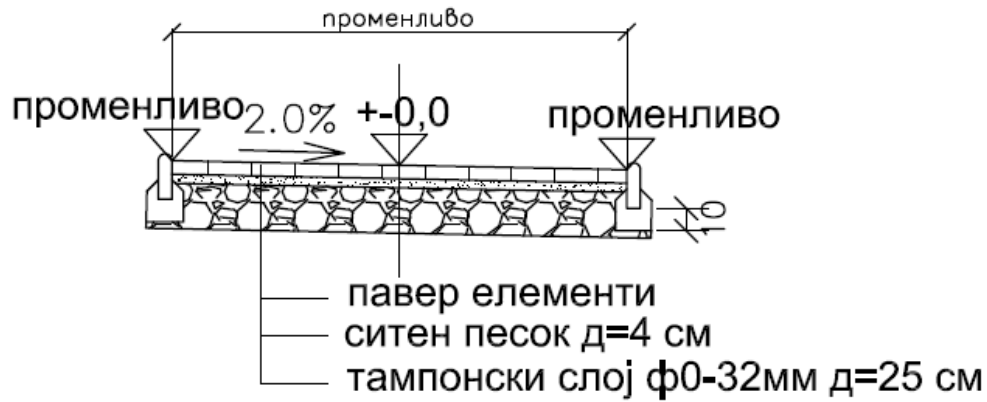


Figure 11 Schematic view of the paver elements

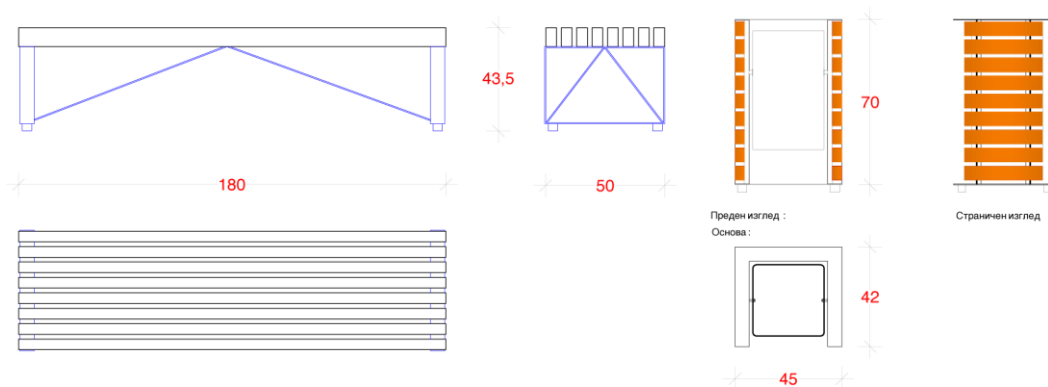


Figure 12 Schematic view of the benches and waste bins

In all parks, the part that will not be covered with paver elements, will be covered with humus and seeded with grass. Here must be emphasized that the humus that will be used must have local origin from Dojran catchment area and the plant species that will be planted must be autochthonous species from Dojran region.

4. Basic data

The planned activities of the subproject "Dojran - tourist pearl of Southeast Macedonia", are on the territory of the Municipality of Dojran.

Municipality of Dojran

Dojran covers an area of 132 km² and is located in the southern part of the Republic of Macedonia, beside the Macedonian - Greek border. The municipality is located on the shores of Dojran Lake, through which the municipality borders the Republic of Greece from the eastern side, located between the mountains Belasica (1883m) from the north, Krusha mountain (860m above sea level) from the east and Karabalia (697m.) from the west. The diameter of the lake is 9 km in length and 7 km in width. Dojran is distanced from Skopje 166 km, from Gevgelija 38 km, from Strumica 45 km, from Thessaloniki in Greece 81 km. The nearest airport is Thessaloniki 100 km away, while the distance from the Skopje airport is 141 km. The nearest port is the Thessaloniki port in Greece, which is 81 km away. The distance from the nearest railway is 38 km and is located in Gevgelija.

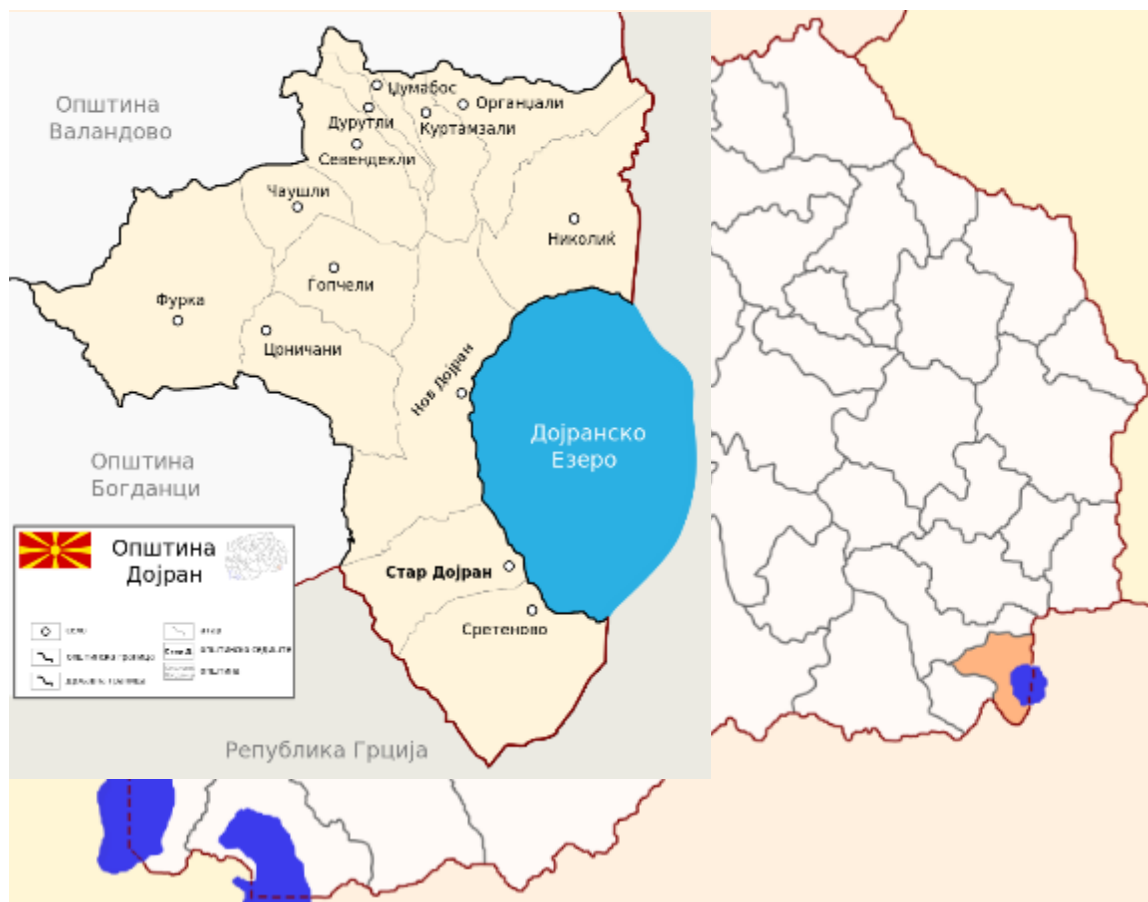


Figure 13 Municipality of Dojran within the Republic of Macedonia and settlements in the municipality of Dojran

Relief characteristics

The area of the municipality is predominantly hilly. On the west coast of the lake lies the plateau Kalatepe with an altitude of 691 meters. In the northwest, Asanisko Pole raises slightly, which through the v. Nikolic spill over into a fertile valley. In the northwest above Aslansko Pole rises the hill Boska with an altitude of 720 meters and the mountain Belasica, and on the east are the slopes of the Krusha Mountain, which very slightly go down to the lake, creating very fertile areas. The lowest part of the valley is in the south, near the settlement Kara-Dojran in neighboring Greece.

Geological characteristics

Dojran Lake and the wider area are located at the border sections of two large geotectonic units, ie. on the border between the Serbian - Macedonian massif in the east and the Vardar zone in the west. The terrains of this region are built from the Precambrian, Paleozoic, Mesozoic upper ego and Neogene quartens.

Hydrogeological characteristics

Hydrogeological characteristics in the drainage area of the Dojran Lake are of great importance for the hydrological regime, because much of the water that flows and leaks from the lake takes place underground. From the hydrogeological research carried out so far in Dojran area and wider, hydrogeological interpretation of the hydrogeological map were prepared. Hydrogeological mapping of the Republic of Macedonia is based on the lithological-tectonic structure of the terrain, the structure of the porosity and the filtration properties of the rocks. Given the criteria of the region, two basic types of hydrological environments are distinguished:

- Waterproofs divided into three groups: unbound quarterly sediments, solid green and similar rocks and carbonaceous rocks, and
- Not waterproof rocks are the most vulnerable: diluvial sediment, white granite, sericite-chlorite shale, Eocene conglomerates, and others.

Bearings of groundwater - aquifers: From the aspect of the hydrogeological and techno-economic values of the Dojran region, 4 types of aquifers of practical and thematic significance are identified: aquifers in lake sediments, aquifers in proluvial sediments, aquifers in marbles and a geothermal water zone.

Tectonic characteristics

The wider area of the Dojran basin is characterized by a complex tectonic structure, created in several stages and phases. The processes of these tectonic phases are preserved by collecting and removing various rock complexes. The more prevalent stages are the Precambrian, Caledonian-Hercene and Alpine. Traces of the Precambrian tectonic movements

appear on Belasitsa, where the gneisses were collected in the antequinal and in the Vardar zone, represented by the Bogdanec anticline.

The Caledonian-hercene tectonic stage is strikingly expressed by the strong accumulation and displacement of the paleozoic rocks extending in the direction Northwest-Southeast. The Alpine stage is represented by four tectonic phases, which gave the main structural features of the Vardar zone.

