Municipal Development Fund of Georgia

Arrangement of Tourism Infrastructure at Khertvisi Fortress Complex in Aspindza Municipality

Sub-project Environmental and Social Screening and

Environmental Review

WORLD BANK FINANCED
THIRD REGIONAL DEVELOPMENT PROJECT

December 2016

Sub-project Description

The Sub-Project (SP) on *Arrangement of Tourism Infrastructure at Khertvisi Fortress Complex* envisages:

- Restoration-reconstruction of an old gateway;
- Arrangement of administration office, café and tourist information center;
- Arrangement of water supply, power supply and wastewater systems for tourist infrastructure, car parking and installation of biological treatment units;
- Construction of a public toilet and arrangement of car parking area;
- Rehabilitation of access road to Khertvisi Fortress;
- Landscaping of Khertvisi Fortress area.

The SP site is located in Aspindze Municipality, Southern Georgia, at 253 km distance from Tbilisi and 45 km distance from town Akhaltsikhe. Khertvisi (X-XI centuries) is one of the most ancient fortress in Georgia, located in village Khertvisi. It stands on a high hill at the confluence of the Mtkvari and Paravani rivers. Since 2007, the Khertvisi fortress is included in the tentative list of UNESCO World Heritage. The SP design has been already agreed with National Agency for Cultural Heritage Preservation of Georgia.

The SP envisages implementation of the following works:

Restoration-reconstruction of the old gateway: The eastern gateway represents the main entrance of the fortress. Currently, it is in a poor condition and requires be rehabilitating and preserving. Under the presented SP, restoration of the fortress entrance gateway and installation of a new metal door are planned. During processing of the gateway rehabilitation design, available archive material were taken into consideration, including restoration-measuring data dated 80-ies of the previous century. In order to restore an arch of the gateway, local stone-basalt and lime mortar will be used. In the gateway, there is an apricot tree (Prunus armeniaca) damaging the fence and hindering rehabilitation works. Its removal is required. Due to the fact that the fortress area is registered as the State property, the permission for the tree-cutting has to be obtained from the National Agency of State Property.

Arrangement of administration office, café and tourist information center-There are two existing historical buildings on the territory of the Khertvisi lower fortress. On the one side of the footpath, there is a ruined building registered as private property (the SP does not envisage implementation of any works that would affect this building). On the other side there is a building as well, which is registered as the State property. User rights for this building, as well as for the total area of the fortress, are with the National Agency of Cultural Heritage Preservation of Georgia.

Currently, the building is not functional. It was built with rough-surface basalt stone and the roof is a traditional flat. The overall physical condition of the structure is extremely poor. The SP envisages

rehabilitation of the building (total area-186 m^2, height – 6 m), preservation of its authenticity and arrangement of the tourist infrastructure, including toilet, information center and café.

According to the presented SP, the following works are planned: rehabilitation of existing wooden windows and installation of new wooden windows and doors, replacement of the existing ground layer roofing with clay ground and arrangement of the decorative grass layer on top, rehabilitation of stair and arrangement of its roofing and equipping it with wooden handrail the stairway, rehabilitation of the existing wooden floor, arrangement the layer of decorative grass clod (78 m^2) adjacent area to the building to be rehabilitated.

This building will host a visitors' center (43 m^2), an auxiliary room (23.04m^2), a café (51.03m^2), a kitchen (11m^2) and WC (8m^2). Aimed at wastewater treatment, there will be arranged the biological treatment unit (volume 10m^3/day) adjacent area to the gateway (out of the fortress fence) that will be installed entirely into the ground and will be invisible for tourists. Treated water from the treatment facility will be discharged into the Paravani River.

The land plot allocated for the placement of the wastewater treatment unit registered as Aspindza Municipality property.

The tourist information center and the cafe will be connected to LLC "United Water Supply Company of Georgia" water supply pipeline, along the Akhaltsikhe-Akhalkalaki motor road. Due to the fact that LLC "United Water Supply Company of Georgia" cannot supply raw water without chlorination, the SP plans construction of the chlorination building (extension area - 13 m2, height - 3.6 m. It will be fenced with a metallic net), adjacent to the land plot of the wastewater treatment unit. The water reservoir (volume - 10 m3) will be placed near it as well. The land plot allocated for the placement of the reservoir and the chlorination building is registered as Aspindza Municipality property.

