



## **ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN**

for the sub-project

**“ECONOMIC VALORIZATION OF CULTURAL AND  
ALTERNATIVE TOURIST OFFER OF THE TSAR’S TOWERS IN  
TOURIST DESTINATION STRUMICA”**

## **MUNICIPALITY OF STRUMICA**



Strumica, 2020

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## **Introduction**

The Local and Regional Competitiveness Project (LRCP) (LRCP-1/18 Application No. 139) is a four-year investment operation supported by the European Union using IPA funds 2 and with the intention to compete and innovate in Macedonia. The LRCP is managed as a hybrid fund and will consist of four components and will be managed and implemented by the World Bank and the Government of the Republic of Macedonia. The project will provide financial investments and capacity building to support sectorial growth, investment in destinations and the development of a specific destination. At regional and local level, the project will support selected tourist destinations in the country through a combination of technical support to improve destination management, investment in infrastructure and investment in innovation. The investments will be managed through a grant scheme for stakeholders of regional tourism such as municipalities, institutions, NGOs and the private sector.

This Environmental and Social Management Plan (ESMP), accompanied with the Cultural Heritage Management Plan, has been prepared for the planned activities within the project "Economic Valorization of the Cultural and Alternative Tourist Offer of Tsar's Towers in Tourist Destination Strumica" and for the promotion of cultural and archeological tourism in the Municipality of Strumica. The ESMP presents the environmental diligence document comprised of project description, technical details, scope, setting and location based on which it assesses the environmental and social risks as well as the risks associated with the immovable cultural heritage and the avoidance and mitigation measures addressing them. Implementation of mitigation measures addressing the identified risks and issues defined in the ESMP is mandatory. Detailed Cultural Heritage Management Plan for "Economic Valorization of the Cultural and Alternative Tourist Offer of Tsar's Towers in Tourist Destination Strumica" sub-project is attached as Annex 3 of this ESMP.

### **1. Promotion of cultural and archaeological tourism in Strumica**

Cultural and archaeological site "Tsar's Towers" in Strumica (CASTT), is located on top of the hill above the town in the vicinity of Strumica, the main center of the municipality, which in our country is categorized as island resort of supreme category according to criteria of attractiveness for tourism attendance. The archaeological site of Tsar's Towers with its cultural, historical and spiritual heritage that dates back to ancient times is a large developmental tourist potential for the municipality as well as for the city of Strumica.

Based on typological features, cultural and archaeological site "Tsar's Towers" is categorized as complex of prehistoric and medieval character. Within CASTT there are many profane and sacral monumental objects and is one of the largest archaeological sites in the Balkans.

The archaeological site of "Tsar's Towers" is a cultural monument whose status was determined by Decision no. 925 dated 16.09.1998 brought by the Institute for Protection of Monuments of Culture, Natural Rarities and Museum – Strumica. Based on this decision for cultural monument, it is registered in the Central Registry No. 925 of the Immovable Monuments of Culture of the Republic of North Macedonia, while in the Municipal Register of Immovable Monuments of Culture on the territory of the Municipality of Strumica it is registered under reg. no. 3 from 19.08.1998.

For the sub-project activities, Municipality of Strumica has gained a Conservation approval for Annex 2 of the approved project for conservation, restoration and partial reconstruction of the ramparts at the "Tsar's Towers" archeological site in Strumica, No. УПБр. 08-892 from 15.11.2019 from Office for protection of Cultural heritage. This approval is presented in Annex 1 of this document.

**Previous protection statuses:**

- The archeological locality "Tsar's Towers" are listed as monument of culture with Decision no. 03-94 / 1 of 06.06.1981. Institute for Protection of Monuments of Culture, Natural Rarities and Museum, Strumica, addendum with Decision no. 09-53 / 1 from 01.09.1998. / Central registry 925, 4-829-065 / 065 RND.
- Decision for a **Cultural monument** registered at the Central Institute for Protection of Cultural Monuments and Natural Rarities of the Republic of Macedonia No.25 of 10.05.1953. The Law on Protection of the CASTT prevents activities and influences that can damage and degrade cultural facilities and provides preservation of its historical and cultural values.

CASTT meets all the bases by defining the term "tourist spot": it is attractive (with the richness of its cultural and historical monuments; it possesses communication (since there is pedestrian and traffic accessibility), and, finally, high receptivity (because the municipality has on disposal or has its facilities for accommodation and a large number of other facilities offering the necessary services for tourists).

The current situation of CASTT is also confirmed in the program for revitalization of the "Tsar's Towers", but due to lack of funds for various types of interventions (like construction of protective towers, improvement of pedestrian networks and other open surfaces that are in exceptional degraded condition), the current state is still unsatisfactory.

## **2. Planned activities**

The overall objective of the sub-project is to promote and improve the conditions for development of alternative tourism at the site of "Tsar's Towers" (Carevi Kuli).

The specific objectives of the sub-project that have an impact on the environment contained in the project documentation, are the project activities given with detailed description as follows:

- ❖ Conservation, restoration and partial reconstruction of the ramparts and towers in the Tsar's Towers fortress
- ❖ Lighting of ramparts of the Tsar's Towers
- ❖ Upgrade of access trails and stairs with candelabras from Loven Dom to the north tower of the Tsar's Towers fortress
- ❖ Urban landscaping (arrangement within the existing dimensions) of tourist trim trail from Loven Dom to St. Ilija monastery
- ❖ Urban landscaping (arrangement within the existing dimensions) of mountain bike trail to St. Ilija monastery from Tsar's Towers

### **2.1. Construction, restoration and partial reconstruction of the ramparts and towers in the "Tsar's Towers" fortress**

Foreseen activities under this project are the following:

#### **I. Preparation work activities for the entire Tsar's Towers site**

- Clearing the terrain at and around the fortress before starting construction interventions
  - Forming and leveling the trail for transport of material from the platform to the Northern tower and eastern rampart - 270 m2. Ensuring safe access to working sites for all workers and safe working conditions.

- Clearing and leveling the terrain at the place of performing work activities with the width of 2 meters on both sides of the ramparts - 363 m<sup>2</sup>
- Preparation of space for materials storage -150 m<sup>2</sup>
- Removing all endangered and broken parts (which lost co-existence) and cleaning to the intact layer, that is to calcified mortar associated with stone in the monolith
- Removing moss, lichen and vegetation from the rampart walls and remediation of each segment separately
- Separating the material for reuse (stone and brick)
- Preparing the contact surfaces for forming the walls of the crown or its front side with a connection means

## **II. Reconstruction works:**

- Continuing the restoration and reconstruction of the final parapets, on the partially reconstructed Northern entrance tower
- Reconstruction of a part of the north-eastern rampart to the Northern tower with reconstruction of part of the parapets
- Reconstruction of stairs of stone attached to the North-eastern rampart for entrance in the Northern tower through the walk trail of the rampart
- Continuing the restoration and reconstruction of the partially built North-western rampart to the Northern tower with reconstruction of part of the parapets
- Construction of temporary single metal stairs with landing to the Northern tower on its outer side to the entrance to it
- Conservation and restoration of the entire length of the medieval Eastern rampart
- Conservation and restoration of the remains from the antique rampart with its accompanying facilities located on a part to the eastern rampart
- Ground works work from the internal side on the length of the eastern rampart in accordance with the terrain
- Conservation and partial restoration of the South-eastern Tower
- Continuing the partial reconstruction of the partially built rampart between the South-western and south-eastern tower (South portal)
- Continuing the partial reconstruction of the partially reconstructed South-western rampart
- Reconstruction of wooden single stairs to the south-western tower with a wooden fence to access the walk trail of the south-western rampart
- Forming the already existing access trail of stone to access the South portal (entrance) in the fortress
- Reconstruction of temporary metal stairs with landing to access the South portal (entrance) in the fortress with metal fence planned to be in continuation of the already existing temporary stone trail
- Reconstruction of temporary single stairs to access the fortress through the entering North tower from its outer side
- Setting protection metal fences on places of the rampart which are critical in order to physically protect the visitors
- Reconstruction of drainage canals on the rampart canvas and towers in places where visitors made from stone slabs are necessary

All foreseen interventions on the ramparts and towers from the Tsar's Towers fortress derive on the basis of extensive conservation analysis and research, so that the given positions have

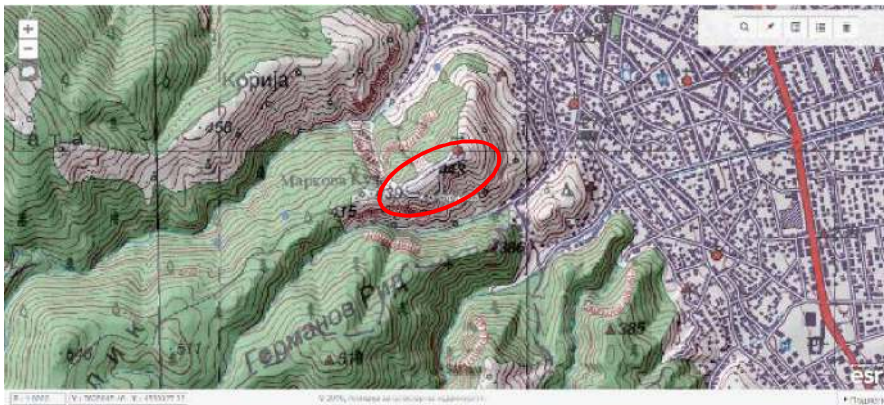
been accurately determined. Special attention and research has been paid to the configuration of the terrain, which dictated the spreading of the rampart.

It ought to be noted that the present-day configuration has changed since the time of construction of the fortress and is constantly changing as a process of weather and atmospheric circumstances, so in this project it cannot be determined with absolute accuracy the elevation of some parts of the rampart wall and towers, their damage, as well as the unrestricted opportunity for conservation interventions to reveal new masonry elements on the terrain that will alter the programme and the performance dynamics.

During the implementation of the project, separate issues will be resolved on the spot if they arise, in order to establish continuation of the rampart canvas in accordance with the terrain.

For all these foreseen activities, the engagement of a suitable construction operative with master conservationists has been envisaged, with constant expert supervision.

The construction of these activities represents a complex conservation grip for which the use of appropriate materials and use of scaffolding is required.



**Figure 1** Location of the “Tsar’s Tower” on topographic map

*Environmental and social management plan for the sub-project  
“Economic valorization of cultural and alternative tourist offer of the Tsar’s Towers in tourist destination Strumica “*



**Figure 2** Satellite view of the “Tsar’s Towers”

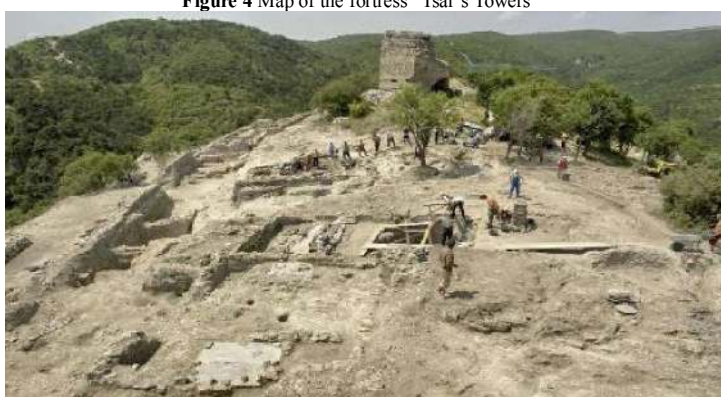


**Figure 3** View of the south-west archaeological site of “Tsar’s Towers”, place where the construction works will be executed

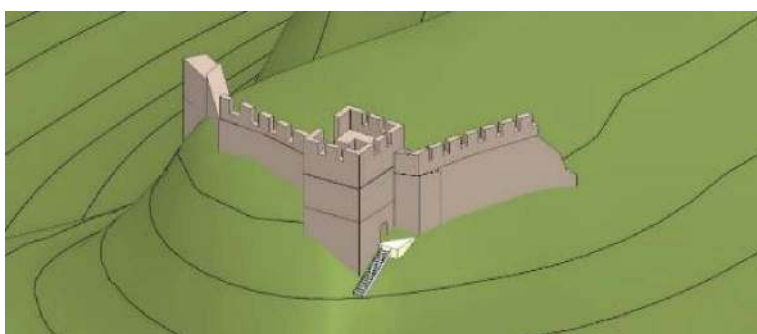




**Figure 4** Map of the fortress “Tsar’s Towers”



**Figure 5** View of the archaeological site “Tsar’s Towers” from the north side, the place where the construction works will be executed