Climatic characteristics

The territory of Dojran due to the openness of the valley to the south is under the climate influence of the Gulf of Thessaloniki, which flows along the valley of the river Vardar and the channel Goljaj. In general, the climate is characterized by warm and dry summers expressed in high temperatures and mild and humid winters. Daily temperatures above 26° C in the Dojran area occur over 120 days a year.

The average annual duration of solar radiation is 2440 hours. Average annual temperature is 14.2° C. The coldest month is January, with an average temperature of 3.6° C, while the warmest month is July, with an average temperature of 24.7° C. The absolute annual minimum temperature is - 13° C in January (the highest value of the absolute minimum temperatures in the Republic of Macedonia) and the absolute annual maximum temperature is 43° C in July. There are 118 summer and 29 tropical days on average. From this it can be concluded that the Mediterranean climate influence is quite pronounced especially during the winter period.

The average annual water temperature in the Dojran Lake is 15.8° C and is similar to the air temperature. The water has the lowest average temperature in January and February, when the coast is most commonly frozen and in 2002 the whole lake. The water is warmest in July and August with an average temperature of 24.4° C.

This area is characterized by the amount of rainfall caused by the Mediterranean climate impact, mostly in November, 88 mm, and at least in July, 33.5 mm. The average annual rainfall is 682 mm, which is an average of 77 rainy days or an average of 8.8 mm per rainy day. In some years, it deviates to a wide range of average values, with the most rugged year being 855 mm and the driest with 467 mm. The greatest annual rainfall was observed in the period 1954 - 1957 and 1979 - 1982, and as the driest period from 1998 - 1994 and 1996 -2002. In the period from 1951 to 2000, it is noticeable that precipitation has a downward trend.

In the Dojran basin, the Northwest wind prevails over the whole year, with an average annual frequency of 319 %, with an average annual speed of 3.8 m/s and a maximum annual speed of 26.4 m/s. After it is, the eastern wind with an average annual frequency of 89 %, with an annual average speed of 2.6 m / s and a maximum annual speed of 22.6 m / s, is expressed. Besides the good thermal properties, Dojran Lake is also characterized by very large amounts of dissolved salts, 274.5 mg / l. It is actually the richest lake in Macedonia with salt. The water

contains mostly chlorides (31.0 mg / l), magnesium (19.2 mg / l), dry residue (CaCO_3 - 183.0 mg / l).

Hydrographic characteristics

Dojran Lake: Dojran Lake is located on the border between the Republic of Greece and the Republic of Macedonia. The surface of the lake itself at a level of 146 m asl. is 42.74 km². One third of the lake is located on the territory of Greece, with an area of 15.92 km² (37.46%), and to Macedonia belongs to 26.58 km² (62.54%).

The basin of the Dojran Lake covers an area of 270 km², of which 190 km² (about 70%) belong to the Republic of Greece and the rest of the Republic of Macedonia.

The natural values of the Dojran Lake were recognized by the scientific and expert public in Macedonia and as a result, the lake was declared a "monument of nature" - the third category of protected area according to the World Conservation Union (IUCN). The values that characterize the lake primarily relate to the great diversity of invertebrate fauna, algae, and also fish. In terms of biodiversity, Dojran Lake has a special significance due to aquatic and marshy macrophyte vegetation in its coastal area. According to the Strategy for protection of the biological diversity of the Republic of Macedonia and the action plan, this type of habitat is of priority importance for Macedonia and should be protected. The average depth is 6.7 m and the largest is 10 m. In the period before the fall of the lake level, the surface of the lake (148 m above sea level) was 42.5 km², while today it is 32.5 km².

In 1955 the water level was high (23 cm higher than the maximum level proposed since 1940). An interstate agreement was signed between the Government of the FPRY and the Government of the Kingdom of Greece on June 9, 1956 for undertaking measures due to the high level of water. The Yugoslav side was only interested in the high-water level of the Lake to create no problems in the specific way of fishing and not to flood the agricultural areas that were small at that time. While the views of Greece were clear: from the lake to irrigate as many areas outside the drainage, that is, the field Dojrani - Kristonia, providing water in the vegetation period, and with exceptionally high-water level in the winter period and for the production of electricity.

For watering and other needs from the Greek side, the maximum utilization of water in the amount of a water column of 1.2 m (from the highest lake on the lake 146 m asl and the lowest 144.80) is agreed.

By 1975, the water level was mainly maintained within the framework of the Treaty, 4 cm close to the minimum level. From 1976 to 1987, the level of the lake was almost below the minimum agreed level, although the average precipitation was 648 mm, and the vegetation period was 278 mm, but the evaporation of the lake was greater (over 800 mm).

In the period from 1988 to 2000, the level of the lake was constantly decreasing and almost every year a lower absolute minimum was observed. Because of the loss of water, the lake reached the lowest point, (3.88 meters below the zero point). This, along with the previously lost water column above the zero point (2.40 m), means actually reducing the water

column of the lake for a total of 6.28 m. Such a loss of water, for a lake with a maximum depth of about 10.0 meters, is very large and in fact is equal to catastrophe. Such low water level led to sudden and unwanted changes in the lake ecosystem, that is, about the flora and fauna in the lake.

The reduced volume of water led to an increase in water temperature and in the lower layers of the water column, thereby intensifying the processes of eutrophication and extinction of the lake as a specific ecosystem. In fact, reaching the lowest point (3.88 m below the zero point), the total volume of water of about 262.0 million m³, as far as the agreed maximum, is reduced to only about 60-70 million m³, a loss of about 200 million m³ of water.

Biological diversity

Dojran Lake is a eutrophic lake due to the large production of organic matter. Animal world is represented by invertebrates (unicellular animals, spongers, worms, mollusks, arthropods, insects, etc.), as well as representatives of vertebrates (fish, amphibians, reptiles, birds and mammals). There are 12 fauna endemics recorded in Lake Dojran. Of the 15 fish species, 1 species represents a local endemic. Some invertebrates (especially dragonflies) and several bird species are listed on CORINE. The Dojran Lake is known for its traditional way of fishing with the help of birds in reed fences, the so-called Mandri.

Of the aquatic plants, the most common are: *Ceratophyllum demersum*, *Najas marina*, *Potamogeton perfoliatus*, *Myriophyllum spicatum*, *Vallisneria spiralis* etc. Species *Najas minor* is limited to the shallow southern edge of the lake, while *Myriophyllum spicatum* is present almost in all communities, but it develops most extensively at depths of 40 cm, forming huge underwater meadows. *Najas marina* and *Potamogeton perfoliatus* are developing almost equally lushly.

Species *Centaurea rificidula*, *Verbascum doiranense*, *Verbascum burgeffi* and *Astragalus thracicus doiranensis* are described by localities within or near the Dojran basin.

The microflorinal component of Dojran Lake until 1988. constituted 257 phytoplankton and periphyton taxa. The role of the major organic matter evolution in the lake ecosystem has the planktonic algae - phytoplankton - which is the starting link in the chain of nutrition in the lake.

The Dojran Lake was distinguished by a very rich and diversified Periphyton, as a special ecological association. The decline of water from Lake Dojran, which has been displaced by changes and ecological parameters, leads to a reduction in the quality of the species composition

The biodiversity of the Fauna of Dojran Lake and Valley is complex, both from taxonomic and from ecological aspect. Representatives of the type Protosa are very poorly explored. During the research, presence of the representatives of the genus Difflugia, typical dwellers of mosquitoes and wetlands was registered.

Other registered species of protozoa in the lake belong to the genera *Epistylus* and *Vorticella*. These are sedimentary, ecto - commensal forms which are determined on the co -

epididal calcanoid *Eudiaptomus gracili*. This calanoid first appeared in the planktonic community of Dojran Lake 10 years ago. Unique data related to parasitic protozoans are presented by Hristovski (1999). He identifies the following three types:

- *Myxobolus cyprini*
- *Thelohanellus nikolskii*
- *Trichodina* sp

Of the Porifera type (sponges) in the Dojran Lake, the *Spongillidae* family is registered, the presence of three species, including the endemic Dojran sponge *Spongilla carteri dojranensis*. Within the type *Plathelminthes* (flattened worms) are indicated representatives of the classes *Turbellaria* and *Cestoda*. The Mollusca type in the Dojran Lake is represented by species of the two classes of Gastropoda (snails) represented by 21 species, among which Dojran endemic snail *Graecanatolica macedonica* and Bivalvia (shells), five species among which the most striking is the type of *Dressena polymorpha*.

From the type of Prunes Worms (Annelida) in the Dojran Lake, the representatives of the classes Oligochaeta and Hirudinea, as well as Branchiobdellidae, are widely recognized, of which 4 species are accepted as Dojran Endemics. By reducing river crayfish in the waters of Dojran Lake has a negative effect on the survival of the four Dojran endemic branchiobdellids. The Oligochaeta class is represented in 22 species in the Dojran Lake, including the Dojran endemic species *Isochaeta dojranensis*. Representatives of Arthropoda type, Lake Dojran and Dojran valley are represented by the largest number of species. The subtype Crustacea, richly represented in the waters of the Lake, the Copepoda class is with all three rows of freshwater copepods, the endemic Dojran cyclopoid *Microcyclops varicans dojranensis*. The Tracheata subtype is the most numerous with species within Arthropoda.

There are 39 species registered in the order Odonata. From representatives of the order Prekoptera, the species *Rhabdiopteryx dojranensis* is a Dojran endemic. There are 526 species of Lepidoptera in the Dojran Basin and Dojran valley, which is a huge concentration of diversity in a limited territory. From the order Diptera in Dojran Lake is represented with species of the family Chironomidae, registered 51 species. They play an important role in the benthic community of the Dojran Lake.

Representatives of the Vertebrata subtype are present in the species Chordata in the fauna of the Lake and the valley. The Vertebrata constitute the most important group in zoology, both in terms of the degree of complexity of its structure, as well as the richness and the differentiation of the forms.

Within the eco - system Dojran Lake the Amphibia class is represented by 10 species. The species *Rana balcanica* and *Triturus karelini*, as well as the *Pelabates syriacus balcanicus*, *Bombina variegata scarba* and *Triturus vulgaris graecus* are Balkan endemics.