The administration building, located slightly away from the tourist information center, represents a damaged historical building (total area- 54 m^2, height- 4m). The SP envisages rehabilitation of the building for the fortress administration. Within the SP, the masonry of the façade wall of the building will be restored, grass layer on the flat roof will be arranged, wooden doors and windows will be installed, the building and its adjacent area will be cleaned up from sediment ground (51 m^3), decorative grass clod (82 m^2) will be arranged adjacent area to the administration building. The SP area is registered as the State property and transferred for use to the National Agency for Cultural Heritage Preservation of Georgia.

Power Supply will be provided to the buildings from the power transformer located at the entrance of the fortress. Considering that Khertvisi fortress represents a cultural heritage monument, it is not feasible to install gas supply system. Contamination of air with gas boilers emission gases is not desirable. Therefore, according to the SP design, the buildings will be equipped with electric heating systems.

Construction of public toilet and arrangement of car parking area- The SP envisages arrangement of a parking area, a bus stop and a public toilet (extension area- 668.1 m^2, parking area –505m^2, bus stop area- 70 m^2, a public-toilet -12.5 m^2, greenery area -80.6m^2) on the right side of the Aspindza-Vardzia motor road, south-west of Khertvisi Fortress. The land allocated for the parking, the bus stop and the public toilet is registered as municipal property (see attachment #1).

According to the project design, the parking area is intended to be for two buses and five cars. The mentioned territory is pretty permissible for stopping the transport and maneuvering.

Adjacent to the parking area, one-store public toilet (extension area- 12.5 m^2, height – 3.5m) will be arranged (including for persons with disabilities). The wastewater system of the building will be connected to the wastewater treatment unit (volume 1.6 m3/day), which will be located on the backside of the building. Treated water from the treatment facility will be discharged into the Mtkvari River. Treated water will not have any negative impact on the local environment. The Technical characteristics of treating facility and treatment data do not exceed the norms established by the environmental technical regulation approved by Resolution No. 17, January 3, 2014 of Georgian Government. The land plot allocated for the placement of the wastewater treatment unit is registered as Aspindza Municipality property.

Water will be supplied to the building from the water reservoir located adjacent area to the fortress. Water pipelines follows along the existing road and do not cross any private property.

According to the SP design, the buildings will be equipped with electric heating systems.

As the parking area and the public toilet located adjacent to the Mtkvari River, the SP envisages arrangement of gabions with rubble stone (length -16 m, width -1m) and rehabilitation of the existing retaining wall.

The parking area will be paved with asphalt/concrete layer (470m^2). Within the SP, project site landscaping is planned, in particular, grass colt layer (37m^2), outdoor lighting, wooden benches (9 pieces) and decorative litterbins (5 pieces) will be arranged and evergreen bushes will be planted.

Rehabilitation of access road and path to Khertvisi Fortress- The road is started from the Aspindza-Vardzia motor road and divided into three sections (800 m^2). The SP envisages arrangement of concrete pavement on the first and third section of the road (most intensively used for traffic movement) while the second section, used as pedestrian path, will be paved with natural stone (basalt) (see attachment 1). Along the road and path, decorative grass cold will be arranged.

The SP also envisages arrangement of outdoor lightning along the road as well as the path and rehabilitation of the fences of local population with natural stone-basalt. The locals expressed their positive attitudes and confirmation in written form.

According to the "Investment Financing Agreement between Municipal Development Fund of Georgia and Self-governing Body of Aspindza Municipality", Apindza Municipality will be responsible for maintenance of the parking area and the public toilet (including wastewater treatment units, chlorination building and water

reservoir). National Agency for Cultural Heritage Preservation of Georgia will be responsible for maintenance of the facilities, including administration building, tourist information center and café, based on the "Investment Financing Agreement between Municipal Development Fund of Georgia and National Agency for Cultural Heritage Preservation of Georgia".