**Figure 6** North tower with part of northwestern and northwestern ramparts shown as a 3D model on the outside



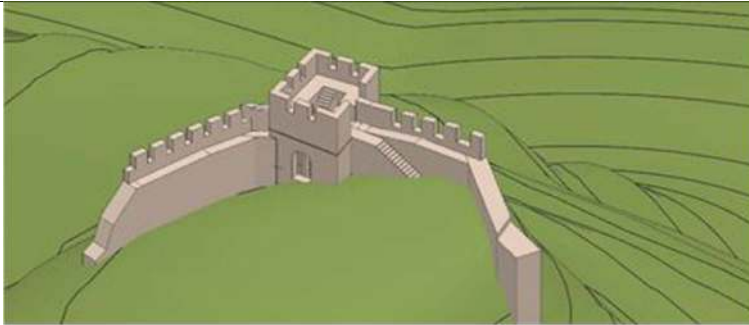


Figure 7 North tower with part of northwestern and northwestern rampart shown as 3D model on the inside

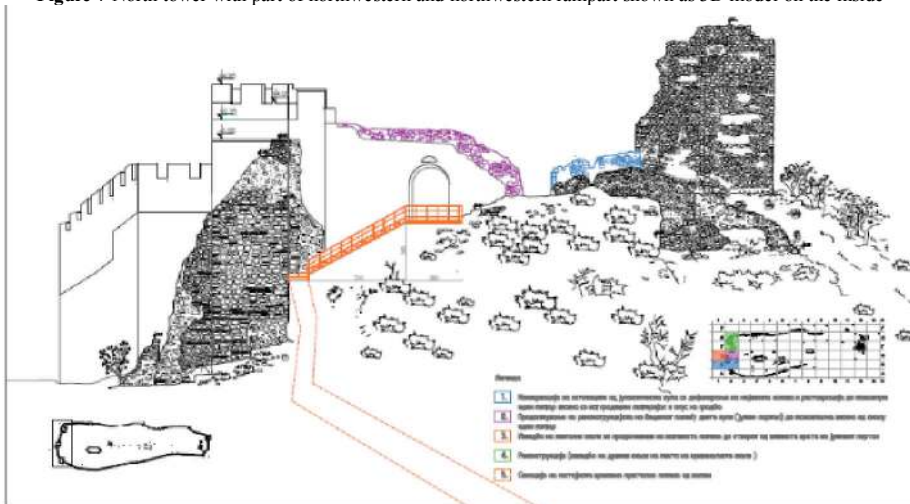
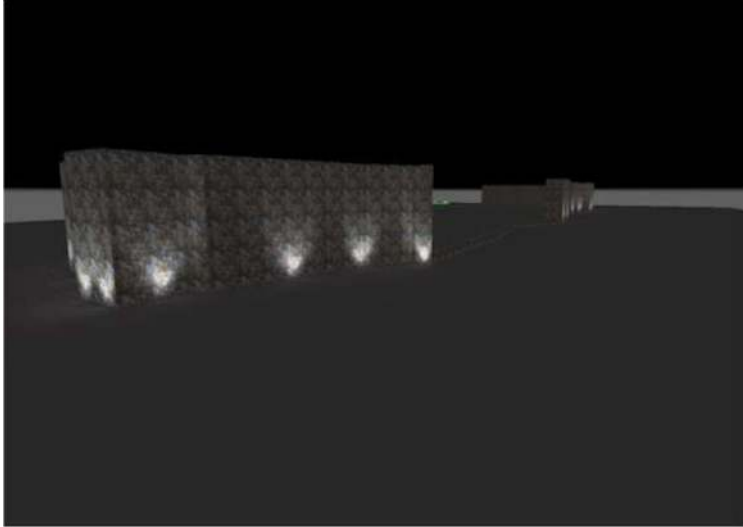


Figure 8 Appearance of a southern rampart and south-eastern tower with interventions provided

## 2.2. Lighting of ramparts of the Tsar's Towers

### Activities under this project are the following:

- Lighting of towers and ramparts from the outer side in order to emphasize the historic value of the facility and to provide a view of the entire Tsar's Towers fortress from the city of Strumica in the night hours. During the lighting, it will be taken care of highlighting the towers of the fortress and not to damage the ramparts and towers of the fortress.
  - Setting 37 LED spotlights of 18.6 W with total installed power for the envisaged lighting of 688 W.
  - 13 spotlights are planned to be installed for lighting the south rampart with the south-eastern tower, 10 spotlights for the south-western rampart, 3 spotlights on the north-west rampart and 11 spotlights on the north rampart and north tower.
  - The 11 spotlights on the south rampart with the south-east tower due to the steepness of the terrain will be installed on metal consoles of  $L=1.3$  m, while the other 26 spotlights are required to be installed on concrete fundaments built for that purpose on a distance of 1.5 meter from the fortress. The exact position of each spotlight may be seen in the graphic part. The angle of direction of the fortress should be  $15^\circ$ .



**Figure 9** View North-West



**Figure 10** View South-West

### **2.3. Creation of access trails and stairs with candelabras from Loven Dom to the north tower of the Tsar’s Towers fortress**

#### **Activities foreseen under this project are the following:**

- Construction of access trail with a staircase with candelabras from Loven Dom to the North tower on the Tsar’s Towers fortress in the length of 406.31 m.

Preparatory and ground works:

- Marking and securing the route - 406.31 m
- Clean-up of terrain - 382 m<sup>2</sup>

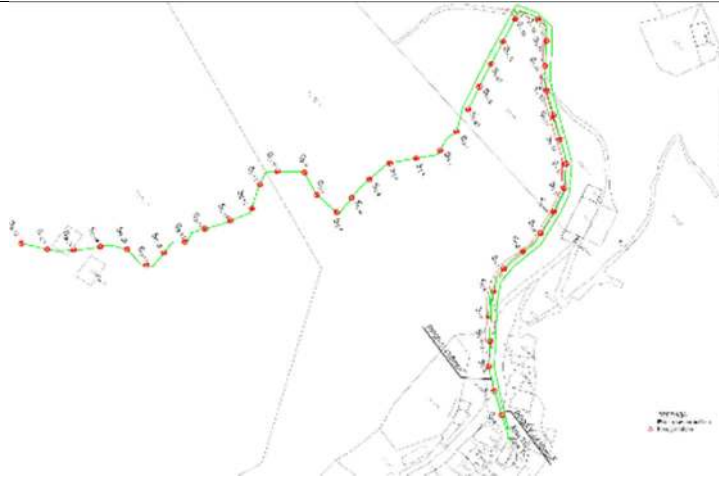
- Manual ground excavation of IV and V floor. Wide excavation with loading and transport of excavated material up to 1 km - 368.52 m<sup>3</sup>
- Construction of embankment of excavated material by compacting layers of 30 cm - 286.12 m<sup>3</sup>

Upper layer:

- Design of A-B stairs with rest points (landing) of MB30 thickness of d=10 cm and reinforcement Q188 by placing finishing layer of stone slab d=5 cm (cobblestone) with attached detail - 812 m<sup>2</sup>.
- Electrical installation and installation of 45 candelabras along the trail
  - Installation of 2 connectors within existing distribution substation
  - Trench machine excavation (0,4mx0,8m) in length of 660m
  - Electrical installation of 45 candelabras/street lights (installation of galvanized tape - 660 m, installation of precautionary tapes, excavation and concreting of 45-pillar poles, installation of 45 poles and 45 lamps, cables, earthing, etc.)



**Figure 11** Satellite view of the pedestrian track Loven Dom to Tsar's Towers



**Figure 12** Schematic view of the position of the lighting poles from "Loven Dom" to "Tsar's Towers"

#### 2.4. Urban landscaping and finalizing of tourist trim trail from Loven Dom to St. Ilija monastery

##### Activities under this project are the following:

- Urban landscaping ([arrangement under the current dimensions](#)) and finalizing of tourist trim trail to the monastery St. Ilija - Strumica in the length of 2.06 km
  - Preparatory and ground works of existing trim trail in the length of 2.06 km
  - Installation works - installation and repair of metal fence installed on concrete lectern along the route - 98 m
  - Repair and construction completion of stone stairs of local stone in extended mortar - 156 m
  - Repair and completion of stone supporting walls of local stone in extended mortar - 154 m
  - Dismantling and re-installation of existing dislocated bridge with the construction and creation of fundaments of natural material (stone and wood) - 2 bridges in the length of 10 m
- Urban landscaping with urban equipment
  - Design of family corner of natural materials for family activities in nature (installation of [gazebo](#) for picnics, installing urban equipment, 4 swings and 1 big wooden toy with sliding stairs and other props ([playground](#)). [All toys and props must have safety certificates and attests.](#))
  - Installation of urban equipment, signposts and information boards with concrete of AB footings
  - Installation of 40 signposts and 10 information boards (40 signposts on the trim trail, mountain bike trail, access trail with candelabras and Tsar's Towers fortress and 10 information boards, 2 on each trail and others on the Tsar's Towers fortress)
  - The signposts and information boards as well as the urban equipment will be made of wood (details and graphic attachments as well as dimensions are given in the project documentation).



Figure 13 Tourist trim trail from "Lovecki Dom" to the monastery of St. Ilija

## 2.5. Urban landscaping of mountain bike trail to St. Ilija monastery from Tsar's Towers

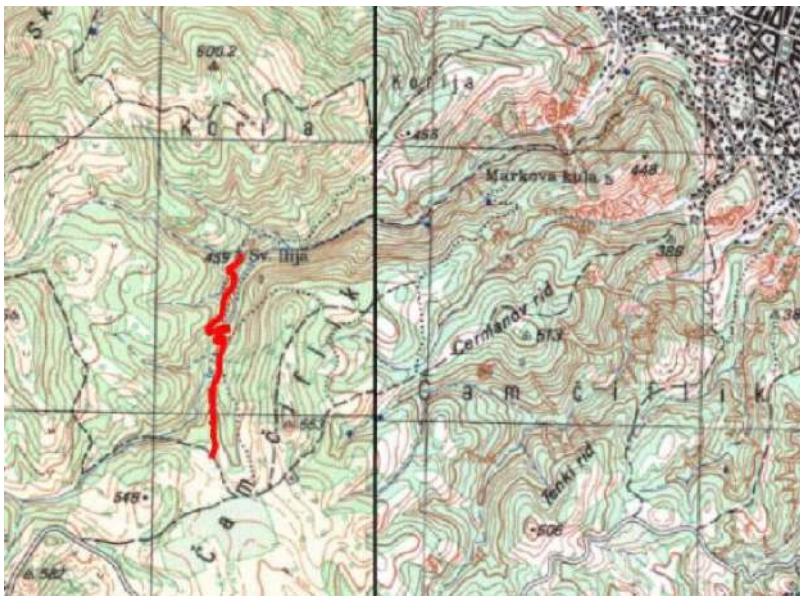
### Activities under this project are the following:

- Urban landscaping of existing mountain bike trail from monastery St. Ilija to the path that leads to the Tsar's Towers site in Strumica in the length of 1.052 km and existing width with compaction of d=20 cm
  - Preparatory works - Marking and securing the route and cleanup of terrain from the low vegetation e.g. bushes, excavation, loading and transport - 1.897 m<sup>2</sup>
  - Ground works - Machine ground excavation in loading and transport - 3158 m<sup>3</sup>
  - Planning and compacting the underground - 4211 m<sup>2</sup>
  - Making of embankment with compaction - 1923 m<sup>3</sup>
  - Storm water collector - Mechanical excavation of canals in the ground - 189 m<sup>3</sup>
  - Installation of 2 culverts
  - Top layer - Creation of buffer layer of crushed stone d=20 cm





**Figure 14** Satellite image of the mountain bike trail from “Tsar’s Towers” to monastery of St. Ilia



**Figure 15** The mountain bike trail from “Tsar’s Towers” to monastery of St. Ilia shown on topographic map

In addition to the above-mentioned activities after the technical documentation, it is planned the implementation of activities for Visibility of the project and preparation of promotional materials, as follows:

- Preparation and design of a website
- Preparation and design of cards and maps
- Preparation and design of flyers, guide in Macedonian and English language
- Advertisement (recording and broadcasting a TV advertisement).



### 3. Location of the activities

The locations where the planned activities of the subproject will take place are located in the south-eastern part of the Republic of Macedonia, within the territory of the Municipality of Strumica. The wider site covers the belt around the southwestern periphery of the city, which is out of urban reach and is mostly hilly and steep. The fortress and the whole archaeological site "Tsar's Towers " is located on the top of the hill Cham Chiflik, above the city of Strumica and is an archaeological site from various epochs, from prehistoric to late medieval times. The "Tsar's Towers" rises on the south side above the city of Strumica at 455 meters above sea level. The fortress has an elongated oval base and extends 210 meters east to west and about 90 meters northwest to south. From the northwest side steep valleys descend to the foothills of the torrential rivers Koritnica and Sv. Iliyah torrent.