There are 23 species identified from the Reptilia class for the Dojran Lake and the Kotlina. *Emys orbicularis hellenica*, *Cyrtodactylus kotschy skopjensis*, *Ablepharus kitaibeleii stepaneki* and *Podarcis ergardii* are Balkan endemites.

According to the conducted analyzes, the presence of several species found on the IUCN Red List of Species under threat at global level (2016) was established:

Aquatic macroinvertebrates: 8 species: the snail *Graecoanatolica macedonica* has a status of extinct (EX) species. The species *Unio crassus*, *Astacus astacus balcanicus* and *Sympetrum depressiusculum* are vulnerable (VU), while 4 species: *Dreissena presbensis*; *Anodonta cygnea*; *Hirudo medicinalis* and *Potamon ibericum* have a near threat (NT) status.

Terrestrial invertebrates: 3 species: three significant butterfly species are listed. *Pieris balcana* and *Lycaena dispar* are listed under categories LC and LR / NT, while *Proserpinus proserpina* is classified under the category - DD (without sufficient data).

Amphibians and reptiles: 11 amphibian species are least concern LC, 1 reptilian species is listed as vulnerable (VU): *Testudo graeca*, 2 reptilian species are near threat NT: *Emys orbicularis*, *Elaphe quatuorlineata* and 19 species of reptiles least concern LC.

Mamals: 11 mamalian species are least concern LC (*Suncus etruscus*, *Crocidura suaveolens*, *Crocidura leucodon*, *Apodemus agrarius*, *Mus macedonicus*, *Sciurus vulgaris*, *Lepus europaeus*, *Erinaceus concolor*, *Canis lupus*, *Vulpes vulpes*, *Mustela nivalis*, *Felis silvestris*).

Birds: Out of 96 species, 1 species is endangered (EN): *Oxyura leucocephala*, 3 species are vulnerable (VU): *Branta ruficollis*, *Aythya ferina*, *Pelecanus crispus*, 2 species are near threat (NT): *Aythya nyroca*, *Vanellus vanellus* and 90 species are least concern (LC).

Protected area

The Dojran Lake has a regulated status as protected area since the time of the SFR Yugoslavia, through the Law on Protection of Ohrid, Prespa and Dojran Lake from December 23, 1977.

This law was in force until the adoption of the Law on Nature Protection (2004), which obliges the Ministry of Environment and Physical Planning (MoEPP) to re-declare the protected areas in the country. With the Law on Nature Protection in accordance with Article 92, strict nature reserves, national parks and nature monuments are declared protected areas by special laws. Thus, in 2011, the Law on the Proclamation of the Dojran Lake for the Monument of Nature was adopted (Official Gazette of the Republic of Macedonia No. 52/2011).

- The significance of the Dojran Lake is perceived especially from an aspect that is recognized as important bird area (migratory and wintering) in global and European contexts. Its significance is especially confirmed by the inclusion in the international networks of significant habitats and areas important for protection, i.e. Dojran Lake is included in the Emerald network of significant areas for protection in the EU (2004), Berne Convention
- Dojran Lake is listed on the Macedonian list of significant areas for plant life (2004)

- Dojran Lake is part of the Balkan Green Belt (IUCN initiative, 2004)
- The Dojran Lake is recognized by the Ramsar Convention as an important water source habitat of international importance, especially for water birds (2007)
- Dojran Lake is an Important bird area (BPP), according to Bird Life International (2010)
- Dojran Lake is identified as a Natura 2000 area, according to the EU Birds and Habitats Directives

Locations of project activities are beyond the boundaries of the protected area, but in some places the boundary line passes right next to them. The location of the recreational zone in City Park with its north, northeast side, borders with the protected area. The Open Summer scene with its north side is on distance of 20 m from the border line of the protected area. The street 1, from which begins the street 2 is border of the protected area. The part of the protected area Monument of nature Dojran Lake, which borders with the project locations is belonging to the part that has degree of protection: area of sustainable use (Figure 14).

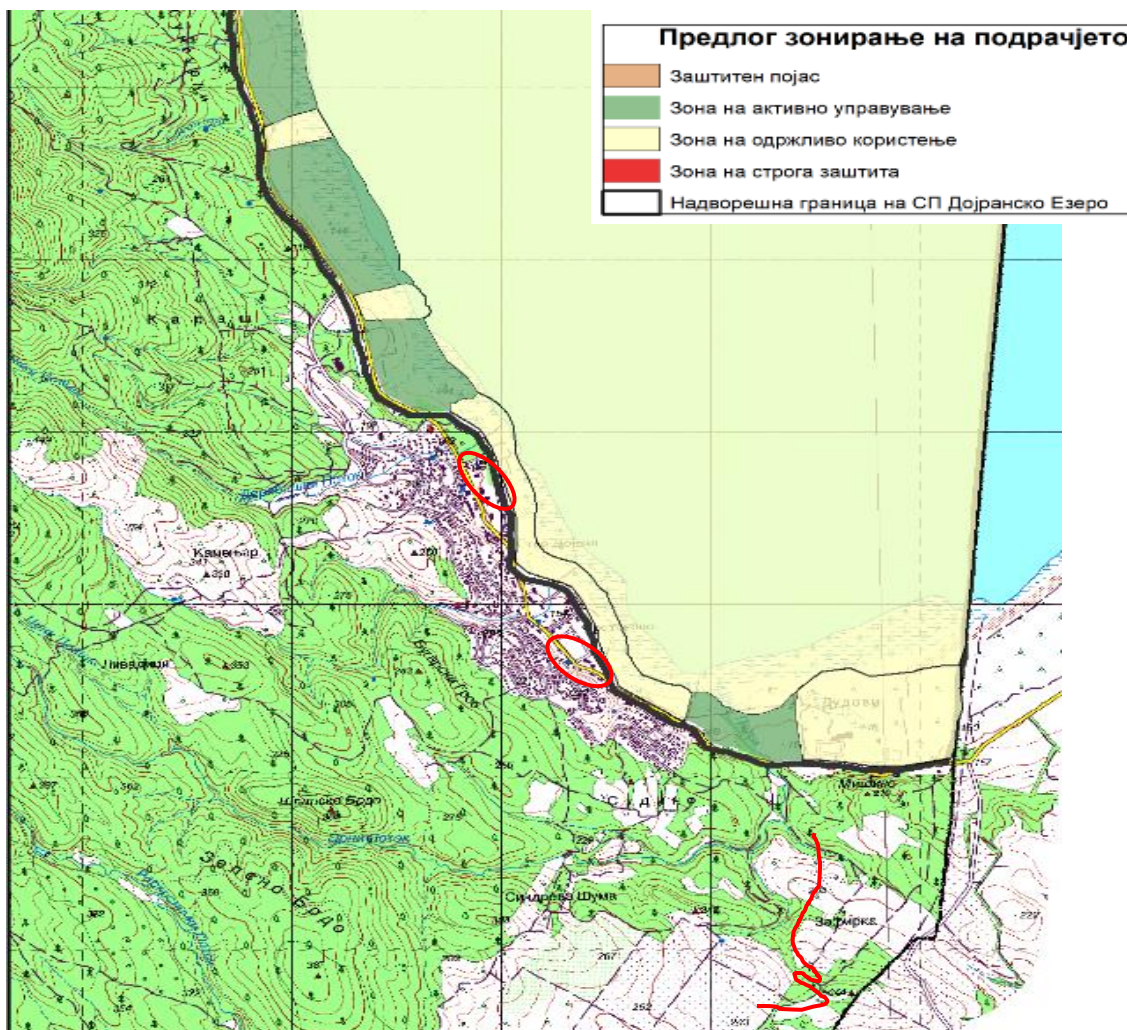


Figure 14 Locations of the project activities (red circles and line) and border line of the Dojran Lake protected area (black line)

Demography

The municipality has 3,426 inhabitants in 13 settlements, two of which are resettled. Thanks to the lake and all the amenities that it provides, in Dojran has built over 600 weekend houses and 150 garrisons (in two complexes), whose owners spend most of the year in Dojran, but are not residents of the municipality of Dojran. Only for the Easter holidays, Dojran is visited by over 10,000 guests and even more one-day tourists. During the summer season, the current state of the lake's water has a real chance of reaching 100,000 overnight stays.

Table 1 No. of residents in the municipality of Dojran

Total population according to the Census 2002	3426
Number of settlements	13
Star Dojran - Sretenovo total inhabitants	678
New Dojran	1100
Furka	570
Nikolik	541
Crnicani	221
Gopceli	155
Durutli	16
Kurtamzali	121
Organdzali	21
Sevendakli	3
Djumabos	1
Causli	/

Table 2 Total population of the Municipality of Dojran by nationality

Municipality	Total	Macedonians	Albanians	Turks	Roma	Vlachs	Serbs	Bosniaks	Other
Dojran	3426	2641	17	402	59	3	277	2	25

Economy in Municipality of Dojran

Due to the geographical position, natural resources, culture and tradition, as well as the existing capacities, the main activities in the municipality are the tourism industry, viticulture, gardening and tobacco growing. Development trends refer to the development of livestock, metalworking, construction and other industries.

The main holders of the economy in the municipality of Dojran are:

- DPPT "AD Dojran" New Dojran with basic activity Vineyard - Fruit production, founded in 2000. It has 3 large plantations: Asanli, Vladaya and Furka. The main products of this company are table and wine grapes with an area of 135 ha, almonds (36 ha), olives (3 ha), cabbage (5 ha), grain (50 ha). In total, 23 employees are employed on a regular basis and an additional 20 during seasonal work.
- "Megaplan 2001" Gevgelija in Nov Dojran was founded in 1992 with the main activity production of cardboard packaging, drip irrigation systems, and in the last six years the company has been engaged in the production of vegetables from greenhouses on an area of 6 ha. There are 35 employees in total.
- "Agrolozar" from Bogdanci has 400 ha vineyard plantations and 50 employees, but during harvesting, additional 200 more workers engage in six seasonal months a year.
- Ltd. Export Import "Velder" from Nikolic is a factory for the production of wire and wire products. The production capacity is 60,000 tons of reinforcement iron and 15,000 tons / year of network and carriers with a total of 160 employees.
- Factory for shock absorbers "STD" DOO from Novi Dojran was founded in 1983 as a craft shop, and in 1995 turns to "STD" LLC Export Import metal processing industry for production of auto parts with a capacity of 15,000 pieces of shock absorbers and other machine parts annually with a total of 20 employees.
- "KM Company" from Novi Dojran was founded in 1995 and is engaged in the production and processing of olives and the production of olive oil, as well as with the

production of planting material (olives, figs). There are 2 full-time employees and 20 seasonal workers.