Environmental Screening and Classification

(A) IMPACT IDENTIFICATION

Does the subproject have a tangible impact on the environment?	The SP will have a modest short-term negative environmental impact and it is expected to have tangible long-term positive impact on the natural and social environment.
What are the significant beneficial and adverse environmental effects of the subproject?	The SP is expected to have positive long-term social impact through provision of the tourist infrastructure at Khertvisi Fortress complex. Arrangement of the light touristic infrastructure will improve touristic attraction. The increased tourist flows will have positive social impact through improvement of employment opportunities and supporting the development of tourism-based economy and cultural heritage circuits in the Samtskhe - Javakheti region. The SP implementation will create opportunity for new jobs for local population and increase their incomes. As the SP is to be implemented on a CH site, there is higher than average likelihood of encountering chance-finds during excavation works. In case of chance findings during the earth works the contractor should immediately stop any kind of physical work at the area and should inform MDF. MDF will in turn inform the Ministry of Culture and Monument Protection of Georgia that takes the responsibility for future actions. Work resuming may be provided only based on the written permission from the Ministry. The expected negative environmental and social impacts are likely to be short term and typical to medium scale rehabilitation works in modified landscape: noise, dust, vibration, and emissions from the operation of construction machinery; generation of construction waste.

	According to the letter from Aspindza Municipality, construction company can dispose construction waste and inert materials on one of two land plots in village Tmogvi, about 10 km distance from the SP site (see attachment 1); The contractor will be responsible for levelling disposed materials and waste. Intense movement of heavy machinery and transportation of construction materials will cause nuisance for local population and tourists live adjacent area to the road and path to be rehabilitated. In operation phase proper management of generated solid waste and waste water should be ensured to reduce impact on the environment. The SP envisages arrangement of waste water treatment units for the public toilets and the café and litterbins as well. Increased tourist flows may have indirect negative environmental impacts, such as: waste generation, vandalism, etc.
May the subproject have any significant impact on the local communities and other affected people?	The SP does not consider any land acquisition and does not entail any other type of resettlement. The SP envisages rehabilitation of the fences of local population with natural stone-basalt. The locals expressed their positive attitudes and confirmation in written form. Negative impacts are short term and limited to the construction site. They are related to the possible disturbance described above. Any other negative impacts on local population and economic livelihoods of local people are not expected to occur. There are no street vendors that will need to be relocated. The long-term social impact will be positive, after construction and rehabilitation of the public facilities number of employees will be increased. Moreover, temporary jobs will be created during construction and hence, income of the part of local population will be increased. This will contribute the development of the private sector and will lead to the growth of tourism-related production. Better transport conditions will be created which in turn will contribute development of tourism. After the construction works of tourist information center, café, administration office and other facilities, number of employed persons will increase and income of local population will increase proportionally as well. It will increase presence of

	private sector, and result in growing number of tourism related enterprises.

(B) MITIGATION MEASURES

Were there any alternatives to the sub-project design considered?	During processing of the entry gateway rehabilitation, available archive material were taken into consideration, including restoration-measuring data dated 80-ies of the previous century and the restoration measuring materials were studied and considered. Providing of the conveyance opportunities for disabled was added to the initial design of tourist infrastructure. Discussions were carried out regarding to the arrangement of the road and the path. According to the first alternative, the road and the path would be paved with natural flat surface and local rocky relief. The second alternative envisages arrangement of the road and the path pavement with concrete layer and natural relief stone as well. As the road has been divided into 3 sections and two of them are intended for traffic movement and the one section for pedestrians, the second alternative has been chosen. Thus, within the SP , concrete pavement on the first and third section of the road (most intensively used for traffic movement) will be arranged, while the second section, used as pedestrian path, will be paved with natural stone (basalt) (see attachment 1).
What types of mitigation measures are proposed?	The expected negative impacts of the construction phase can be mitigated by demarcation of the construction site, traffic management, good maintenance of the construction machinery, observance of the established working hours, and well organized disposal of waste to the formally agreed sites. According to the letter from Aspindza Municipality, construction company can dispose construction waste and inert materials on one of two land plots in village Tmogvi, about 10 km distance from the SP site (see attachment 1); The contractor will be responsible for levelling disposed materials and waste. Instead of transporting excess inert material through several settlements to the landfill, it may be disposed in an alternative

	location approved by local (municipal) governing bodies in written. In case of chance finds, works will be taken on hold and notification be sent to the Ministry of Culture and Monument Protection of Georgia. Works will resume only upon written consent of the Ministry. Biological wastewater treatment unit will be installed and maintained properly to avoid water pollution by newly arranged sewage system.
What lessons from the previous similar subprojects have been incorporated into the project design?	Based on the lessons learned from previous similar projects, design envisages not only construction of the new building but also arrangement of resting areas for visitors, landscaping of the SP area and installation of individual waste water treatment units. Details securing the rights of using the building (information center, public toilet) and parking by disabled people is envisaged by the SP design.
Have concerned communities been involved and have their interests and knowledge been adequately taken into consideration in subproject preparation?	MDF and local municipality will organize consultation meeting to discuss draft about ER with local population before tendering of the construction works.