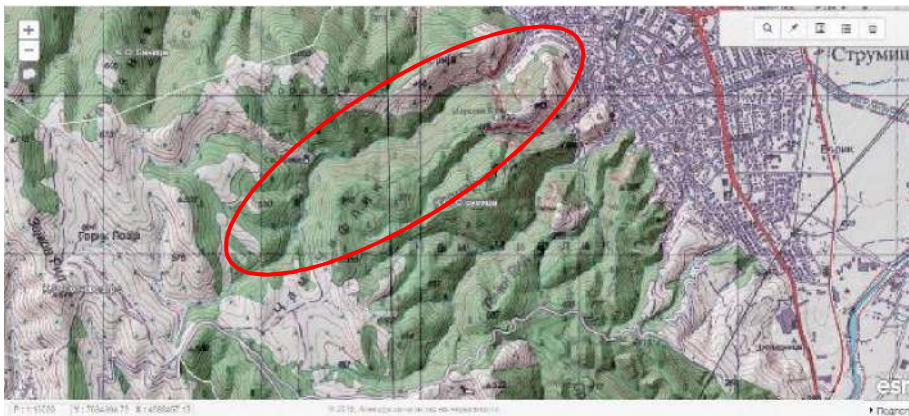


Figure 16 Topographic view of the wider sub-project area

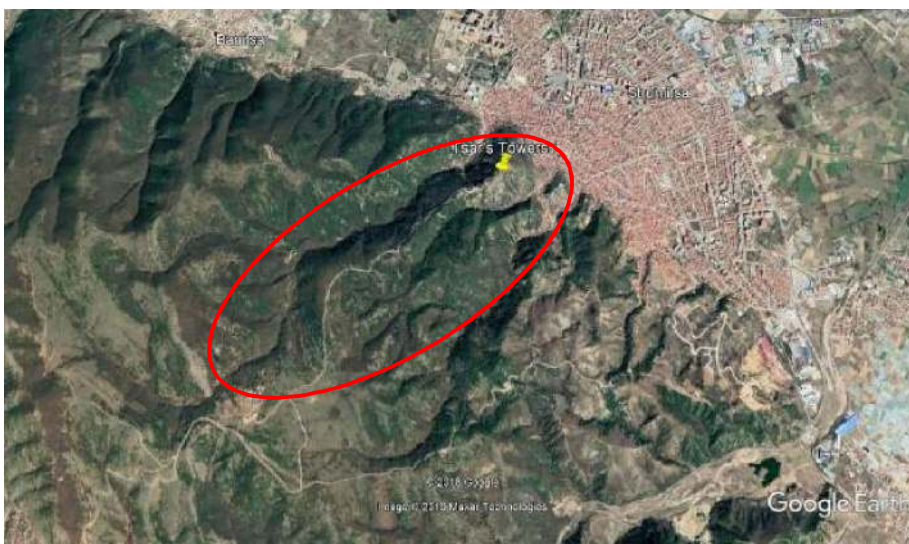


Figure 17 Satellite view of the wider sub-project area

The locality “Tsar’s Towers” by the Law has been declared a cultural heritage of particular importance. The decision for proclamation of “Tsar’s Towers”, no. 925 dated 16.09.1998 is brought by the Institute for Protection of Monuments of Culture, Natural Rarities and Museum - Strumica.

Accessible infrastructure to the location is an existing traffic link from Strumica to “Tsar’s Towers”, which is represented by local road, with length of 7,1 km, through the villages of Popcevo and Cham Chiflic to the necropolis, a steep pedestrian path of about 1 km, damaged Trim Trail from “Loven Dom” to the monastery of St. Ilija, in length of 2.33 km.

In the past period, partial reconstruction of part of the western fortification wall and complete restoration of the south-western tower, complete water supply, tourist info point, archeological, historical, conservation and comparative researches, as well as field research for conservation, restoration and partial reconstruction of other parts of the fortress were carried out.

The activities envisaged in the sub-project will take place within the Cadastral Municipality of Strumica on the following Cadastral Plots: KP 4578/1, KP 4577, KP 4574, KP 4576/1, KP 7895/2 and KP 7895/1. The aforementioned cadastral parcels are owned by the Republic of Macedonia, which means that the expropriation process will not be carried out during the implementation of the planned sub-project activities.

Here can be found the plant association *Coccifero-Carpinetum orientalis pinetosum pallasianae*. The slopes are steep and overgrown with pine forest (*Pinus nigra* - *Pinus pallasiana*) and kermes oak (*Quercus coccifera*). Along with the kermes oak, other mediteranean species can be found, such as: *Clematis flammula*, *Osyris alba*, *Cistus villosus*, *Carex dystachya* etc.

All necessary permits and approvals have been issued for the implementation of the project activities and they have been submitted to the LRCP Implementation Unit.



Figure 18 Topographic and satellite view of the sub-project Cadastral plots

The location of the sub-project is not in the territory of any protected area, or area designated for protection, or recognized as important area.

#### **4. Scope and objective of the ESMP**

The LRCP is supported by the European Union and jointly implemented by the Cabinet of the Deputy Prime Minister of the Government for Economic Affairs, as the Fund Implementing Agency and the World Bank. The LRCP is categorized as a category B project, assuming that a certain level of adverse impact can be expected as a result of the implementation, but none of them as meaningful and long lasting. As a result of this classification, OP 4.01 Environmental Assessment has been activated. Thus, CDPMEA has prepared Environmental and social management framework (ESMF) as a Guide for Environment for sub projects supported by the grant scheme Component 3, and to define the procedures and to verify and assess the environment. All project activities (and sub-projects) should be implemented in accordance with ESMF, World Bank policies, as well as procedures and national regulations (the most rigorous prevailing).

The proposed sub-project is classified as Category B because of the fact that taking into account his nature, size and location, as well as features, its potential adverse environmental impacts are less adverse than those of category A. These impacts are location- specific; several of which are irreversible; and in many cases, mitigation measures can be designed on a ready-made basis than those from sub-projects of category A. The scope of the EA for sub-project B category can vary from one sub-project to another sub- project. In this case, the EA examines the negative and positive impacts of the sub-project and recommends the necessary measures to prevent, minimize, mitigate or compensate for adverse impacts.

The category to assess any potentially negative impact relates to the proposed sub- project, identifying potential environmental improvements and measures needed to prevent, minimize and mitigate adverse impacts. The scope and format of the EA Report will vary depending on the sub-project, but typically will be lower than the Environmental Impact Assessment Study, usually in the form of ESMP. The scope of ESMP is defined in Annex D of ESMF.

**ESMP** is prepared for the activities within the sub project **"Economic valorization of the cultural and alternative tourist offer of Tsar's Towers in tourist destination Strumica"**. **ESMP** and the Cultural Heritage Management Plan (CHMP) consist of project description, technical details, scope and location on which assessment of impacts of environmental and social aspects. ESMP and CHMP are identifying the sustainable and effective measures that could reduce potential negative impacts to an acceptable level on natural and social environment and on cultural heritage. Implementation of mitigation measures on identified risks and impacts is mandatory.

ESMP consists of a set of institutional measures for mitigation and monitoring over the implementation of activities in order to eliminate the negative impacts on natural and social environment, or reduce them to an acceptable level. The plan also includes the necessary activities to implement these measures.

ESMP describes the technical details for each mitigation measure, including the type of impact along with sketches, description of equipment and procedures for action, and potential additional impact assessment on the environment of these measures and provides about other mitigation plans required for the project.

##### **4.1.National Procedure for Environmental Impact Assessment for Project Development**

The procedure for environmental impact assessment is prescribed in the Law on Environment, Official Gazette of the Republic of Macedonia, Journal no. 53/05, 81/05 24/07, 159/08 and 83/09; 124/10, 51/11, 123/12, 93/13, 163/13, 42/14, 129/15 and 39/16 and 99/18 (Chapter XI / Article

76-94) and where EU directives for Environmental Impact Assessments have been made (Directive 85/337 EEC, 97/11 / EC, 2003/35 / EC and 2009/31 /EC).

The procedure begins when the investor (Proposer of the Project) who intends to implement the project, delivers Letter of Intent in written and electronic version to the Ministry of Environment and Physical Planning (MEPP - Department of Environment), responsible for a complete procedure. The Environment Department is obliged to give an opinion on the subject (project) whether it is necessary or not to prepare an Environmental Impact Assessment.

The screening procedure is a stage in which the MoEPP decides whether an Elaborate for environmental protection or Environmental Assessment for a specific project is needed. For the development of projects that are not in the list of projects that require Environmental Impact Assessment Study (small infrastructure projects, for these projects it is necessary to prepare an "Environmental Impact Assessment Report - Elaborate for environmental protection" (applicable for projects of category B under procedure for Environmental Assessment WA 4.0.1 from the World Bank).

For the activities of this sub-project the MoEPP issued an opinion there is no need for preparation of the Elaborate for environmental protection. This opinion is given in Annex 2 of this document.

#### **4.2.National Environmental Assessment Procedure for Small Projects**

During the stage for evaluation the Environmental Impact Assessment Procedure, in case that there is no need for conduction of the Environmental Impact Assessment Procedure, the Investor should prepare an Environmental Impact Assessment Report

Elaborate for environmental protection. This procedure is mandatory for small projects (e.g. Reconstruction of local streets, construction of water supply systems, sewage system, etc.) that cause short-term and minor negative impacts on the environment.

There are two Decrees for the preparation of an Environmental Impact Assessment Report elaborate for small projects:

- Decree on the list of projects for which an Environmental Impact Assessment Report should be prepared by the Investor and the Report should be adopted by the Ministry of Environment and Physical Planning (Official Gazette no. 36/12);
- Decree on the list of projects for which an Environmental Impact Assessment Report should be prepared by the Investor and the Report should be adopted by the Mayor of the Municipality or the Mayor of the City of Skopje (Official Gazette No.32/12)

The content of the Environmental Impact Assessment Report - Elaborate should be in accordance with the Rulebook on the form and content of the Report and the procedures for adopting the Environmental Impact Assessment Report (Official Gazette of the Republic of Macedonia No. 12 / 132).

The EIA report - the Elaborate sets out the main characteristics and activities, the main negative and positive impacts on the environment. The Simple Environmental Program consists of measures to prevent, mitigate and compensate for negative impacts on all environmental elements that need to be developed in accordance with national legislation and international environmental practices. During the preparation and adoption of the EIA Report – Elaborate, there is no need for a public debate.

**The activities envisaged within the sub-project "Economic Valorization of Cultural and Alternative Tourist Offer of Tsar's Towers in Tourist Destination Strumica" are not contained in the mentioned regulations and it does not need preparation of an Elaborate for Environmental protection.**





**Figure 19** The anticipated appearance of the access trails envisaged in the project

#### **4.3. List of regulations and documents for the proposed measures for managing the environment**

1. Law on Environment (Official Gazette of the Republic of North 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, 39/16 and 99/18);
2. Law on Waste Management ("Official Gazette of the Republic of North Macedonia" 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 and 63/16);
3. Law on Protection against Environmental Noise ("Official Gazette of the Republic of North Macedonia" No. 79/07, 124/10, 47/11 and 163/13);
4. Law on Ambient Air Quality (Official Gazette of the Republic of North Macedonia No. 67/04, 92/07, 35/10, 47/11, 59/12, 100/12, 4/13 and 10/15);
5. Law on Nature Protection ("Official Gazette of the Republic of North 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 and Packaging Waste Management ("Official Gazette of the Republic of North Macedonia" No. 161/09, 17/11, 47/11, 136/11, 6/12, 39/12, 9/13 and 39/16);
7. Law on Health and Safety of the Republic of North Macedonia (Official Gazette of the Republic of North 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 North Macedonia" No. 87/08, 6/09, 161/09, 83/10, 51/11, 44/12, 23/12, 23/13, 163/13, 180/14 and 146/15);
9. Law on Construction ("Official Gazette of the Republic of North Macedonia" No. 130/09, 124/10, 18/11, 36/11, 54/11, 59/11, 13/12, 144/12, 79/13, 137/13, 163/13, 27/14, 28/14, 42/14, 44/15, 129/15 and 39/16)
10. Law on Protection and Safety at the Workplace ("Official Gazette of the Republic of North Macedonia" No. 92/07, 136/11, 23/13 and 25/13)
11. Law on Protection of Cultural Heritage ("Official Gazette of the Republic of North

#### **4.4. World Bank Policies - Environmental Category**

##### **OP. 4.01 Environmental Assessment**

The LRCP is supported by the European Union and jointly implemented by the Cabinet of the Deputy Prime Minister of the Government for Economic Affairs, as the Fund Implementing Agency and the World Bank. The LRCP is categorized as a category B project, assuming that a certain level of adverse impact can be expected as a result of the implementation, but none of them as meaningful and long lasting. As a result of this classification, OP 4.01 Environmental Assessment has been activated. Thus, CDPMEA has prepared Environmental and social management framework (ESMF) as a Guide for Environment for sub projects supported by the grant scheme Component 3, and to define the procedures and to verify and assess the environment. All project activities (and sub-projects) should be implemented in accordance with ESMF, World Bank policies, as well as procedures and national regulations (the most rigorous prevailing).