- By the Government of the Republic of Macedonia, in 2005, the fishery fund from Dojran Lake was given for five years use (concession) by the company DPTU "NOTA DTH DOOEL" export-import - Star Dojran. The control over the use of the fish fund by the concessionaire is carried out by the Ministry of Agriculture, Forestry and Water Economy.

5. Environmental impacts

Realization of the planned activities of the subproject "Dojran - tourist pearl of Southeast Macedonia" will cause certain impacts on the surrounding environment.

Preparation of this Plan is in order to locate and determine the existence of some harmful effects on the environment as a result of the project activities that will take place during the realization of the planned project activities.

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

- Construction phase
- Operational phase

5.1 Emissions

In the construction phase the following emissions are expected:

- Fugitive dust emission from reconstruction activities;
- exhaust gases from construction mechanization;
- communal waste, construction waste and excavated soil;
- waste communal and storm water;
- noise from construction machinery;

In the operational phase, the following emissions are expected:

- exhaust gases from mobile sources (vehicles);
- noise;
- waste communal and storm water;

- communal waste;

5.1.1 Air emissions

Air pollution is caused by emission of pollutants from mobile and static sources, also by emissions of bio-chemical substances generated in the process of fuel combustion. Data on the distribution of polluting substances in the environment and changes in their concentration over time, as well as the impact of air quality on living forms are also important indicators in the process of assessing the impact on air quality.

Construction phase

During the phase of realization of the projected projects activities of the subproject "Dojran - tourist pearl of Southeast Macedonia" in the air will appear:

- Fugitive dust emission from reconstruction/renovation and landscaping works;
- Emission of exhaust gases from construction machinery.

The dust generated by mechanical interventions of transport and construction machinery and combustion of fuel during works, affects the near and distant environment depending on the size of the particles (aerodynamic diameter) and conditions during activities, primarily because of the speed of the wind (which affect their distribution - transmission). The impact of fugitive dust emissions generated during the construction phase will be strengthened along with emissions from construction machinery. These impacts are expected to occur during the reconstruction of the two streets, construction of the open summer scene and installation of urban equipment parts (including dismantling of existing playground parts and removal of old walking paths) in the arrangement of the City park 1 Dojran.

Emissions of exhaust gases will be generated by construction machinery.

The most common pollutants produced by the exhaust gases are SO₂, NO_x, CO, PM₁₀, 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 their 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 do not pose a threat to air quality.

During the construction activities, the most sensitive receptors that will be exposed to emissions in the air will be employees, the nearby neighborhood and the biodiversity near the locations where the project activities are foreseen. The impact on air quality can be assessed as short-term, local, direct, with a low intensity.

Operational phase

During the operational phase, the impacts on the air will be present during the course of the traffic in the two newly designed streets, expressed through emission of exhaust gases from combustion of fuels in internal combustion engines. It is known that 1 liter of gasoline receives about 10 m² of harmful gases that negatively affect the human organism.

In the operational phase, after the reconstruction of the streets, the amount of emitted exhaust gases will increase, but this quantity is not expected to drastically change the quality of air.

5.1.2 Water pollution

Construction phase

Water pollution can be physical, chemical and biological. Physical pollution is manifested by the presence of solid particles of debris on the ground, sand, which originate from construction activities. Physical contamination of liquid substances is the presence of fats and oils. It can create a film that will prevent the oxygen supply in the water stream, which prevents the normal development of aquatic flora and fauna.

Chemical pollution occurs as a result of dissolving the present polarities in the air. These pollutants can result from exhaust gases from construction mechanization, emissions from pollutant components from industrial and processing facilities, dissolving certain components of the surrounding land and plant waste. Chemical pollution can be manifested in all variations from strongly strong to strong acids.

Biological contamination is a consequence of the decay of organic substances that serve as foods to various microorganisms. They can be the result of indiscriminate amounts of biodegradable waste from the preparatory phase.

The locations predicted for stay of workers and for the maintenance and cleaning of the mechanization are potential pollutants area sources, through creation of fecal wastewater, solid waste and by improper maintenance and cleaning of the mechanization.

Pollution of surface, groundwater and soil can occur in case of accidents such as leakages of fuels, emulsion and oils. The nearest water body near the sub-project location is Lake Dojran.

Construction activities can cause pollution expressed through creation of construction waste from concrete removal or surplus or other building materials used (asphalt, bituminous emulsion). Also, an inappropriate storage of construction materials, fuels, oils etc., in case of leakage, can cause impacts on the Dojran Lake. This occurrence can be with big significance for the protected areas of Dojran Lake that are near to the sub-project locations.

Operational phase

In the operational phase, impacts on surface waters of the Dojran lake are not expected. The only possible impacts on the waters are from the atmospheric waters from street 2,

therefore it is necessary to be connected to the stormwater drainage of the municipality of Dojran (not part of this project).

5.2 Waste generation and management

Proper management of generated waste, according to generally accepted international norms and national legislation will reduce the impact of waste on surrounding environmental mediums.

Construction phase

During the activities of the subproject "Dojran - tourist pearl of Southeast Macedonia" communal waste from engaged workers, construction waste from activities from reconstruction of the Open Sumer Scene and installation of the urban equipment (benches, tables and 4 gazebos) in City park, waste from excavation (earthen material) from excavation activities during construction of the two streets will be generated, as well as occurrence of plant waste in preparatory activities and during arrangement activities in the City Park.

Waste generators are obliged to avoid generation of waste and to reduce the harmful effects of waste on the environment, human life and health.

For proper waste management, waste produced by workers, and inert waste that cannot not be reused, must be disposed of at a legal landfills designated from Municipality of Dojran for disposal of such types of generated waste. The transport of the generated waste will be obligation of the Contractor for construction activities, or the Contractor should have a contract a municipal utility company or other legal entity with permits for transport and disposal of generated waste to a licensed landfill.

In this phase, hazardous waste generation is not expected, but in case of generation of this type of waste, it is necessary to be collected and transported by a company specialized in the management of the particular type of hazardous waste

Types of waste generated during the construction activities for project activities, as well as the manner of its treatment are given in the following table:

Table 34 Types of waste and quantities

Phase	No	Type of waste	Number from the list of types of waste (Official Gazette no. 100/2005)	Quantity of waste annually expressed in tons or gallons	Method of treatment of waste (processing, storage, transfer, disposal, etc.)	Name of the legal entity which operates with waste and location where waste is disposed (landfill)
Construction phase	1	Mixed communal waste	20 03 01	Cannot determine	Temporary storage disposal in bags, the disposal containers located adjacent to project location and licensed landfill as the final destination	Local communal enterprise

	2	Organic waste (grass, plants, and shrubs)	20 02	in accordance to bill of quantities	Storage location determined by municipality until the final surrender of the municipal LCE	Local communal enterprise
	3	Construction waste	17 01	in accordance to bill of quantities	Storage at an adequate location until disposal of a licensed landfill for construction waste	Local communal enterprise
	6	Earth material	17 05 06	in accordance to bill of quantities	Storage at an adequate location until reuse or disposal of a licensed landfill for construction waste	Contractor
	7	Hazardous waste (if any)	/	The exact quantity cannot be determined	Storage at an adequate location until disposal of a licensed landfill for construction waste	Conclude an agreement with a licensed company to deal with the appropriate type of waste that would occur
Operational phase	8	Mixed communal waste	20 03 01	The exact quantity cannot be determined	Temporary disposal in containers and licensed landfills	Local communal enterprise

Operational phase

During the functioning of the projected content, it is only expected to generate municipal waste from the visitors who used them. At this stage, the municipality through the Public Utility Company "Komunalec - Polin" will regularly and appropriately collect the mixed communal waste and transport it to the appropriate legal landfill for disposal.

5.3 Soil emissions

The impacts on the soil during the realization of the projected project activities will be insignificant, because there is no envisaged expansion of the existing street and traffic was present on the street in the past.

Construction phase

At this stage, the following impacts may occur:

- Emission of pollutant particles present in exhaust gases from construction mechanization and transport vehicles;

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

Operation phase

In the operational phase, the emission of exhaust gases resulting from traffic along the access road is with less intensity and impacts on the soil, because in improving the carriageway, it will reduce its use.

The effects on the soil in operational phase will be continuous, indirect, cumulative, local and of medium intensity.

5.4 Noise and vibration

Construction phase

During the activities for realization of the foreseen project activities there will be an increased level of noise as a result of construction activities for the construction of the foreseen objects.

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.

Meteorological conditions have a major impact on the intensity of noise and airborne shocks. The direction and speed of the wind affect the air shocks, while the sound distribution is influenced by wind speed and temperature, also depends on the height and configuration of the terrain.

The wind makes it to increase the intensity of the sound, that is, increasing the sound intensity is almost always in the direction of the wind. The influence of the wind on the intensity of noise is always greater in winter.

The limit values for the basic indicators for environmental noise are defined in Regulation on limit values of noise level ("Official Gazette" br.147/08). According to the degree of protection against noise limit values for basic indicators of environmental noise caused by various sources should not be higher than:

Table 45 Noise level in areas

Field differentiated according to the level of noise protection	Noise level expressed in dB (A)		
	Ld	Lv	Ln
Area of first degree	50	50	40
Area of second degree	55	55	45
Area of third degree	60	60	55
Area of fourth degree	70	70	60

Legend: -Ld - day (period from 07:00 to 19:00)-Lv - evening (time from 19:00 to 23:00) -

Ln - night (time 23:00 to 07:00)

Areas under the protection level of noise are specified in the Rules for the locations of the measurement stations and metering stations ("Official Gazette of RM" no. 120/08).