D) CATEGORIZATION AND CONCLUSION

Based on the screening outcomes,

Subproject is classified as environmental Category

A ☐

B ■

C ☐

Conclusion of the environmental screening:

1. Subproject is declined ☐
2. Subproject is accepted ■

If accepted, and based on risk assessment, subproject preparation requires:

1. Completion of the Environmental Management Checklist for Small Construction and Rehabilitation Activities ☐
2. Environmental Review, including development of Environmental Management Plan ■

Social Screening

Social safeguards screening information		Yes	No
1	Is the information related to the affiliation, ownership and land use status of the sub-project site available and verifiable? (The screening cannot be completed until this is available)	✓ [1]	
2	Will the sub-project reduce people's access to their economic resources, such as land, pasture, water, public services, sites of common public use or other resources that they depend on?		✓
3	Will the sub-project result in resettlement of individuals or families or require the acquisition of land (public or private, temporarily or permanently) for its development?		✓
4	Will the project result in the temporary or permanent loss of crops, fruit trees and household infra-structure (such as ancillary facilities, fence, canal, granaries, outside toilets and kitchens, etc)?		✓
If answer to any above question (except question 1) is "Yes", then OP/BP 4.12 Involuntary Resettlement is applicable and mitigation measures should follow this OP/BP 4.12 and the **Resettlement Policy Framework**			

Cultural resources safeguard screening information		Yes	No
5	Will the project require excavation near any historical, archaeological or cultural heritage site?	✓	
If answer to question 5 is "Yes", then **OP/BP 4.11Physical Cultural Resources** is applicable and possible chance finds must be handled in accordance with OP/BP and relevant procedures provided in the **Environmental Management Framework**.			

[1] The Khertvisi fortress area, including buildings to be rehabilitated, is registered as the State property and user rights are held by the National agency for Cultural Heritage Preservation of Georgia. The area intended for parking, public toilet and bus stop is registered as Aspindza Municipal property. The land plots allocated for the placement of water reservoir, the chlorination building and the wastewater treatment unit are registered as Aspindza Municipality property. Water and sewage pipes will be arranged along the access road to Khertvisi Fortress. Cadastral information is attached.

Environmental Review and Environmental Management Plan

1. Introduction

1.1. Background Information

The Government of Georgia has requested the financing of $60 million from the World Bank for implementation of the Third Regional Development Project (RDP 3). The total project cost is $ 75 million and includes $15 million funding from the Government of Georgia. The proposed project will be implemented by the Municipal Development Fund of Georgia (MDF).

The proposed development objective of RDP 3 is to improve infrastructure services and institutional capacity to support the development of a tourism-based economy of the Samtskhe-Javakheti and Mtskheta-Mtianeti regions. The envisaged activities are expected to bring direct benefits to the residents of these regions as well as to the tourists visiting them. More specifically, implementation of the project is expected to improve access, quality and reliability of public infrastructure; increase the volume of private sector investment in the region; and increase points of sales (tourism-related enterprises) in renovated culture heritage sites and cities. The Government will benefit from improved institutional capacity of selected agencies and local-self-governments. Overall, the population is expected to see higher incomes and better quality of life.

The SP for the Arrangement of Tourism Infrastructure at Khertvisi Fortress is a part of the RDP 3 and shall be prepared, reviewed, approved, and implemented in agreement with the requirements of the Georgian legislation and the World Bank policies applicable to the RDP 3.

1.2. Institutional Framework

The Municipal Development Fund of Georgia (hereinafter: the MDF) is a legal entity of public law, the objective of which is to support strengthening institutional and financial capacity of local government units, investing financial resources in local infrastructure and services and improving on sustainable basis the primary economic and social services for the local population (communities). MDF is designated as an implementing entity for the RDP III and is responsible for its day-to-day management, including application of the environmental and social safeguard policies.

MDF prepares and submits to the World Bank for approval the Subproject Appraisal Reports (SARs), with safeguards documents attached. These may include, as case may be, an Environmental Review (ER) along with an Environmental Management Plan (EMP), an EMP prepared using the Environmental Management Checklist for Small Construction and Rehabilitation Activities, and a Resettlement Action Plan (RAP).