The proposed sub-project is classified as Category B because of the fact that taking into account his nature, size and location, as well as features, its potential adverse environmental impacts are less adverse than those of category A. These impacts are location- specific; several of which are irreversible; and in many cases, mitigation measures can be designed on a ready-made basis than those from sub-projects of category A. The scope of the EA for sub-project B category can vary from one sub-project to another sub- project. In this case, the EA examines the negative and positive impacts of the sub-project and recommends the necessary measures to prevent, minimize, mitigate or compensate for adverse impacts.

The category to assess any potentially negative impact relates to the proposed sub- project, identifying potential environmental improvements and measures needed to prevent, minimize and mitigate adverse impacts. The scope and format of the EA Report will vary depending on the sub-project, but typically will be lower than the Environmental Impact Assessment Study, usually in the form of ESMP. The scope of ESMP is defined in Annex D of ESMF.

For sub-projects of category B+, the beneficiary/ contractor is responsible for the preparation of a) complete EIA Study (depending on the opinion received from the responsible institution (local or national) with ESMP or b) pre- EIA (simple form of EIA report) with EA Report which includes, if necessary, a reduced EIA scope, which requires a brief description of the impacts and determining well defined mitigation measures and adopting accepted practices for action and monitoring in form of ESMP. Costs for mitigation measures will be included in the EIA or ESMP and incorporated in the bidding documents.

The prepared EIA document, depending on the opinion of the responsible institution (MoEPP), will be included as an Annex to the ESIA prepared according to OP 4.01 by the World Bank.

##### **OP / BP 4.11 Physical Cultural Resources**

The Physical Cultural Resources Policy is activated when sub-projects in the sub-component 3-1 Infrastructure potentially include projects with direct or indirect impacts on immovable cultural resources.

For the sub-projects to activate this policy, a Plan for managing the activities for cultural heritage (Cultural Heritage Management Plan) is to be prepared. This plan is to be part of ESMP.

This practice addresses the physical cultural resources that are defined as movable or immovable objects, structures, groups of structures that have archeological, paleontological, historical, architectural, religious, aesthetic or cultural significance. Physical cultural resources can be over



or underground or under water. Their cultural significance can be from a local, regional or national level or within the international community. Physical cultural resources are important as sources of valuable scientific and historical information, as value for economic and social development and as an integral part of cultural identity. Most of the physical cultural resources are tourist attractions and it is possible that some of them are locations where potential projects under component 3 of the LRCP can be implemented.

#### **4.5. Institutional arrangements**

The Municipality of Strumica belongs to the group with a high number of the population. The municipality was established in 1976 under the Law on Territorial Division of the Republic of Macedonia, but with the new Law on Territorial Division of 2005, the borders of the municipality have been significantly reduced. It now covers an area of 321 km<sup>2</sup>. The total population of the municipality is 56,000 and represents 2.8 % of the total population of the Republic of North Macedonia. The population density is 175 inhabitants in 1 km<sup>2</sup>. The municipality is multiethnic and multicultural. The majority of the population is Macedonian origin, followed by, Turkish, etc. According to the Law on Decentralization of the Republic of Macedonia, the municipalities are responsible for urban planning, environmental protection, economic development, culture, social protection, education, etc.

Vision of the Municipality of Strumica is an open municipality with authentic multicultural values and partnership that provide development and quality of life for all citizens. The mission of the municipality is - open to the young, efficient and inspiring partner in the function of setting modern standards.

Within its administration, the Municipality of Strumica has Sector for Local economic development and environmental protection, which is consisted of Department for local economic development, Department for environmental protection and Department for international cooperation and European funds. In this Sector, Municipality of Strumica employs an authorized environmental inspector who is responsible for monitoring and protecting the environment and managing the waste. Also as part of the municipality administration operates the Sector for urbanism and communal affairs, which is consisted of Department for urbanism, Department for communal affairs and Department for management for construction land. In this Sector, Municipality of Strumica employs civil and communal inspectors. The environmental, civil and communal inspectors will actively participate in monitoring of implementation of envisaged mitigation measures of the project **"Economic Valorization of the Cultural and Alternative Tourist Offer of Tsar's Towers in Tourist Destination Strumica"**. In the following figure is shown the organogram of the internal organization of Municipal administration in Municipality of Strumica

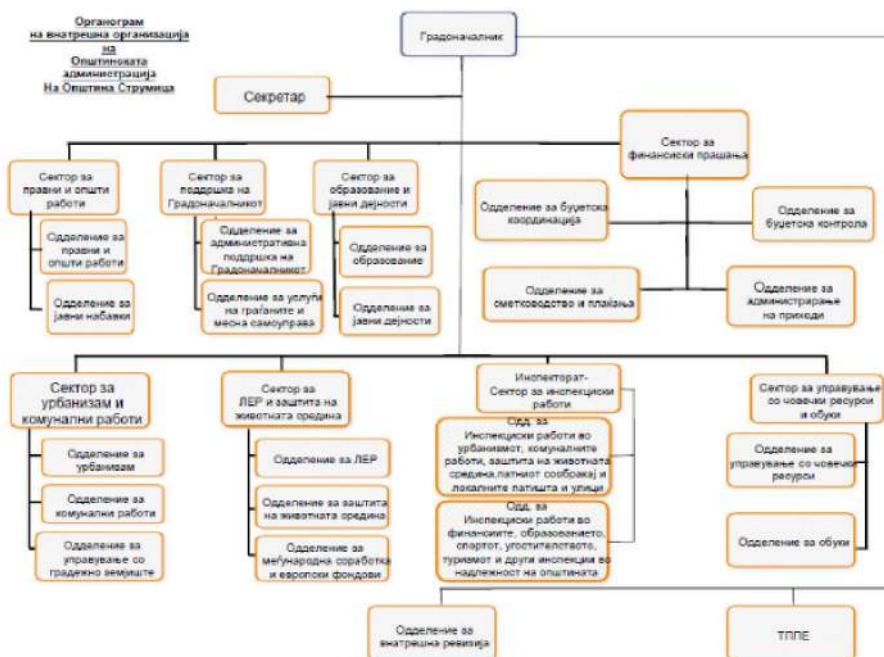


Figure 20 Organogram of the internal organization of Municipal administration in Municipality of Strumica

According to the Decision for declaring Tsar's Towers as a cultural heritage of special importance, for each activity in the location of Tsars Towers in connection with the construction and reconstruction, the Ministry of Culture must issue an approval based on a previous opinion from the National Institution Institute and Museum Strumica.

#### 4.6. Purpose of the Environmental and Social Management Plan and Cultural Heritage Management Plan / Process of public disclosure and consultation

The purpose of the Environmental and Social Management Plan for the project "Economic Valorization of the Cultural and Alternative Tourist Offer of Tsar's Towers in Tourist Destination Strumica" is to identify on time the environmental impacts that will arise from the realization of the projected project activities for which mitigation i.e. minimization, are proposed measures for environmental protection and the time period for implementation of the measures, with responsible persons for implementation of the Plan and the anticipated costs.

The public will be included in the procedure for assessing the impact of the project by organizing a public hearing in the premises of the Municipality of Strumica. The environmental and social management plan for the sub-project will be available in hard copy in the premises of the Municipality of Strumica and will be published on the website of the LRCP, the Agency for Promotion and Support of the Tourism and the website of the Municipality of Strumica where it will be available to the public in a period of 14 days. For consultation with the public, a printed form will be available in the premises of the Municipality of Strumica. Along with the ESMP will be a public call for participation in a public debate at the meeting (with given time and place). The public debate meeting will be organized at the end of the consultation period. Actively, the Applicant will inform and invite stakeholders including local NGOs, affected communities and with appropriate means. A contact person will be appointed to collect the comments regarding the Environmental and Social Management Plan and the Cultural Heritage Management Plan

submitted during the public disclosure period in the Plans, as well as during the public consultation and presentation and the same will be included in the Report of the held public consultation meeting that will be part of the Plan. This will make it possible to make the comments available to the applicants and to take relevant comments into account, and to incorporate responses to comments and remarks in the final Environmental and Social Management Plan and the Cultural Heritage Management Plan.

## **5. Impacts on the environment and cultural heritage**

Realization of the activities foreseen in the sub-project **"Economic Valorization of the Cultural and Alternative Tourist Offer of Tsar's Towers in the Tourist Destination Strumica"** can 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:

- Reconstruction phase (that covers all contraction activities foreseen in the sub-project),
- Operational phase.

### **5.1. Emissions**

In the reconstruction phase the following emissions are expected:

- Fugitive dust emission from reconstruction activities;
- communal waste, construction waste and biodegradable waste;
- sewerage and storm water;
- noise from construction activities;

In the operational phase, the following emissions are expected:

- communal waste;
- risks to safety of visitors,
- light impacts.

#### **5.1.1. Air emission**

Air pollution is caused by emission of pollutants from mobile and point 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.

#### **Reconstruction phase**

During the phase of implementation of the project activities of the subproject **"Economic Valorization of the Cultural and Alternative Tourist Offer of Tsar's Towers in the Tourist Destination Strumica"** following impacts on air quality were identified:

- Fugitive dust emission from reconstruction work;
- Emission of exhaust gases from construction machinery.

The dust that will be generated by predicted activities, represented by manual works (manual excavation, clearing existing trails, construction activities on the trails and fortress ramparts etc) can affect the near environment, which will depend of the size of the particles and conditions during activities, primarily because of the speed of the wind (which affect their distribution - transmission).

Emissions of exhaust gases in the air will be generated by transport machinery that will carry the tampon materials for the bicycle trail. The most common pollutants produced by the exhaust gases are SO<sub>2</sub>, NO<sub>x</sub>, CO, PM<sub>10</sub>, unburned carbohydrates, sulfur, lead, benzene and other aromatic hydrocarbons that contribute to the secondary production of ozone, and they are all present as a direct or indirect threat to human health and the environment.

The type and quantity of exhaust gases will depend primarily on the type of fuel, the condition of the vehicles, the frequency of movement and the duration of 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 engaged within this sub-project do not pose a threat to air quality.

During the reconstruction activities, the most sensitive receptors that will be exposed to emissions in the air will be employees and the biodiversity near the local road envisaged for reconstruction. The impact on air quality can be assessed as short-term, local, indirect, reversible, with a low intensity of environmental impact.

#### **Operational phase**

No air impacts are expected during the functioning of the predicted sub-project activities, maybe insignificant increased traffic, but without any major impacts.

#### **5.1.2. Water emission**

##### **Reconstruction phase**

During the reconstruction phase, from the sub-project activities, can only be expect emissions of sanitary water from the workers that will perform the foreseen activities. The amount of sanitary water will be very small and as a result of workers' hygiene needs (hand washing etc.). The possible impacts can be assessed as short-term, local, indirect, reversible, with a low intensity of environmental impact.

##### **Operational phase**

The only impact in the waters during the operational phase will be from the sanitary facilities that will be used by the visitors.

#### **5.2. Waste generation and management**

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

The general state of the waste management can be assessed as partially satisfactory, because it did not meet the criteria laid down in the European waste management directives, in particular with

regard to the collection of waste, the absence of an integrated waste management system and the state of municipal landfills, and the emergence of a large number of illegal landfills.

For cleaning, collection, transport and disposal of waste in the municipality of Strumica is responsible the Public enterprise for communal activities (PECA) "Komunalec". The purpose of this sector is to meet the needs of citizens and working people in terms of communal hygiene. These include: the collection, transportation and disposal of waste from individual residential areas, the use of legal entities, the craft and commercial shops, its removal and lodging as well as the cleaning of public circulation areas (streets, squares, etc.).

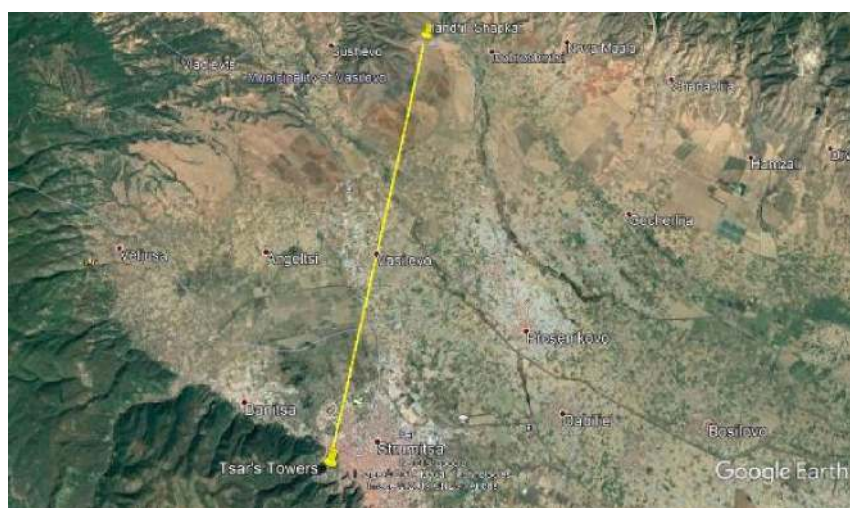


Figure 21 Satellite image from location of the landfill Shapkar and sub-project location.