- Area with I degree of noise protection;
- Area with II degree of noise protection;
- Area with III degree of noise protection;
- Area with IV degree of noise protection.

According the Rulebook for the locations of monitoring stations and measuring points ("Official Gazette of RM" no. 120/08), the project locations are mostly in Area with I degree of noise protection, which is intended for tourism and recreation, an area near medical equipment and hospital, an area of national parks and nature reserves.

Operational phase

In the operational phase, during the operation of the project activities, for example use of the access street is expected to result in a slight reduction of noise compared to the previous one, as the friction of the tires with the newly installed asphalt will be reduced. No noise is expected from the functioning of the other project elements.

5.5 Biodiversity (flora and fauna)

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

Construction phase

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

Due to the fact that the project activities are not in the territory of the protected area Dojran lake and they are located in urbanized (central) area of town of Dojran, there will be not direct impacts on the living world in and around the Dojran Lake.

Possible impacts on the wild life can occur in the sub-project locations that are in the vicinity of the protected area (City park, Open Summer Scene and Street 2). On these locations most impacted will be the birds that stay on these locations, especially in the nesting period. However, because these localities are in the urban settlement and the scope and implementation period of the envisaged activities, the impacts will be with short term, reversible, local with small intensity.

Operation phase

During the operational phase, no impacts are expected on the protected area.

During the use of the objects that are subject of this document, the impacts on the surrounding wild life will be minimal, or there will be no impacts. In this phase the impacts that can have some significance will be as result of use of the open summer scene (on wild life around the scene due to increased noise levels).

5.6 Social impacts

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

6. Mitigation measures

Mitigation measures are described in this section, and detailed mandatory mitigation measures are provided in a table 6 Mitigation Plan in the chapter 7 Environmental and Social Management Plan.

The contractor must agree to all requirements in order to eliminate the potential for injuries to workers, locals and tourists. All reconstruction activities must be carried out by trained workers.

Parties responsible for implementing the environmental protection program:

1. Contractor (company selected in the tender)
2. Supervision engineer
3. Beneficiary / Municipality of Dojran

6.1 Air

During construction work, following preventive measures should be implemented in order to minimize negative impact on air.

- Avoiding work mechanization in the so-called "idle", for reduction of the exhaust gases;
- Spraying with water to reduce the amount of fugitive dust
- Residents / sensitive receptors will be informed about construction activities and working hours;
- Implementation of regular maintenance of vehicles and construction machinery and occasional repairs in order to reduce leakage and emissions.

6.2 Water

Dojran lake is a protected international water therefore any intervention that can impact the waterbody is strictly prohibited.

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

- Carrying out regular maintenance of vehicles and construction mechanization and periodic repairs according to procedures in order to reduce leakage, emissions and dispersion (during construction). Maintenance and repairs of vehicles and construction mechanization is forbidden on the reconstruction sites/locations.
- Contractor vehicles and construction mechanization use existing access street.
- Careful selection of the location for building material, warehouses / disposal of the construction waste
- The excavated soil should be adequately enclosed to secure its disposal in the aquatic environment (at least 50m from lake quay)
- Prevent hazardous spillage coming from waste (temporary waste storage should be leakage protected and those for hazardous or toxic waste equipped with secondary containment system, e.g. double walled or bunded containers).
- If hazardous spillage occurs, curb and remove it, clean the site and follow procedures and measures for hazardous waste management.

- In the case of any run-off coming from works area possibly contaminated by hazardous substances shall be collected on site to a temporary retention basin and transported to an adequate licensed waste water treatment plant.
- Ensure that water pumped back to natural waterways never exceeds the regulatory water quality standards by regular testing.
- Install and maintain of proper sanitary facilities for workers. The wastewater from these sources should be transported to proper waste water treatment facilities.

6.3 Soil

In order to reduce possible impacts in the soil, it is necessary to be applied the foreseen mitigation measures.

- Careful planning of the construction works in order to reduce the negative effects and ensure the prevention of all impacts in the soil
- Reducing the size of the site due to the minimization of the land that will receive negative impact
- All of the hazardous materials as fuels, lubricants, glues as well as packaging waste and non-inert wastes must be placed in separated appropriate containers (suitable to accept and contain any kind of leakages) located on construction site, protected from extreme weather conditions (rain, wind), especially in the vicinity of the protected area Dojran Lake. The liquid and semi – liquid materials should be kept above a reservoir which have 110% of the amount of the stored material.
- Protection of construction materials and stopping of construction activities in conditions of torrential rains, at all project locations
- All borrowings of gravel and sand, i.e. 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 и 63/16).

6.4 Noise

According the location of the project activities the allowed noise level is 50 dB on the locations of City Park, open summer scene and street 2.

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

- Construction activities can only take place during the daytime (07-19h);
- Construction activities should be planned appropriately to reduce the use time of the equipment that creates the most intense noise;

- During the operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas as possible;
- residents / sensitive receptors will be informed about construction activities and working hours;
- use of best building practices with particular emphasis on noise levels.

6.5 Waste

During the construction works, 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 no.100/05);
- Determination of waste characteristics;
- Containers for each identified waste category are provided in sufficient quantities and positioned conveniently;
- Waste collection and disposal pathways and licensed landfills/processing plants will be identified for all major waste types expected from demolition, renovation and construction activities;
- All of the waste that is generated during the stay and work of the Contractor employees, applying the best management practices, should be collected, transported and deposited in a legal landfill that meets the basic standards in accordance with the legal acts
- Mineral (natural) construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and temporarily stored in appropriate containers. Depending of its origin and content, mineral waste will be reapplied to its original location or reused;
- Proper storage and labeling of waste on places designated for that purpose;
- If the waste has one or more hazardous characteristics, the creator and / or owner is obliged to classify the category of hazardous waste and handle it as hazardous waste, proper store and label in separate containers until handing to authorized company;
- 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;
- The incineration of all waste at site or unlicensed plants and locations is prohibited.
- All construction waste will be collected and disposed properly by licensed collectors and to the licensed landfills (or licensed processing plant).
- The records of waste disposal will be regularly updated and kept as proof for proper management, as designed.
- Whenever feasible the contractor will reuse and recycle appropriate and viable materials. Discarding any kind of waste (including organic waste) or waste water to the surrounding nature or waterbodies is strictly forbidden.
- Collect, transport and final disposal/processing of the communal waste by a licensed company;
- The construction waste should be promptly removed from the site and re-used if possible.

6.6 Biodiversity (flora and fauna)

As there will be no works that include the lake body of water so no direct impacts on the aquatic life in the Dojran lake are expected, still in order to prevent any accidental events following mitigation measures must be implemented:

- There will be no water uptake from the lake or other natural sources in the vicinity.
- Coatings, wood protection agents (e.g. applied to urban and playground equipment) and other agents applied will not be toxic for the aquatic environments.
- There will be no anticorrosion measures applied the site.
- Discarding waste or other materials or liquids to the Dojran Lake is strictly prohibited
- Prevent hazardous spillage coming from tanks (mandatory secondary containment system, e.g. double walled or bunded containers), construction equipment and vehicles (regular maintenance and 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
- Thoroughly inspect all holes and trenches before they are filled.
- Prohibit the collection of firewood from and around working areas.
- Disturbance of animals and collection of plants in the area is prohibited.
- **Large (noisy) works using heavy machinery or/and producing significant noise and vibrations will not be done in the nesting period (especially of IUCN N, VU and NT classified species) as Dojran lake is a RAMSAR and important bird site.**
- The working location will be checked for nests and dens before works commence (a biologist engaged if needed.). In the case of protected/IUCN red book animal presence, nature protection competent authority will be notified.
- Minimal green surface is to be removed. No trees will be damaged or removed during works.
- Greening will use only native plant species. No pesticides or artificial fertilizers will be used in project activities.
- There will be no felling.
- There will be no open fires.

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

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

7. Environmental and social management plan

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

The mandatory mitigation activities are described in Table 6 Mitigation Plan. Mandatory activities for monitoring are given in Table 7 Monitoring Plan.

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

Table 6. Mitigation plan					
Preconstruction phase					
Activity	Expected Environmental Impact	Mitigation measures	Responsibility for Implementing Mitigation Measure	Period Implementing Mitigation Measure of	Cost associated with implementation of mitigation measure
Notification of local population and permitting					
<ul style="list-style-type: none"> - Open summer scene - Street No."2" - Green recreational zone (city park Dojran, parts 1,2, 3, and 4) All works	Possible adverse social and health impacts for the workers and local population as a result of non-compliance with the safety measures	<ul style="list-style-type: none"> • Planning of the time for startup of the project activates. Public is informed of works. • All needed/required permits, opinions and decisions have been obtained (including permission of nature protection competent authority, Ministry of Environment and Spatial Planning, etc.) before the works commence. • Environmental and civil inspections and nature protection competent authorities have been notified of works before they start. 	Participants related to the performance of construction activities (Municipality of Dojran, Contractor, Supervision)	- Prior to constructive phase of the realization of the project activities	the expenditure is included in the bill of quantities
Construction phase					

Activity	Expected Environmental Impact	Mitigation measures	Responsibility for Implementing Mitigation Measure	Period of Implementing Mitigation Measure	Cost associated with implementation of mitigation measure
<p>- Open summer scene</p> <p>- Street No."2"</p> <p>- Green recreational zone (city park Dojran, parts 1,2, 3, and 4)</p> <p>All works</p>	<p>Possible adverse social and health impacts for the workers and local population as a result of non-compliance with the safety measures</p>	<p>Implementation of Good construction practices during the reconstruction phase including:</p> <ul style="list-style-type: none"> • Ensure proper marking of the project locations with tapes and warning signs, open pits and potentially dangerous locations especially. • Installation of signs for reducing / limiting of the vehicle speeds near the project locations; • Access of non-authorized personnel within the project locations is not allowed; • Set up a special traffic regime, approved by the competent authority (e.g. traffic police) for the vehicles of the contractor during the period of construction (together with the municipal staff and police department) and installation of signs to ensure safety, traffic flow and access to land and facilities; • Set up of vertical signalization and signs at the beginning of the reconstruction site; • Machines should be handled 	<p>Participants related to the performance of construction activities</p>	<p>During the constructive phase of the realization of the project activities</p>	<p>included in the bill of quantities</p>