### Reconstruction phase

During the activities of the sub-project "Economic Valorization of the Cultural and Alternative Tourist Offer of Tsar's Towers in the Tourist Destination Strumica", communal waste from workers, construction waste, waste from excavation (earthen material), and the occurrence of biodegradable waste will be generated in reconstruction phase.

Waste producers 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 will not be reused, must be disposed at a licensed legal landfill. Contractor of the reconstruction work will have to sign contract with a licensed communal enterprise that would collect and transport the generated waste. In this phase, hazardous waste generation is not expected, but if any, it is necessary to collect and transport it by a company licensed/specialized in the management of the particular type of hazardous waste.

Types of waste generated during the reconstruction activities of the reconstruction of the section,



as well as the manner of its treatment are given in the following table:

**Table 1 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)
<b>Reconstruction phase</b>	1	Mixed communal waste	20 03 01	Cannot determine	Temporary storage in containers located at reconstruction site	Licensed company for handling this type of waste
	2	Organic waste (plants, roots, shrubs, etc.)	20 02	The exact quantity cannot be determined	Temporary storage in containers located at reconstruction site	Licensed company for handling this type of waste
	3	Construction waste	17 03 02	The exact quantity cannot be determined	Temporary storage in containers located at reconstruction site	Licensed company for handling this type of waste
	4	Earth material	17 05 06	The exact quantity cannot be determined	Storage at an designated adequate location until reuse (if possible) or disposal of a licensed legal landfill for construction waste	Licensed company for handling this type of waste
<b>Operational phase</b>	5	Mixed communal waste (from picnic area)	20 03 01	The exact quantity cannot be determined	Temporary disposal in containers and transport and disposal at licensed legal landfills	Licensed company for handling this type of waste

### **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 will oblige licensed waste management company to regularly and appropriately collect the generated municipal waste and transport it to the legal landfill.

### **5.3. Soil emissions**

The impacts on the soil during the realization of the project activities will be insignificant, due to the small scale of the planned activities.

### **Reconstruction phase**

At this phase, the following impact can occur:

- Inadequate management of the generated waste on the site.

- Soil erosion and landslides.

#### **Operation phase**

No impacts on soil are expected during the operational phase.

### **5.4.Noise and vibration**

#### **Reconstruction phase**

During the realization of the foreseen project activities there will be an increased level of noise as a result of predicted sub-project activities.

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. 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 2 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 location will be in Area with I degree of noise protection, space intended for **tourism and recreation**, areas near medical equipment and hospitals, and area of national parks and nature reserves.

#### **Operational phase**

During the operational phase only noise that will occur on the locations of the sub-project will be noise from the visitors of the archeological site and on the walking and bicycle trails.

#### **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 will occur in the reconstruction and operational phase. There are not rare and endangered species of flora and fauna as well as protected areas of nature in or near locations where project activities are planned (route of the existing mountain bike path as well as both of the hiking paths). The location is not in vicinity of protected areas, so no critical or natural habitats will be endangered.

#### **Reconstruction phase**

In this phase, the impacts on the surrounding biodiversity can occur as a result of the predicted activities for preparation of the towers ramparts and cleaning of the walking and bicycle trails from the low vegetation. The impacts will be manifested through removal of low grass vegetation and shrub vegetation.

#### **Operation phase**

No impacts on biodiversity are expected during the operational phase.

#### **5.6. Light pollution**

In the operational phase of the sub-project, with the installation and operation of lighting of the "Tsar's Towers", impact of light pollution will occur.

Due to the vicinity of the town Strumica, the position of the archeological site in relation to the town and due to the amount of light from town of Strumica, the impact from light pollution will be local and with small intensity.

#### **5.7. Social impacts**

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

#### **5.8. Impacts on Occupational health and safety and safety of visitors and local population.**

#### **Reconstruction and operational phase**

Given the fact that the location of the sub-project activities are in the vicinity of the town Strumica and due the fact that the walking and bicycle trails are used for recreational use, there is a potential

risk for the safety of local population that will be using the trails during the reconstruction phase. During the reconstruction phase most exposed to possible safety risks will be the engaged workers. The highest risk will be working on high during the conservation of the fortress tower and ramparts.

Other possible adverse health and safety impacts to workers, local population and visitors are:

- Non-compliance with national health and safety at work procedures;
- Non-compliance with local community safety regulations;
- Increased level of dust;

These impacts are local and limited to the period envisaged for realization. There is a possibility of adverse safety and health impacts to the workers, due to noncompliance with national health and safety at work procedures. These impacts are local, limited to the locations of reconstruction and construction and limited to the construction period, without possibility to be long term and with repetitive occurrence.

#### **Operation phase**

During operational phase highest risk for the visitors will be during visit of the highest parts of the archeological site "Tsar's Towers", especially in case if these parts are not appropriate marked and secured.

### **5.9. Impacts on cultural heritage**

The possible impacts on cultural heritage that can occur during the realization of the sub-project activities are analyzed and described in the "Cultural heritage management plan for the project "Economic valorization of the cultural and alternative tourist offer on the "Tsar's Towers" in the tourist destination Strumica as given in Annex 3.

## **6. Measures for avoidance, mitigation and reduction of impacts on the environment and cultural heritage**

Mitigation measures are described in this section, and detailed mandatory mitigation measures are provided in a table in the chapter on the Mitigation (Table 4) and Monitoring Plan (Table 5). 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 mitigation and monitoring plan:

1. Contractor (company selected in the tender)
2. Supervision engineer
3. Applicant (Beneficiary) - Municipality of Strumica.

### **6.1. Air**

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

- spraying with water to reduce the amount of fugitive dust;
- avoiding work mechanization in the so-called "idle" (for transport mechanization);
- determination of the period for machine operation;
- residents / sensitive receptors will be informed about construction activities and working hours;
- Implementation of regular periodic and preventive maintenance of equipment and construction machinery in order to reduce emissions.

### **6.2. Water**

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

- Carrying out regular maintenance of equipment and vehicles and periodic repairs according to procedures in order to reduce leakage, emissions and dispersion.
- For transport to be used the existing access roads;
- Careful selection of the location for storage of building material, warehouses / temporal disposal of the construction waste (in coordination with responsible municipal staff);
- No waste of any type will be discarded into the environment, including water bodies;
- Watercourses, if any, will be isolated from the works;
- There will be surface runoff management to prevent water pollution;
- No contaminated water will be released to the environment without a prior treatment;
- Soil erosion measures will be applied wherever necessary.

- Mobile toilets should be placed on appropriate locations, emptied and maintained regularly by authorized companies to the authorized treatment plants.

### **6.3.Waste**

During the reconstruction 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;
- Storage 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. There will be no waste types mixing;
- Establishing contact with authorized collectors, transporters of different fractions of waste and enabling its safe final disposal only to a licensed landfill;
- Reconstruction activities will end (finish) only after all waste materials have been removed (no waste must be left on the construction site)/ collected by authorized company;
- It is forbidden to burn waste at the reconstruction site.

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

#### **Operational phase**

During the functioning of the sub-project activities, the entity that will manage the trails and the archeological site, must prepare and implement appropriate waste management plan.

### **6.4. Soil**

The area of the reconstruction site will be limited on the fortress (Tsar Towers) and existing mountain bike path with its embankments and drainage objects and hiking paths.

- Carrying out all necessary geo-technical research and testing and obtaining all relevant and permits and opinions;
- Apply soil stability measures and measures for prevention of landslides;
- Careful planning of the reconstruction works in order to reduce the negative effects and ensure the prevention of soil pollution;
- Reducing the size of the site due to the minimization of the land that will receive negative impact;
- All of the hazardous materials as fuels, lubricants, glues as well as packaging waste and hazardous wastes (if any) 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, snow, wind);



- Protection of construction materials and stopping of construction activities in conditions of torrential rains;
- The area of the reconstruction site will be limited;
- 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);
- Soil erosion prevention will be applied at vulnerable locations.

#### **6.5. Noise**

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

- Reconstruction activities can only take place during the daytime (07-19h);
- Reconstruction activities should be planned appropriately to reduce the use time of the equipment that creates the most intense noise;
- Use of best building practices with particular emphasis on noise levels.

#### **6.6. Biodiversity (flora and fauna)**

For mitigation of the identified impacts it is recommended that the area that should be cleaned from low grass and shrub vegetation should be as small as possible. Only the necessary surface should be cleaned. There will be no wood cutting on the site. The removal of individual trees will be carried out only with written permission from the competent authorities (Macedonian Forests) and written notification to Municipality of Strumica.

It is forbidden to collect firewood from and around the workspace; also it is forbidden ignition on fire within the location of the sub-project. Animal harassment and the collection of plants in that area are prohibited.

#### **6.7. Light**

For mitigation of the light pollution from the lightning of the ramparts and towers, adequate lightning equipment (reflectors) should be installed, with adequate angle towards the archeological site and design to minimize light pollution. Selected street lights will be designed to minimize light pollution.

#### **6.8. Social aspects**

For mitigation of the possible social impacts, Municipality of Strumica should prepare and implement appropriate grievance mechanism for local population and visitors.

#### **6.9. Occupational health and safety and safety of visitors and local population.**

During the reconstruction phase, for mitigation of the possible impacts on health and safety of the local population that is using the walking and bicycle trails the following measures should be implemented:

- Fences and information signs around the location need to be provided and maintained during the reconstruction works;
- Visitors are not allowed in the working site. The working site will be fenced off in a way and width that ensures safety of communities and visitors of the surrounding area (e.g. hikers).
- Information of the local population for the project activities through local media.

For mitigation of the possible impacts on health and safety of the workers during the reconstruction phase the following measures should be implemented:

- Compliance with applicable legislation which refers to Occupational health and safety;
- Regular usage of the personal protective equipment;
- Accessibility to health and injury protection first aid kits;
- Appropriate marking of the sub-project locations covered by project activities;
- Fences and information signs around the location need to be provided and maintained during the reconstruction works.
- Adequate protective measures for working on heights (safety vests and belts for working on heights)
- Regular checks for the scaffolds;
- Regular check of the equipment and tools that will be use;
- All workers must be aware of the dangers of fire and firefighting measures and must be trained to deal with fire extinguishers, hydrants and other devices used to extinguish fires.
- Installation and maintenance of mobile toilets on the site,
- Ensuring the safe access to the site to workers and safe working conditions;
- All dangerous spots and paths will be clearly marked and fenced off.
- All street furniture installed under the project e.g. gazebos, swings, toys, etc. need to be attested and certified for safety.

During the operational phase, for mitigation of the possible impacts on health and safety of the visitors of the archeological site, the following measures must be implemented:

- Installation of protective fence, on the locations that have risk of falling from heights
- Placement of information signs for the possible risks along entire archeological site
- Installation and maintenance of mobile toilets on the archeological site and their regular maintenance
- Installation of protective fence, along the walking trails, on places that have risk of falling

from high

- Preparation of Fire protection elaborate, according national regulation, together with evacuation scheme
- Permanent provision of first aid kits on the archeological site.
- All street furniture installed under the project e.g. gazebos, swings, toys, etc. need to be regularly maintained, attested and certified for safety.

**The measures in the operational phase that are the part of the Phase IV implementation package that is associated activity and as such is a subject to environmental review under the LRCP Project, must comply with the ESMF and applicable WB policies and procedures. For these activities, the Borrower will prepare ESMP subject to the WB approval.**

**No visitors will be allowed on the site until all safety measures envisaged in the Phase IV and other needed to ensure safety of visitors and employees are implemented.**

#### **6.10. Cultural heritage**

The mitigation measures for possible impacts on cultural heritage that can occur during the realization of the sub-project activities are analyzed and described in the Cultural heritage management plan (CHMP) for the project "Economic valorization of the cultural and alternative tourist offer on the "Tsar's Towers" in the tourist destination Strumica.

## **7. Monitoring the application of measures for avoiding, mitigating and reducing the impacts on the environment and cultural heritage**

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

The main mitigation / mitigation activities are described in Table 4.

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

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

Implementation of the ESMP defined measures will be monitored by the supervisor/supervising engineer, the authorized and/or state environmental and communal inspector as well as PIU environmental expert.

An acceptable monitoring report from the contractor or site supervisor would be a condition for full payment of the contractually agreed remuneration, the same as technical quality criteria or quality surveys.

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

The beneficiary (Municipality of Strumica) is obliged to regularly submit quarterly reports on the implementation and monitoring of environmental mitigation measures (e.g. in the form of a tabular overview (tables mitigation plan and monitoring plan) with an additional column giving the status of the measures, observations and comments, and Monitoring of the measure (implemented / not implemented, results, observations, comments, concerns, when, etc.).

## 8. Environmental and social mitigation plan – Municipality of Strumica

Table 4. Mandatory mitigation measures plan					
Activity	Expected Environmental Impact	Mitigation Measure	Responsibility for Implementing Mitigation Measure	Period of Implementing Mitigation Measure	Cost associated with implementation of mitigation measure
Workers and local population					
<b>Design/Preconstruction phase</b>					
Design/Preconstruction phase - All activities	Possible adverse social and health impacts for the workers and local population as a result of non-compliance with the safety measures	<ul style="list-style-type: none"> <li>- Planning of the time for startup of the project activates.</li> <li>- Public is informed of works through Notification at Municipality Notice Board and web site and through other means, if needed.</li> <li>- All needed permits, opinions and decisions have been obtained before the works commence, including geotechnical studies and related approvals. Operational permits are obtained in line with the national regulation.</li> <li>- Local and Environmental and Labor inspections have been notified of works before they start.</li> <li>- Set up a special traffic regime, approved by the competent authority (e.g. traffic police);</li> <li>- safety measures for use of urban</li> </ul>	Municipality of Strumica, contractor, supervising engineer	Prior to start of reconstruction works	the expenditure is included in budget

		equipment are included into the design; - Develop Accidental Situation Plan and Procedures with a focus on water contamination risks. Urban equipment is designed in a safe manner, attested and certified. No new trail, extensions and widenings of trails are designed or envisaged in the project. No new access roads will be made under the project. Installation and purchase of transformers, overheads or similar electrical installations are envisaged under the project.			
	Light pollution	Selection/design of lamps/street lights/reflectors will include light pollution minimization.	Municipality of Strumica, contractor, supervising engineer	Prior to start of reconstruction works	the expenditure is included in budget
<b>Associated facilities/activities – all phases</b>	Associated facilities/activities environmental, OHS and community impact	ESMP for works on associated facilities/activities, in particular under the Phase IV described in the CHMP for this sub-project (Annex III of this document) will be prepared, approved by the PIU and WB Environmental Specialist and consulted prior to works.	Municipality of Strumica, contractor, supervising engineer	Prior to start of reconstruction works	the expenditure is included in budget
<b>Reconstruction phase</b>					
Construction phase – all works	Possible adverse social and health impacts for the workers, visitors and local population as a result of non-compliance with the safety measures	- Contractor and subcontractors have valid operating licenses; - Implementation of Good construction practices during the reconstruction phase including: - Ensure proper marking of the project locations with tapes and warning signs as well as fencing off parts of construction that are dangerous and where necessary for any reason;	Participants related to the performance of reconstruction activities	During the reconstructive phase of the project activities	the expenditure is included in the bill of quantities



		<ul style="list-style-type: none"> <li>- safe access for workers to the working site is and safe working conditions are ensured;</li> <li>Fences and protective rails are installed at all dangerous locations and paths;</li> <li>- Installation of signs for reducing / limiting of the vehicle speeds near the project location</li> <li>- Access of non-authorized personnel within the project locations is not allowed.</li> <li>- Ensure good organization of the site and housekeeping;</li> <li>- Safe passages are provided for pedestrians;</li> <li>- Set up of vertical signalization and signs at the beginning of the reconstruction site;</li> <li>- 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.</li> <li>- Workers must be adequately trained, certified and experienced for the work they are performing</li> <li>- Devices, equipment and fire extinguishers should be always functional, so in case of need they could be used rapidly and efficiently.</li> <li>- First aid kits should be available on the site and personnel trained to use it.</li> <li>- Procedures for cases of emergency (including spills, accidents, etc.) are available at the site.</li> <li>- Wearing protective equipment and clothes (hardhats, etc.) at all times.</li> </ul>			
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		Urban equipment is installed in a safe manner, attested and certified for safe use. Installation of large electrical installation are not a part of the project (e.g. transformers);			
Impacts on the air					
Construction phase – all works	<ul style="list-style-type: none"> <li>- Appearance of fugitive dust during reconstruction activities</li> <li>- exhaust gases from construction machinery</li> </ul>	<ul style="list-style-type: none"> <li>- Spraying with water on windy and dry days to reduce the amount of fugitive dust;</li> <li>- Prevent dusting during upload and unload;</li> <li>- Residents / sensitive receptors will be informed about construction activities and working hours;</li> <li>- Vehicles loads likely to emit dust must be covered</li> <li>- Locate stockpiles away from drainage lines, natural waterways and places susceptible to land erosion</li> </ul>	Participants related to the performance of reconstruction activities	- During the reconstructive phase of the realization of the project activities	the expenditure is included in the bill of quantities
Impacts on water and soil					
Construction phase – all works	<ul style="list-style-type: none"> <li>- Discharge of waste water from workers</li> <li>- Accident of construction equipment</li> <li>- Blur the waters through the input of construction material or waste</li> </ul>	<ul style="list-style-type: none"> <li>- Careful selection of the location for building materials, warehouses/temporary storage of construction waste; location must be defined/approved by the Municipality.</li> <li>- The excavated earthen material should be adequately temporarily disposed to the designated, municipality approved area to ensure that it is not deposited in the aquatic environment;</li> <li>- Dumping any materials to watercourses or natural environment is strictly forbidden;</li> <li>- No mineral or other waste is to be</li> </ul>	Participants related to the performance of reconstruction activities	- During the reconstructive phase of the realization of the project activities	the expenditure is included in the bill of quantities

		<p>stored near watercourses;</p> <ul style="list-style-type: none"> <li>- No water will be released to a natural recipient without a prior treatment and no water will be released into the lake or its tributaries;</li> <li>- Prevent hazardous spillage coming from waste (temporary waste storage will be leakage-proof and those for hazardous or toxic waste equipped with secondary containment system, e.g. double walled or bunded containers).</li> <li>- If hazardous spillage occurs, curb and remove it, clean the site and follow procedures and measures for hazardous waste management.</li> </ul> <p>In the case of any run-off coming from works area possibly contaminated by hazardous substances shall be collected on site to a temporary retention basin and transported to an adequate licensed waste water treatment plant.</p> <ul style="list-style-type: none"> <li>- Install/provide and maintain of proper sanitary facilities for workers. The wastewater from these sources should be transported to proper waste water treatment facilities.</li> <li>- Working site run-offs with possible charge with suspended matter should be contained, spillage to natural flows is forbidden.</li> </ul> <ul style="list-style-type: none"> <li>- Protection of construction materials and stopping reconstruction activities in conditions of heavy rains;</li> <li>- All hazardous materials, must be placed in special appropriate containers locked at construction site, protected from extreme weather conditions;</li> </ul>			
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		<ul style="list-style-type: none"> <li>- Carry out surface drainage works to divert rainwater that would erode the soil;</li> <li>Water for the construction will be supplied from the existing sources and there will be no new wells or use of natural water bodies/courses.</li> <li>- No anticorrosive will be applied at the site. No toxic dyes and coatings will be used;</li> <li>- Apply stormwater management and soil erosion prevention measures.</li> </ul> <p>In the case of water contamination, notify the competent authorities immediately (including water supply company).</p>			
Impacts on soil					
Construction phase – all works	<ul style="list-style-type: none"> <li>- Fugitive emission of dust;</li> <li>- Inadequate management of generated waste at a location;</li> <li>- Pollution of groundwater and soil can occur in case of accidents and emergencies.</li> </ul>	<ul style="list-style-type: none"> <li>- Careful planning of the reconstruction works in order to reduce the negative effects</li> <li>- Soil stability measure and prevention of landslides will be applied where needed;</li> <li>- No new trails, extension or widening of trails will be carried out.</li> <li>- Reducing the size of the site due to the minimization of the land that will suffer a negative impact</li> <li>- All hazardous materials, must be placed in special appropriate containers located at the construction site, protected from extreme weather conditions</li> <li>- Protection of building materials and</li> </ul>	Participants related to the performance of reconstruction activities	<ul style="list-style-type: none"> <li>- During the reconstructive phase of the realization of the project activities</li> </ul>	the expenditure is included in the bill of quantities

		<p>stopping reconstruction activities in conditions of heavy rains.</p> <ul style="list-style-type: none"> <li>- The area of the reconstruction site should be limited.</li> <li>- All purchase of gravel and sand, including places where the excess of the excavated material will be disposed, must possess appropriate permission / approval. There will be no taking mineral material (gravel, sand, stone, etc.) from the surrounding.</li> <li>- In case of occurrence of contaminated soil from the eventual release of oils from the construction mechanization, contaminated soil should be removed and treated as hazardous waste.</li> </ul>			
Waste generation					
Construction phase – all works	<ul style="list-style-type: none"> <li>- Generation of mixed communal waste</li> <li>- Construction waste from reconstruction activities</li> <li>- Earth material</li> <li>- biodegradable waste</li> </ul>	<ul style="list-style-type: none"> <li>- Selection of the generated waste</li> <li>- Identification and classification of waste according the national List of Waste (Official Gazette no.100/05),</li> <li>- Determination of waste characteristics;</li> <li>- Storage on places designated for that purpose;</li> <li>- Landfills for temporarily and final disposal must be licensed, and approved by the Municipality;</li> <li>- Containers for each identified waste category are provided in sufficient quantities and positioned conveniently.</li> <li>- Waste collection and disposal pathways and licensed landfills/processing plants will be identified for all major waste types expected from demolition and construction activities. For management</li> </ul>	Participants related to the performance of reconstruction activities	<ul style="list-style-type: none"> <li>- During the reconstructive phase of the realization of the project activities</li> </ul>	the expenditure is included in the bill of quantities

		<p>of hazardous wastes, instructions/guidelines from Ministry of Environmental Protection and Physical - Planning will be sought and followed.</p> <ul style="list-style-type: none"> <li>- Whenever feasible the contractor will reuse and recycle appropriate and viable materials. Discarding any kind of waste (including organic waste) or waste water to the surrounding nature or water-bodies is strictly forbidden.</li> <li>- Collect, transport and final disposal/processing of the communal waste by a licensed company</li> <li>- 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</li> <li>- All waste will be collected and disposed adequately by licensed collectors and to licensed landfills;</li> <li>- Reconstruction activities will end (finish) only after all waste materials have been removed (no waste must be left on the construction site)/ collected by authorized company</li> <li>- It is forbidden to burn waste at the construction site or anywhere else;</li> <li>- A waste that is generated during the stay and work of the Contractor employees, applying the best management practices, will be collected, transported and deposited in a licensed legal landfill</li> </ul>			
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Construction phase – all works	<ul style="list-style-type: none"> <li>- Toxic / hazardous materials and waste management IF ANY</li> </ul>	<ul style="list-style-type: none"> <li>- Temporarily storage on site of all hazardous or toxic substances (including wastes) will be in safe containers labeled with details of composition, properties and handling information. Chemicals are managed, used and disposed, and precautionary measures taken as required in the Material Safety Data Sheets (MSDS)</li> <li>- Hazardous substances (including liquid wastes) will be kept in a leak-proof container to prevent spillage and leaking. This container will possess secondary containment system such as bunds (e.g. bunded-container), double walls, or similar. Secondary containment system must be free of cracks, able to contain the spill, and be emptied quickly.</li> <li>- The containers with hazardous substances must be kept closed, except when adding or removing materials/waste. They must not be handled, opened, or stored in a manner that may cause them to leak.</li> <li>-The containers holding ignitable or reactive wastes must be located at least 15 meters (50 feet) from the facility's property line. Large amounts of fuel will not be kept at the site.</li> <li>- The wastes are never mixed and are transported by specially licensed carriers and disposed/processed only in a licensed facility.</li> <li>- Paints with toxic ingredients or solvents or lead-based paints will not be used.</li> </ul>	Participants related to the performance of reconstruction activities	<ul style="list-style-type: none"> <li>- During the reconstructive phase of the realization of the project activities</li> </ul>	the expenditure is included in the bill of quantities
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		<ul style="list-style-type: none"> <li>- Hazardous waste will be transported and handled only by licensed companies in line with the national regulation.</li> <li>- Hazardous waste will be disposed only to licensed landfills or processed in licensed processing plants</li> </ul>			
	- Materials management	<ul style="list-style-type: none"> <li>- No new materials containing asbestos or lead-based paint will be used.</li> <li>- Mineral resources (aggregate, sand, gravel, etc.) are procured only from licensed companies with valid concessions for extraction/exploitation. The supplying companies can prove H&amp;S measures and environmental management is in place.</li> <li>- Ensure all transportation vehicles have been equipped with appropriate emission control equipment, regularly maintained and attested.</li> <li>- All materials have to be approved by the site engineer.</li> <li>- there will be no quarrying at the site and no new quarries will be open due to the project;</li> <li>- stone materials used in reconstruction will be of the same quality and obtained locally if possible, in line with the CHMP.</li> </ul>		-	
Impacts due to increased noise level					
Construction phase – all works	- Increased noise level as a result of reconstruction activities	<ul style="list-style-type: none"> <li>- Construction activities can only take place during the daytime (07-19h)</li> <li>- Construction activities should be planned appropriately to reduce the use time of the equipment that creates the</li> </ul>	Participants related to the performance of reconstruction activities	- During the reconstructive phase of the realization of the project activities	expenditure is included in the bill of quantities