		<p>only by experienced and appropriately trained personnel, thus reducing the risk of accidents;</p> <ul style="list-style-type: none"> • All workers must be familiar with the fire hazards and fire protection measures and must be trained to handle fire extinguishers, hydrants and other devices used for extinguishing fires. • Workers must be adequately trained, certified and experienced for the work they are performing • Devices, equipment and fire extinguishers should be always functional, so in case of need they could be used rapidly and efficiently. • First aid kits should be available on the site and personnel trained to use it. • Procedures for cases of emergency (including spills, accidents, etc.) are available at the site. • Wearing protective equipment and clothes (hardhats, belts, ropes, overalls, respiratory protection masks for those working with dispersed paint, etc.) at all times. 			
Impacts on the air					
<p>- Open summer scene</p> <p>- Street No."2"</p>	<p>- Appearance of fugitive dust during construction</p>	<ul style="list-style-type: none"> • Spraying with water to reduce the amount of fugitive dust • Use of proper construction 	<p>Participants related to the performance of construction</p>	<p>- During the constructive phase of the realization of</p>	<p>the expenditure is included in the bill of quantities</p>

- Green recreational zone All works	activities - exhaust gases from construction machinery	mechanization • Using high quality fuel • Maintenance of regular service inspections of the construction mechanization • avoiding work mechanization in the so-called "idle"; • determining the duration of machine operation; • residents/sensitive receptors will be informed about construction activities and working hours.	activities	the project activities	
Impacts on water					
- Open summer scene - Street No."2" - Green recreational zone All works	- Spillage of fuel or motor fats and oils, - Discharge of waste water from workers - Accident of construction machinery - Blur the waters through the input of construction material or waste	• No works affecting the waterbody of the lake are allowed. • Carrying out regular maintenance of vehicles and construction mechanization and periodic repairs in accordance with the procedures in order to reduce leakage and emissions. • The maintenance and repairs to vehicles and construction machinery are forbidden to be carried out at the construction site itself. • The vehicles and construction machinery of the contractor use existing access roads • Careful selection of the location for temporary storage of building materials, and construction waste. • The excavated earthen	Participants related to the performance of construction activities	- During the constructive phase of the realization of the project activities	the expenditure is included in the bill of quantities

		<p>material should be adequately enclosed to ensure that it is deposited in the aquatic environment (at least 50m from the Dojran lake quay). Hazardous liquids (e.g. oils and fuel) also have to be stored in the safe distance from the lake;</p> <ul style="list-style-type: none"> • Prevent hazardous spillage coming from waste (temporary waste storage should be leakage protected and those for hazardous or toxic waste equipped with secondary containment system, e.g. double walled or bunded containers). • If hazardous spillage occurs, curb and remove it, clean the site and follow procedures and measures for hazardous waste management. • In the case of any run-off coming from works area possibly contaminated by hazardous substances shall be collected on site to a temporary retention basin and transported to an adequate licensed waste water treatment plant. • Ensure that water pumped back to natural waterways never exceeds the regulatory water quality standards by regular testing. • Install and maintain of proper sanitary facilities for workers. The wastewater from these 			
--	--	---	--	--	--

		sources should be transported to proper waste water treatment facilities.			
Impacts on soil					
<ul style="list-style-type: none"> - Open summer scene - Street No."2" - green recreational zone <p>All works</p>	<ul style="list-style-type: none"> - Fugitive emission of dust from scratching and removal of asphalt; - Emissions of exhaust gases from the construction mechanization engaged for realization of activities; - Leakage of fuels and oils from construction mechanization, a process that can cause impacts on groundwater, as its filtration goes through the soil; - Inadequate management of generated waste at a location; - Pollution of groundwater and soil can occur in case of accidents and emergencies. 	<ul style="list-style-type: none"> - Careful planning of the construction works in order to reduce the negative effects - Reducing the size of the site due to the minimization of the land that will suffer a negative impact - All hazardous materials, such as fuel, lubricants, adhesives, and packaging waste are non-inert waste and must be placed in special appropriate containers located at the construction site, protected from extreme weather conditions and on a safe distance from the waterbodies. - Protection of building materials and stopping construction activities in conditions of heavy rains. - The area of the construction site should be limited. - All lending of gravel and sand, including places where the excess of the excavated material will be thrown away, must possess appropriate permission / approval. - In case of occurrence of contaminated soil from the eventual release of oils from the 	Participants related to the performance of construction activities	<ul style="list-style-type: none"> - During the constructive phase of the realization of the project activities 	the expenditure is included in the bill of quantities

		construction mechanization, contaminated soil should be removed and treated as hazardous waste.			
Waste generation					
<ul style="list-style-type: none"> - Open summer scene - Street No."2" - Green recreational zone All works 	<ul style="list-style-type: none"> - Generation of mixed communal waste - Construction waste from construction activities - Earth material 	<ul style="list-style-type: none"> • Selection of the generated waste • Classification of waste according the national List of Waste (Official Gazette no.100/05); • Determination of waste characteristics; • Containers for each identified waste category are provided in sufficient quantities and positioned conveniently; • Waste collection and disposal pathways and licensed landfills/processing plants will be identified for all major waste types expected from demolition, renovation and construction activities; • All of the waste that is generated during the stay and work of the Contractor employees, applying the best management practices, should be collected, transported and deposited in a legal landfill that meets the basic standards in accordance with the legal acts • Mineral (natural) 	Participants related to the performance of construction activities	<ul style="list-style-type: none"> - During the constructive phase of the realization of the project activities 	the expenditure is included in the bill of quantities

		<p>construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and temporarily stored in appropriate containers. Depending of its origin and content, mineral waste will be reapplied to its original location or reused;</p> <ul style="list-style-type: none"> • Proper storage and labeling of waste on places designated for that purpose; • If the waste has one or more hazardous characteristics, the creator and / or owner is obliged to classify the category of hazardous waste and handle it as hazardous waste, proper store and label in separate containers until handing to authorized company; • 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; • The incineration of all waste at site or unlicensed plants and locations is prohibited. • All construction waste will be collected and disposed properly by licensed collectors and to the licensed landfills (or licensed processing plant). 			
--	--	---	--	--	--

		<ul style="list-style-type: none"> • The records of waste disposal will be regularly updated and kept as proof for proper management, as designed. • Whenever feasible the contractor will reuse and recycle appropriate and viable materials. Discarding any kind of waste (including organic waste) or waste water to the surrounding nature or waterbodies is strictly forbidden. • Collect, transport and final disposal/processing of the communal waste by a licensed company; • The construction waste should be promptly removed from the site and re-used if possible; 			
Impacts due to increased noise level					
<ul style="list-style-type: none"> - Open summer scene - Street No."2" - Green recreational zone <p>All works</p>	<ul style="list-style-type: none"> - Increased noise level as a result of construction activities 	<ul style="list-style-type: none"> • Construction activities can only take place during the daytime (07-19h) • Construction activities should be planned appropriately to reduce the use time of the equipment that creates the most intense noise • During the operations the engine covers of generators, air compressors and other powered mechanical equipment should be closed, and equipment placed as far away from residential areas 	Participants related to the performance of construction activities	<ul style="list-style-type: none"> - During the constructive phase of the realization of the project activities 	the expenditure is included in the bill of quantities

		as possible			
Impacts on nature and protected areas					
<ul style="list-style-type: none"> - Open summer scene - Street No."2" - green recreational zone <p>All works</p>	<ul style="list-style-type: none"> - Negative impact on aquatic life in protected area due to emission of pollutants and construction works near protected area - Negative impact on terrestrial fauna due to reconstruction works on access street 	<ul style="list-style-type: none"> - No water uptake from the lake or other natural sources in the vicinity is allowed. - Coatings, wood protection agents (e.g. applied to urban and playground equipment), paints, and other agents applied must not be toxic for the aquatic environments. - If applying dyes (or other agents) by spraying, measures will be taken to prevent dispersion into the environment. - There will be no anticorrosion measures applied at the site. - Use of pesticides and artificial fertilizers is prohibited under the project. - Discarding waste or other materials or liquids to the Dojran Lake is strictly prohibited - Prevent hazardous spillage coming from tanks (mandatory secondary containment system, e.g. double walled or bunded containers), construction equipment and vehicles (regular maintenance and checkups of oil and gas tanks, machinery and vehicles 	Contractor, Municipality	<ul style="list-style-type: none"> - During the constructive phase of the realization of the project activities 	the expenditure is included in the bill of quantities

		<p>can be parked (manipulated) only on asphalted or concrete surfaces with surface runoff water collecting system</p> <ul style="list-style-type: none"> - Thoroughly inspect all holes and trenches before they are filled. - Prohibit the collection of firewood from and around working areas. - Establish nesting period for important and protected bird species. Works will be planned so that use heavy machinery or those that emit significant noise and vibrations will not take place in the nesting period of protected bird species and breeding period of other protected species of the site. - In the case of animal presence, nature protection competent authority will be notified. Biologist is engaged if needed. - Disturbance of animals and collection of plants in the area is prohibited. - Minimal green surface is to be removed. No trees will be damaged or removed during works. - There will be no felling. - There will be no open fires. 			
--	--	--	--	--	--