		<p>most intense noise.</p> <ul style="list-style-type: none"> <li>- Noise limits set in the national legislation will not be exceeded.</li> </ul>			
Construction phase – all works	- Cultural Heritage (chance findings)	<p>In the case of chance findings, the works must be stopped immediately and competent authorities, (Ministry of Culture, Directorate for Protection of Cultural Heritage – Skopje and Museum and Institute Strumica), informed within 24 hours following the national procedures. Works will recommence upon approval of competent authorities.</p>	Participants related to the performance of reconstruction activities	- During the reconstructive phase of the realization of the project activities	expenditure is included in the bill of quantities
Construction phase – all works	- Impact to biodiversity	<ul style="list-style-type: none"> <li>- The working site will take minimal space needed;</li> <li>- Open fires and burning of waste is strictly forbidden;</li> <li>- Pouching and other types of disturbance of animals and collection of plants and forest products is strictly prohibited;</li> <li>- When replanting or greening the site, only native plants will be used;</li> <li>- There will be no felling on the site. The removal of individual trees will be carried out only with written permission from the competent authorities (Macedonian Forest Company) and written notification to Municipality of Struga;</li> <li>- if any greening is carried out, it will be with the native plant species only;</li> <li>- no new access roads or trails will be made as well as no extensions or widening.</li> <li>- barriers will be installed to trails and</li> </ul>	Participants related to the performance of reconstruction activities	- During the reconstructive phase of the realization of the project activities	expenditure is included in the bill of quantities

		hiking/biking paths to prevent motorized vehicles (cars, motors and similar) to use them.			
<b>Operative phase</b>					
<b>Waste management</b>					
	- Generate communal waste from visitors and users on the local road	- Concluding an agreement with a licensed waste management company for collecting and transporting generated waste to a licensed landfill; - Chemical toilets will be regularly maintained and emptied by the licensed company.	- Beneficiary	In the phase of using the local road, hiking trails and urban equipment	pending on the tariff of the Municipal Communal Enterprise,
Safety of the visitors					
	- Safety of the visitors of the archeological site	- Ensure safe access to visitors and employees and overall safe conditions of the site in the operational phase. - Installation of protective fence, on all locations that have risk of visitors or employees falling; - Placement of information signs for the possible risks along entire archeological site - Installation and maintenance of mobile toilets for employees and visitors - Installation of protective fence, along the walking trails, on places that have risk of falling from high - Preparation of Fire protection elaborate, according national regulation, together with evacuation scheme and adequate equipping;	- Beneficiary	In the phase of using the local road, hiking trails and urban equipment	pending on the tariff of the Municipal Communal Enterprise,

		<ul style="list-style-type: none"> <li>- Permanent provision of first aid kits on the archeological site;</li> <li>- Toys, swings and other street furniture is attested and certified for safety before the use as well as regularly maintained. The maintenance plan is developed before operational phase, carried out and responsible person appointed.</li> <li>- Protective fences and rails are regularly tested for safety;</li> <li>- No motor vehicles are allowed on biking and other trails.</li> <li>- Barriers and warning posts/signage are in place at trails, site, playground and other places where needed.</li> </ul> <p><b>No visitors will be allowed on the site until all safety measures envisaged in the Phase IV and other needed to ensure safety of visitors and employees are implemented.</b></p>			
Table 4. Mandatory mitigation measures plan					

## 7.1. Monitoring Plan – Municipality of Strumica

Table 5 Monitoring plan					
What	Where	How	When	By Whom	How much
Parameter is to be monitored?	Is the parameter to be monitored?	Is the parameter to be monitored (what should be measured and how)?	Is the parameter to be monitored (timing and frequency)?	Is the parameter to be monitored– (responsibility)?	is the cost associated with implementation of monitoring
<b>Preconstruction phase</b>					
1. Checking the necessary documentation (permits, studies, EIA Report, associated facility ESMP, etc.)	- Offices of the municipality of Strumica	Visual inspection of the necessary documentation	Before the start of the reconstruction activities	Supervision engineer, municipality representative, LRCP EE,	- Included in sub-project budget
2. Notification of public and relevant institutions	- Offices of the municipality of Strumica	Visual inspection of the necessary documentation	Before the start of the reconstruction activities	Supervision engineer, municipality representatives, environmental inspectorate LRCP EE,	- Included in sub-project budget
<b>Reconstruction phase</b>					
3. Occupational health and safety measures for workers, Safety measures for local workers; Safety of pedestrians; use of protective equipment Safety of street furniture and equipment	- All works	Verification of documentation and visual checks during the execution of the reconstruction works	During preparatory work and constantly in the course of reconstruction work	Supervision engineer, municipality representatives, environmental inspectorate LRCP EE,	- Included in sub-project budget
4. Occurrence of fugitive dust during reconstruction activities Exhaust emissions from transport vehicles	- All works	Visual inspection of the presence of dust and exhaust gases; measuring in the case of complaints or negative inspection findings	Constantly during the performance of reconstruction work	Supervision engineer, municipality representatives, environmental inspectorate LRCP EE,	- Included in sub-project budget

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*Environmental and social management plan for sub-project*

<i>Economic</i>	5. Discharge of waste water from workers Accident of construction machinery Blur the waters through the input of construction material or waste	- All works	Visual inspection of the presence of oil stains on the soil Visual inspection for discharges and oil stains in the nearest water body; sampling and laboratory testing in the case of contamination	Constantly during the performance of reconstruction work	Supervision engineer, municipality representatives, environmental inspectorate, LRCP EE,	- Included in sub-project budget
	6. Inadequate management of generated waste at a location; Pollution of groundwater and soil can occur in case of accidents and emergencies.	- All works	Visual inspection of the presence of oil stains on the soil; sampling and laboratory testing in the case of larger spills	Constantly during the performance of reconstruction work	Supervision engineer, municipality representatives, environmental inspectorate LRCP EE,	- Included in sub-project budget
	7. Generation of mixed communal waste Construction waste from construction activities Earth material scratched asphalt; waste management and adequate collection, transport and disposal	- All works	Physical selection of waste by type of waste Control of documentation for handed over waste to licensed companies; Visual inspection for inadequate temporarily (disposed) waste and all other mitigation measures given in mitigation plan; Municipality approvals; waste records	Constantly during the performance of reconstruction work	Contractor, Supervision engineer, municipality representatives, environmental inspectorate LRCP EE,	- Included in sub-project budget
	8. Occurrence and generation of hazardous waste from construction activities	- All works	Visual inspection of the presence of hazardous waste; check waste records; Control of documentation for handed over waste to licensed companies;	Constantly during the performance of reconstruction work	Contractor, Supervision engineer, municipality representatives, environmental inspectorate, LRCP EE,	- Included in sub-project budget
	9. Increased noise level as a result of reconstruction activities	- All works	Auditive noise level assessment; measuring in the case of complaints or negative inspection findings.	Constantly during the performance of reconstruction work	Contractor, Supervision engineer, municipality representatives, environmental inspectorate LRCP EE,	- /

Operative phase					
Waste management					
1. Generate communal waste from visitors of the archeological site "Tsar's Tower"; appropriate waste management Maintaining safety of street furniture and equipment	Archeological site "Tsar's Tower", Walking and bicycle trails Street furniture, swings, toys, playground.	Visual inspection of the presence communal waste	According to the dynamics of the Public Utility Company	Public Utility Company	- /
2. General population and visitors health and safety	Archeological site "Tsar's Tower", Walking and bicycle trails Fire prevention Safety of rails	Technical inspection of the properly installed equipment for safety of the visitors	before the opening of the sub-project activities	Municipal civil inspector	- /
Table 5 Monitoring plan					

## ANNEXES

ANNEX 1 Conservation approval for Annex 2 of the approved project for conservation, restoration and partial reconstruction of the ramparts at the "Tsar's Towers" archeological site in Strumica

  
Република Северна Македонија  
Министерство за култура  
УПРАВА ЗА ЗАШТИТА НА КУЛТУРНОТО НАСЛЕДСТВО

УПБр. 08-892  
15.11.2012 година  
Скопје

ДО  
ОПШТИНА СТРУМИЦА  
ул. „Сандо Масев“ бр.1  
2400 Струмица

**Предмет:** Доставување Конзерваторско одобрение

Во прилог на ова писмо ви го доставуваме Конзерваторско одобрение за Анекс 2 на Основен проект за конзервација, реставрација и делумна реконструкција на бедемите во археолошкиот локалитет Цареви Кули во Струмица и еден (1) заверен проект.

Со почит,


  
Директор,  
Ацо Косилов

Прилог: Конзерваторско одобрение и еден (1) заверен проект

5  Управа за заштита на културното наследство

Ул. „Лавен Шатер“ бр. 3, Скопје; Т.Факс 220  
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Република Северна Македонија  
Министерство за култура  
УПРАВА ЗА ЗАШТИТА НА КУЛТУРНОТО НАСЛЕДСТВО

УПБр. 08-892  
15.11.2019 година  
Скопје

УПРАВАТА ЗА ЗАШТИТА НА КУЛТУРНОТО НАСЛЕДСТВО, орган во состав на Министерството за култура со својство на правно лице, врз основа на член 87 од Законот за заштита на културното наследство („Службен весник на Република Македонија“ бр.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, 39/16 и 11/18), по барање на Општина Струмица (бр. 23-136/17 од 13.11.2019 год.) издава,


**КОНЗЕРВАТОРСКО ОДОБРЕНИЕ**


за Анекс 2 на одобрениот проект за конзервација,  
реставрација и делумна реконструкција на бедемите  
во археолошкиот локалитет Цареви Кули во  
Струмица

1. На Општина Струмица, се издава конзерваторско одобрение за реализација на Анекс 2 за конзервација, реставрација и делумна реконструкција на бедемите во археолошкиот локалитет Цареви Кули во Струмица, изработен од страна на „Универзал градба“ - Струмица (тех.бр. 02/178 од 10.2019 год.), а во согласност со одобрениот Основен проект за конзервација, реставрација и делумна реконструкција на бедемите во археолошкиот локалитет Цареви Кули во Струмица, изработен од НУ Завод за заштита на спомениците на културата и Музеј - Струмица (12-217/1 од 07.04.2018 год.);

2. Работите од ст.1 од диспозитивот на ова одобрение да се завршат не подолго од десет (10) години во рамките на обезбедените средства, во соработка со НУ Завод и Музеј - Струмица;

3. Ова Конзерваторско одобрение престанува да важи доколку инвеститорот не почне со изградба во рок од две (2) години од денот кога одобрението согласно со прописите за градење станало правосилно.

1  Управа за заштита на културното наследство      Ул. „Народен фронт“ бр. 3, Скопје; 111040 220  
contact@uzkh.gov.mk      +389 2 5517 700  
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Република Северна Македонија  
Министерство за култура  
УПРАВА ЗА ЗАШТИТА НА КУЛТУРНОТО НАСЛЕДСТВО

УПБр. 08-892  
15.11.2019 година  
Скопје

УПРАВАТА ЗА ЗАШТИТА НА КУЛТУРНОТО НАСЛЕДСТВО, орган во состав на Министерството за култура со својство на правно лице, врз основа на член 87 од Законот за заштита на културното наследство („Службен весник на Република Македонија“ бр.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, 39/16 и 11/18), по барање на Општина Струмица (бр. 23-136/17 од 13.11.2019 год.) издава,


**КОНЗЕРВАТОРСКО ОДОБРЕНИЕ**

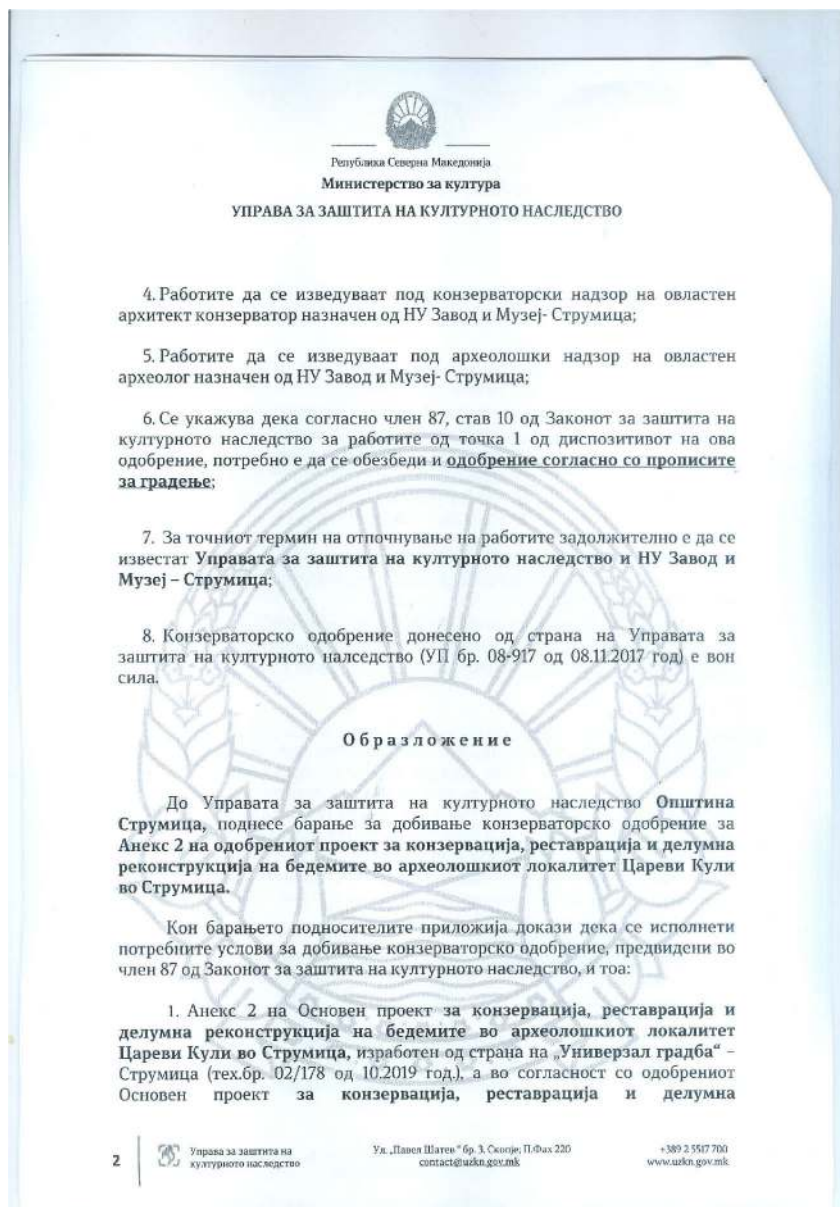
за Анекс 2 на одобрениот проект за конзервација,  
реставрација и делумна реконструкција на бедемите  
во археолошкиот локалитет Цареви Кули во  
Струмица

1. На Општина Струмица, се издава конзерваторско одобрение за реализација на Анекс 2 за конзервација, реставрација и делумна реконструкција на бедемите во археолошкиот локалитет Цареви Кули во Струмица, изработен од страна на „Универзал градба“ - Струмица (тех.бр. 02/178 од 10.2019 год.), а во согласност со одобрениот Основен проект за конзервација, реставрација и делумна реконструкција на бедемите во археолошкиот локалитет Цареви Кули во Струмица, изработен од НУ Завод за заштита на спомениците на културата и Музеј - Струмица (12-217/1 од 07.04.2018 год.);

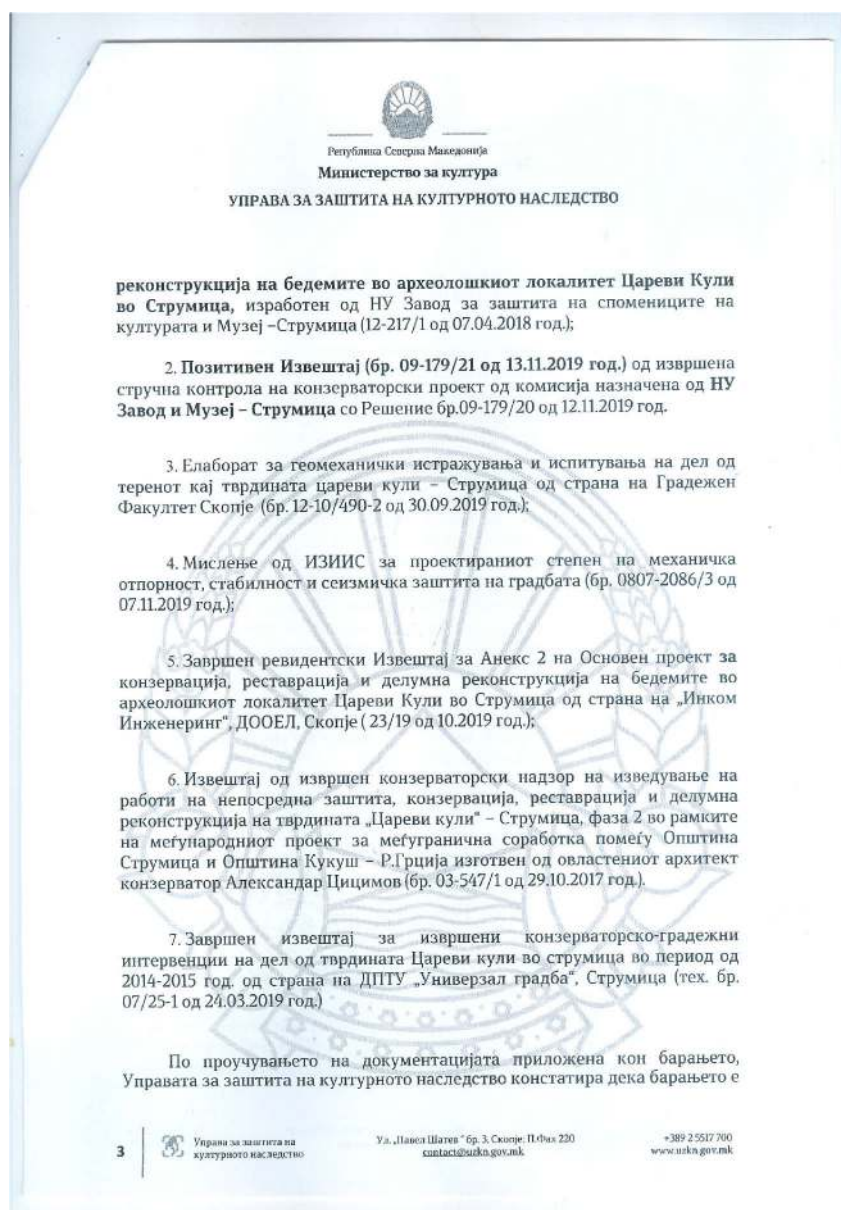
2. Работите од ст.1 од диспозитивот на ова одобрение да се завршат не подолго од десет (10) години во рамките на обезбедените средства, во соработка со НУ Завод и Музеј - Струмица;

3. Ова Конзерваторско одобрение престанува да важи доколку инвеститорот не почне со изградба во рок од две (2) години од денот кога одобрението согласно со прописите за градење станало правосилно.

1  Управа за заштита на културното наследство      Ул. „Народен фронт“ бр. 3, Скопје, 11.040 220  
contact@uzkn.gov.mk      ~389 2 5517 700  
www.uzkn.gov.mk







  
Република Северна Македонија  
Министерство за култура  
УПРАВА ЗА ЗАШТИТА НА КУЛТУРНОТО НАСЛЕДСТВО

основано и условите во смисла на чл. 87 од Законот за заштита на културното наследство и член 3 од Правилникот за конзерваторски проекти се исполнети.

Управата од аспект на културното наследство, ова одобрение го издава во согласност со **Позитивен Извештај** (бр. 09-179/21 од 13.11.2019 год.) од извршена стручна контрола на конзерваторски проект од комисија назначена од **НУ Завод и Музеј – Струмица** со Решение бр.09-179/20 од 12.11.2019 год., Мислење од ИЗИИС за проектираниот степен на механичка отпорност, стабилност и сеизмичка заштита на градбата (бр. 0807-2086/3 од 07.11.2019 год.), како и Завршен ревидентски Извештај за Анекс 2 на Основен проект за конзервација, реставрација и делумна реконструкција на бедемите во археолошкиот локалитет Цареви Кули во Струмица од страна на „Инком Инженеринг“, ДООЕЛ, Скопје (23/19 од 10.2019 год.). Врз основа на горенаведената документација проектното решение е во согласност со физичката состојба и вредностите на заштитеното добро и работите може да се изведат според приложениот проект.


Поради наведеното е одлучено како во диспозитивот на одобрението.

**ПРАВНА ПОУКА:** Против овој акт може да се изјави жалба во рок од 15 дена до Државна комисија за одлучување во управна постапка и постапка од работен однос во втор степен.

Директор,  
  
**Лјубо Костов**

Изработил: д.и.н. Б. Кузмановска  
Изработил/Одобрил: м.р. Б. Јовановска

Доставено до:  
- Општина Струмица  
- НУ Завод и Музеј – Струмица  
- архива  
- Досие  
- Одделение за инспекциски надзор

4 |  Управа за заштита на културното наследство  
Ул. „Павел Шатев“ бр. 3, Скопје; П.Факс 220  
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www.uzkn.gov.mk

ANNEX 2 Opinion from Ministry of Environment and Physical Planning

Република Македонија  
 Министерство за животна средина  
 и просторно планирање

Архивски број: 11-4547/2  
 Дата: 27. 09. 2018

ДО: ОПШТИНА СТРУМИЦА  
 Ул. Сандо Масев бр.1  
 2400 Струмица

ПРЕДМЕТ: Доставување на Мислење

ВАШ БРОЈ: Ваш број 28-101/7 од 30.07.2018 година

Почитувани,

Во прилог на овој допис Ви доставуваме Мислење со број 11-4547/2, по Ваше известување за намера за изведување на проектот: Економска валоризација и алтернативна туристичка понуда на Цареви Кули во туристичка дестинација Струмица, општина Струмица, за потребите на инвеститорот општина Струмица.

Со почит,

МИНИСТЕР  
 Sadulla Duraki

Изготвил: Сашо Навески  
 Контролирал: Александар Петковски  
 Согласил: Билјана Петковска  
 Одобрил: Директор на управа за животна средина  
 Xhezmi Salu

Република Македонија  
 Министерство за животна средина  
 и просторно планирање

Бул. "Томе Делчев" бр.18,  
 1000 Скопје,  
 Република Македонија  
 Тел: (02) 3251 400  
 Факс: (02) 3220 165  
 Е-пошта:  
 info@mkd.moepp.gov.mk  
 Сайт: www.moepp.gov.mk

3 ОПШТИНА СТРУМИЦА

Примено:	Број	Прилог	Вредност
25	1019		



Република Македонија  
Министерство за животна средина  
и просторно планирање

Архивски број: 11-4547/2

Дата: 27. 09. 2013



Република Македонија  
Министерство за  
животна средина  
и просторно  
планирање

Бул. "Гоце Делчев" бр.18,  
1000 Скопје,  
Република Македонија  
Тел: (02) 3251 400  
Факс: (02) 3220 165  
Е-пошта:  
info@okdm.gov.mk  
Сайт: www.moepp.gov.mk

Почитувани,

Во врска со вашето Известување за намера со број 11-4547/1 од 01.09.2018 година, кое се однесува за изведување на проектот: Економска валоризација и алтернативна туристичка понуда на Цареви Кули во туристичка дестинација Струмица, општина Струмица, за потребите на инвеститорот општина Струмица, Управата за животна средина при Министерството за животна средина и просторно планирање Ви го доставува следното:

#### МИСЛЕЊЕ

Согласно Законот за животна средина (Службен весник на Република Македонија бр.53/2005, 81/2005, 24/2007, 159/2008, 83/2009, 48/2010, 124/2010, 51/2011, 123/2012, 93/2013, 42/2014, 44/2015 129/2015 и 39/2016), и Уредбата за определување на проектите и за критериумите врз основа на кои се утврдува потребата за спроведување на постапката за оцена на влијанијата врз животната средина (Службен весник на Република Македонија бр. 74/2005, 109/2009 и 202/2016), Уредбата за дејностите и активностите за кои задолжително се изработува Елаборат, а за чие одобрување е надлежен органот за вршење на стручни работи од областа на животната средина (Службен весник на Република Македонија бр.36/2012) и 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 Република Македонија бр.32/2012), за горенаведениот проект не треба да се изготвува Елаборат за заштита на животна средина и не треба да се води постапка за оцена на влијанието на проектот врз животната средина.

Со почит,



Директор на  
Управа за животна средина  
Xhezmi Sallu

Изработил: Сашо Илиев  
Контролирал: Александар Петковски  
Согласен: Билјана Петковска

ANNEX 3 CHMP