		<ul style="list-style-type: none"> - Use proper construction mechanization with appropriate technical characteristics and use of adequate propellant fuels. - Space covered with construction works should be reduced to a minimum at the construction site. - Animal harassment in all project locations is prohibited. - Set up an appropriate traffic signalization information for limit of the traffic speed. - Only native plants will be used in re-greening. 			
Community safety					
All works	Impact on users of premises and/or community	<ul style="list-style-type: none"> - Street furniture, gazebos and children playgrounds are designed and constructed in line with national and European Union (if national are lacking) safety regulations and requirements and best practices. - Design and construction of the roof must be designed and constructed in line with national and European Union (if national are lacking) safety regulations and requirements and best practices. Safety and stability of the construction 	Contractor, Municipality	- Design and construction	Included to project costs

		must be ensured.			
Chance finds					
All works (likely mostly during earthworks)	Protection of national cultural heritage	- In case there will be chance findings, the works will stop immediately and the competent authority informed. The Contractor will follow instructions of the competent authority and recommence works only upon its written approval.	Contractor, Municipality	- Construction	Included to project costs
Materials management					
All works	Resources depletion	- Mineral resources (e.g. sand, gravel, stone aggregate, etc.) will be used only from licensed companies/quarries with valid extraction concessions; - Suppliers of mineral materials, concrete, asphalt will prove conformity with national environmental and occupational health and safety regulation. - All materials used must be approved by the supervising engineer	Contractor	- Design and construction phase	Included to the project cost
Operative phase					
Waste management					
- Open summer scene - Street No."2"	- Generate communal waste from visitors and	- Concluding an agreement with a local utility company for collecting and transporting	- Municipal communal enterprise	- In the phase of using the street and urban equipment	Depending on the tariff of the Municipal

- Green recreational zone	users on the streets	generated waste to a municipal landfill			Communal Enterprise
All works	- Impact on users of premises and/or community	<ul style="list-style-type: none"> - Use permit is obtained in line with the national regulation. - Street furniture, gazebos and children playgrounds are maintained in line with national and European Union (if national are lacking) safety regulations and requirements and best practices. - The Municipality performs regular safety checks. 	- Municipality	- Use phase	Included to project costs

8. Monitoring activities

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

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

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

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

In addition to the monitoring plan, the environmental supervision checks and assesses implementation of all measures defined in the ESMP mitigation plan.

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

Table 7 Monitoring plan					
Preconstruction Phase					
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
Checking the necessary documentation (permits etc.)	Offices of the Municipality of Dojran	Visual inspection of the necessary documentation	Before the start of the construction activities	Contractor, Supervision engineer, municipality representative	Included in budget
Notification of public and relevant institutions	Offices of Contractor, Municipality of Dojran	Visual inspection of the necessary documentation Residents/sensitive receptors will be informed about construction activities and working hours.	Before the start of the construction activities	Contractor, Supervision engineer, municipality representative	Included in budget
Construction phase					
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
1. Occupational health and safety measures for workers, Safety measures for local population	- Open summer scene - Street No."2" - Green recreational zone	Verification of documentation and visual checks during the execution of the construction works	During preparatory work and constantly in the course of construction work	Contractor, Supervision engineer, LRCP PIU, Municipality inspection	- Included in budget

Environmental management plan for the subproject "Dojran - tourist pearl of Southeast Macedonia"

and other visitors on construction site					
2. Occurrence of fugitive dust during construction activities Exhaust emissions from construction mechanization	<ul style="list-style-type: none"> - Open summer scene - Street No."2" - Green recreational zone 	<p>Visual inspection of the presence of dust and exhaust gases.</p> <p>Spraying with water to reduce the amount of fugitive dust</p> <p>Use of proper construction mechanization and high-quality fuel</p> <p>Maintenance of regular service inspections of the construction mechanization</p> <p>Avoiding work mechanization in the so-called "idle";</p> <p>Determining the duration of machine operation;</p>	Constantly during the performance of construction work	Contractor, Supervision engineer, LRCP PIU, Municipality inspection	- Included in budget
3. Water quality	<ul style="list-style-type: none"> - Open summer scene - Street No."2" - Green recreational zone 	<p>Visual inspection of the presence of oil stains on the soil</p> <p>Visual inspection of oil stains in the nearest water body</p> <p>Carrying out regular maintenance of vehicles and construction mechanization and periodic repairs in accordance with the procedures</p> <p>The maintenance and repairs to vehicles and construction machinery are forbidden the construction site itself.</p> <p>The vehicles and construction machinery of the contractor use existing access roads</p> <p>Careful selection of the location for</p>	Constantly during the performance of construction work	Contractor, Supervision engineer, LRCP PIU, Municipality inspection	- Included in budget

		<p>temporary storage of building materials, and construction waste.</p> <p>The excavated earthen material should be adequately enclosed to ensure that it is deposited in the aquatic environment (at least 50m from the Dojran lake quay);</p> <p>Prevent hazardous spillage coming from waste (temporary waste storage is leakage protected and those for hazardous or toxic waste equipped with secondary containment system, e.g. double walled or bunded containers).</p> <p>Procedures and measures for hazardous waste management are set.</p> <p>Any run-off coming from works area possibly contaminated by hazardous substances shall be collected on site to a temporary retention basin and transported to an adequate licensed waste water treatment plant.</p> <p>Proper sanitary facilities for workers are installed and maintained. (The wastewater from these sources is transported to proper waste water treatment facilities).</p> <p>All hazardous materials, such as fuel, lubricants, adhesives, and packaging waste are non-inert waste and must be placed in special appropriate containers located at the construction</p>			
--	--	---	--	--	--

Environmental management plan for the subproject "Dojran - tourist pearl of Southeast Macedonia"

		<p>site, protected from extreme weather conditions</p> <p>Protection of building materials and stopping construction activities in conditions of heavy rains.</p> <p>The area of the construction site should be limited.</p>			
4. Leakage of fuels and oils from construction mechanization, a process that can cause impacts on groundwater, as its filtration goes through the soil; Inadequate management of generated waste at a location; Pollution of groundwater and soil can occur in case of accidents and emergencies.	<p>- Open summer scene</p> <p>- Street No."2"</p> <p>- Green recreational zone</p>	<p>Visual inspection of the presence of oil stains on the soil</p> <p>Building materials are protected and construction activities in conditions of heavy rains are stopped.</p> <p>The area of the construction site is limited.</p> <p>- All lending of gravel and sand, including places where the excess of the excavated material possesses appropriate permission / approval.</p> <p>- In case of occurrence of contaminated soil from the eventual release of oils from the construction mechanization, contaminated soil is removed and treated as hazardous waste.</p>	Constantly during the performance of construction work	Contractor, Supervision engineer, LRCP PIU, Municipality inspection	- Included in budget
5. Waste management (Generation of mixed communal waste	<p>- Open summer scene</p> <p>- Street No."2"</p> <p>- Green recreational zone</p>	<ul style="list-style-type: none"> • Selection of the generated waste • Classification of waste according the national List of Waste (Official Gazette no.100/05); • Determination of waste characteristics; • Containers for each identified 	Constantly during the performance of construction work	Contractor, Supervision engineer, LRCP EE, Municipality inspection	- Included in budget

<p>Construction waste from construction activities Earth material waste asphalt and concrete)</p>		<p>waste category are provided in sufficient quantities and positioned conveniently;</p> <ul style="list-style-type: none"> • Waste collection and disposal pathways and licensed landfills/processing plants will be identified for all major waste types expected from demolition, renovation and construction activities; • All of the waste that is generated during the stay and work of the Contractor employees, applying the best management practices, should be collected, transported and deposited in a legal landfill that meets the basic standards in accordance with the legal acts • Mineral (natural) construction and demolition wastes will be separated from general refuse, organic, liquid and chemical wastes by on-site sorting and temporarily stored in appropriate containers. Depending of its origin and content, mineral waste will be reapplied to its original location or reused; • Proper storage and labeling of waste on places designated for that purpose; • If the waste has one or more hazardous characteristics, the creator and / or owner is obliged to classify the category of hazardous waste and handle it as hazardous waste, proper store and label in separate containers until handing to authorized company; • Construction activities will end (finish) only after all waste 			
---	--	---	--	--	--

Environmental management plan for the subproject "Dojran - tourist pearl of Southeast Macedonia"

		<p>materials have been removed (no waste must be left on the construction site)/ collected by authorized company;</p> <ul style="list-style-type: none"> • The incineration of all waste at site or unlicensed plants and locations is prohibited. • All construction waste will be collected and disposed properly by licensed collectors and to the licensed landfills (or licensed processing plant). • The records of waste disposal will be regularly updated and kept as proof for proper management, as designed. • Whenever feasible the contractor will reuse and recycle appropriate and viable materials. Discarding any kind of waste (including organic waste) or waste water to the surrounding nature or waterbodies is strictly forbidden. • Collect, transport and final disposal/processing of the communal waste by a licensed company; • The construction waste should be promptly removed from the site and re-used if possible; 			
6. Increased noise level as a result of construction activities	<ul style="list-style-type: none"> - Open summer scene - Street No."2" - Green recreational zone 	Auditive noise level assessment	Constantly during the performance of construction work	Contractor, Supervision engineer, LRCP EE, Municipality inspection	- Included in budget

Environmental management plan for the subproject "Dojran - tourist pearl of Southeast Macedonia"

7. Nature protection	<ul style="list-style-type: none"> - Open summer scene - Street No."2" - Green recreational zone 	<p>Visual monitoring does:</p> <ul style="list-style-type: none"> - No water uptake from the lake or other natural sources in the vicinity is allowed. - Coatings, wood protection agents (e.g. applied to urban and playground equipment) and other agents applied will not be toxic for the aquatic environments. - There will be no anticorrosion measures applied the site. - Discarding waste or other materials or liquids to the Dojran Lake is strictly prohibited - Prevent hazardous spillage coming from tanks (mandatory secondary containment system, e.g. double walled or bunded containers), construction equipment and vehicles (regular maintenance and 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 - Thoroughly inspect all holes and trenches before they are filled. - Prohibit the collection of firewood from and around working areas. - Disturbance of animals and collection of plants in the area is prohibited. - Minimal green surface is to be removed. No trees will be damaged or removed during works. 	Constantly during the performance of construction work	Supervision engineer, LRCP EE, Environmental inspection, Municipality inspection	- Included in budget
----------------------	---	---	--	--	----------------------

Environmental management plan for the subproject "Dojran - tourist pearl of Southeast Macedonia"

		<ul style="list-style-type: none"> - There will be no felling. - There will be no open fires. - Use proper construction mechanization with appropriate technical characteristics and use of adequate propellant fuels. - Space covered with construction works should be reduced to a minimum at the construction site. - Animal harassment in all project locations is prohibited. - Set up an appropriate traffic signalization information for limits of the traffic speed. 			
Operative phase					
Waste management					
8. Generate communal waste from visitors and users on the streets	<ul style="list-style-type: none"> - Open summer scene - Street No."2" - Green recreational zone 		According to the dynamics of the Public Utility Company	Public Utility Company	Included in budget of Public Utility Company

9. Roles and responsibilities for implementing the Environmental and social management plan

During construction phase of the Project, mitigation and monitoring activities will run parallel to the construction activities. They will commence at the time when employees, equipment and/or materials are moved to the site and will end after the job is completed and all employees, equipment and/or materials are removed from the site and the work at particular location is complete.

It is necessary that the monitoring activities to be extended to the period after completion of the activities.

Detailed monitoring plan, including what will be monitored, where; type of instruments and their accuracy, frequency of measurements etc. should be prepared by the Contractor of activities for realization of the planned project activities for "Dojran - tourist pearl of Southeast Macedonia"

The Contractor should provide regular reports to the municipality of Dojran. Same applies to the Monitoring, Supervision and Maintenance Contractors for their part of mitigation and monitoring activities. If some kind of accident or endangerment of environment could happen reporting will be immediate.

The Municipality of Dojran is obligated to submit quarterly reports for the implementation and monitoring of mitigation measures in the form of a tabular overview (mitigation plan and monitoring plan) with an additional column giving the status of the measure and monitoring the measure (implemented / not implemented, when, by which entity, etc.).



РЕПУБЛИКА МАКЕДОНИЈА
ОПШТИНА ДОЈРАН
Кеј 5-ти Ноември 66, Стар Дојран 1487
Тел/факс: +389 34 225 278
e-mail: dojran@t.mk
<http://dojran-info.com/>

Број: УП 11-240

03.08.2018 година

Врз основа на член 24 став 5 од Законот за животна средина (Службен весник на РМ бр.53/05; 81/05; 24/07; 159/08; 83/09; 48/2010; 124/2010; 51/2011; 123/2012; 93/2013; 187/2013; 42/2014; 44/2015; 129/2015; 192/15 и 39/16), а во согласност со член 1 од 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 ("Службен весник на РМ" бр.80/2009 и 32/2012), Градоначалникот на општина Дојран, постапувајќи по барањето на Општина Дојран, со седиште на ул. "Кеј 5-ти Ноември" 66 во Стар Дојран за одобрување на елаборат за изградба на новопроектиран објект – улица Гоце Делчев и Улица 2 во Стар Дојран, заведено под УП 11-240 од 03.08.2018 година, донесува:

РЕШЕНИЕ

за одобрување на елаборат за заштита на животната средина

СЕ ОДОБРУВА Елаборатот за заштита на животната средина бр.101-05/2018 од 01.08.2018 година, изготвен од ДПИУТ ИНТ ГЛОБАЛ ИНЖЕНЕРИНГ АВ увоз-извоз ДООЕЛ БИТОЛА, за вршење на дејноста X Инфраструктурни проекти; 1. Локални патишта и улици, поднесено од барателот - правното лице, Општина Дојран, со седиште на ул. "Кеј 5-ти Ноември" 66 во Стар Дојран.

ОБРАЗЛОЖЕНИЕ

Барателот Општина Дојран, со седиште на ул. "Кеј 5-ти Ноември" 66 во Стар Дојран, до општина Дојран поднесе барање, заведено под број УП 11-240 од 03.08.2018 година, за одобрување на елаборат за заштита на животната средина за вршење на дејноста: X Инфраструктурни проекти; 1. Локални патишта и улици.

Градоначалникот на општина Дојран по разгледувањето на елаборатот за заштита на животната средина за вршење на дејноста: X Инфраструктурни проекти; 1. Локални патишта и улици, констатира дека во предметниот елаборат, бр.101-05/2018 од 01.08.2018 година, изготвен од ДПИУТ ИНТ ГЛОБАЛ ИНЖЕНЕРИНГ АВ увоз-извоз ДООЕЛ БИТОЛА, составен од текстуален дел и графички прилози, се анализирани сите извори и видови на можни влијанија врз животната средина и се земени во предвид сите неопходни компоненти во вршењето на дејноста односно активноста за која се однесува елаборатот.



РЕПУБЛИКА МАКЕДОНИЈА
ОПШТИНА ДОЈРАН
Кеј 5-ти Ноември 66, Стар Дојран 1487
Тел/факс: +389 34 225 278
e-mail: dojran@t.mk
<http://dojran-info.com/>

Број: УПІ 11-240

03.08.2018 година

Проектираните мерки за заштита содржани во Програмата за заштита на животната средина која е составен дел на елаборатот се применливи, и во целост ги исполнува условите од член 24 став 5 од Законот за животна средина (Службен весник на РМ бр. 53/05; 81/05; 24/07; 159/08; 83/09; 48/2010; 124/2010; 51/2011; 123/2012; 93/2013; 187/2013; 42/2014; 44/2015; 129/2015; 192/15 и 39/16), и обезбедуваат оптимална заштита на животната средина, врз чија основа се одлучи како во диспозитивот на ова решение.

Барателот СЕ ЗАДОЛЖУВА целосно и без исклучоци да се придржува кон пропишаните мерки за заштита содржани во Програмата за заштита на животната средина која е составен дел на Елаборатот за заштита на животната средина и кон законски определените мерки.

Упатство за правно средство: Против ова решение барателот може да изјави жалба во рок од 15 (петнаесет) дена од денот на приемот на ова решението до министерот кој раководи со органот на државната управа надлежен за вршење на работите од областа на животната средина и просторно планирање.

Административната такса за доставување на жалба е 250,00 ден.

Доставено до:

- Барателот
- Овластен инспектор за животна средина
- Архива

Изготвил:
Катерина Кадиева Сор.

Градоначалник на
општина Дојран
Анго Ангов





REPUBLIC OF MACEDONIA
MUNICIPALITY OF DOJRAN
Kej 5-ti Noemvri NN, Star Dojran 1487
Tel/fax: +389 34 255 278
e-mail: dojran@t.mk
<http://dojran-info.com>

UPI number: 11-240

03.08.2018

Pursuant to Article 24 paragraph 5 of the Law on Environment (Official gazette of Republic of Macedonia No. 53/05; 81/05; 24/07; 159/08; 83/09; 48/2010; 124/2010; 51/2011; 123/2012; 93/2013; 42/2014; 44/2015; 129/2015; 192/15 and 39/16), and related to article 1 of the Regulation of the activities for which an elaborate is compulsory, and for which approval the Mayor of the Municipality, the Mayor of Skopje and the Mayor of the municipalities in Skopje are competent (Official gazette of Republic of Macedonia No. 80/2009 and 32/2012), the Mayor of the Municipality of Dojran, deciding upon the request by Municipality of Dojran with address "Kej 5-ti Noemvri" NN in Star Dojran for approval of an elaborate for construction of newly-designed object – street Goce Delcev and Street 2 in Star Dojran, submitted under UPI No. 11-240 from 03.08.2018, adopt the following:

DECISION

for approval of an elaborate for environment protection

An elaborate for environment protection No. 101-05/2018 from 01.08.2018, prepared by **DPIUT INT GLOBAL INZENERING AB import/export DOOEL BITOLA**, for carrying out the activity X Infrastructure projects; 1. Local roads and streets, requested by the applicant – legal entity, Municipality of Dojran, with address "Kej 5-ti Noemvri" NN in Star Dojran **is been approved.**

EXPLANATION

The applicant Municipality of Dojran with address "Kej 5-ti Noemvri" No.1 in Star Dojran, submitted a request addressed to Municipality of Dojran with UPI No. 11-240 from 03.08.2018, for approving an elaborate for environment protection for implementing the activity: X Infrastructure projects; 1. Local roads and streets.

After the observation of the elaborate for environment protection for carrying out the activity: X Infrastructure projects; 1. Local roads and streets, the Mayor of the Municipality of Dojran, ascertained that in the subject elaborate No. 101-05/2018 from 01.08.2018 prepared by DPIUT INT GLOBAL INZENERING AB import/export DOOEL BITOLA, composed of textual part and graphical annexes, all resources and types of possible impacts to the environment and all necessary components are taken into consideration when practice the activity i.e. the activity which is subject of the elaborate.



REPUBLIC OF MACEDONIA
MUNICIPALITY OF DOJRAN
Kej 5-ti Noemvri NN, Star Dojran 1487
Tel/fax: +389 34 255 278
e-mail: dojran@t.mk
<http://dojran-info.com>

UPI number: 11-240

03.08.2018

The planned protection measures contained in the Program for environment protection, which is part of the elaborate, are applicable and are in accordance with the terms stated in Article 24 paragraph 5 of the Law of Environment (Official gazette of Republic of Macedonia No. 53/05; 81/05; 24/07; 159/08; 83/09; 48/2010; 124/2010; 51/2011; 123/2012; 93/2013; 42/2014; 44/2015; 129/2015; 192/15 and 39/16) and provide optimal environment protection, basis taken into consideration when deciding as in dispositive to this decision.

The applicant is obliged to fully and without exemption, comply with the prescribed protection measures contained in the Program for environment protection, which is part of the elaborate and with the legally determined measures.

Instruction for legal remedy: Against this Decision, a complaint may be filed within 15 (fifteen) days from the day of receipt of the decision, to the minister managing the state administration body authorized for performing activities in the field of environment and physical planning.

The compliant is charged 250, 00 mkd - administrative taxes.

Delivered to:

- Applicant
- Certified environmental inspector
- Archive

Prepared by:

Katerina Kadieva