According to the “Investment Financing Agreement between Municipal Development Fund of Georgia and Self-governing Body of Aspindza Municipality”, Apindza Municipality will be responsible for maintenance of the parking area and the public toilet (including wastewater treatment unit). National Agency for Cultural Heritage Preservation of Georgia will be responsible for maintenance of the facilities, including chlorination building, waste water treatment unit, located adjacent to the fortress, administration building, tourist information center and café, based on the “Investment Financing Agreement between Municipal Development Fund of Georgia and National Agency for Cultural Heritage Preservation of Georgia”.

1.3 Legislation and Regulations

According to the law of Georgia on Permit on Environmental Impact (2008) the SP does not require preparation of EIA and obtaining of Permit on Environmental Impact.

The SP triggers to the OP/BP 4.01 Environmental Assessment and OP/BP 4.11 Physical Cultural Resources safeguard policies.

According to the above mentioned safeguard policies and the Environmental Management Framework adopted for the current program, the SP has been classified as B (+) category and requires preparation of Environmental Review (ER) and environmental Management Plan (EMP), in complains with recommendations of Environmental Management Framework (EMF).

In the gateway, there is an apricot tree (Prunus armeniaca) damaging the fence and hinering rehabilitation works. Its removal is required. Due to the fact that the fortress area is registered as the State property, permission for cutting of the mentioned tree has to be obtained from the National Agency of State Property.

2. Subproject description

The Sub-Project (SP) on *Arrangement of Tourism Infrastructure at Khertvisi Fortress Complex* envisages:

- Restoration-reconstruction of an old gateway;
- Arrangement of administration office, café and tourist information center;
- Arrangement of water supply, power supply and wastewater systems for tourist infrastructure, car parking and installation of biological treatment units;
- Construction of a public toilet and arrangement of car parking area;
- Rehabilitation of access road to Khertvisi Fortress;
- Landscaping of Khertvisi Fortress area.

The SP site is located in Aspindze Municipality, Southern Georgia, at 253 km distance from Tbilisi and 45 km distance from town Akhaltsikhe. Khertvisi (X-XI centuries) is one of the most ancient fortress in Georgia, located in village Khertvisi. It stands on a high hill at the confluence of the Mtkvari and Paravani rivers. Since 2007, the Khertvisi fortress is included in the tentative list of UNESCO World Heritage. The SP design has been already agreed with National Agency for Cultural Heritage Preservation of Georgia.

The SP envisages implementation of the following works:

Restoration-reconstruction of the old gateway: The eastern gateway represents the main entrance of the fortress. Currently, it is in a poor condition and requires be rehabilitating and preserving. Under the presented SP, restoration of the fortress entrance gateway and installation of a new metal door are planned. During processing of the gateway rehabilitation design, available archive material were taken into consideration, including restoration-measuring data dated 80-ies of the previous century. In order to restore an arch of the gateway, local stone-basalt and lime mortar will be used. In the gateway, there is an apricot tree (Prunus armeniaca) damaging the fence and hindering rehabilitation works. Its removal is required. Due to the fact that the fortress area is registered as the State property, the permission for the tree-cutting has to be obtained from the National Agency of State Property.

Arrangement of administration office, café and tourist information center-There are two existing historical buildings on the territory of the Khertvisi lower fortress. On the one side of the footpath, there is a ruined

building registered as private property (the SP does not envisage implementation of any works that would affect this building). On the other side there is a building as well, which is registered as the State property. User rights for this building, as well as for the total area of the fortress, are with the National Agency of Cultural Heritage Preservation of Georgia.

Currently, the building is not functional. It was built with rough-surface basalt stone and the roof is a traditional flat. The overall physical condition of the structure is extremely poor. The SP envisages rehabilitation of the building (total area-186 m^2, height – 6 m), preservation of its authenticity and arrangement of the tourist infrastructure, including toilet, information center and café.

According to the presented SP, the following works are planned: rehabilitation of existing wooden windows and installation of new wooden windows and doors, replacement of the existing ground layer roofing with clay ground and arrangement of the decorative grass layer on top, rehabilitation of stair and arrangement of its roofing and equipping it with wooden handrail the stairway, rehabilitation of the existing wooden floor, arrangement the layer of decorative grass clod (78 m^2) adjacent area to the building to be rehabilitated.

This building will host a visitors' center (43 m^2), an auxiliary room (23.04m^2), a café (51.03m^2), a kitchen (11m^2) and WC (8m^2). Aimed at wastewater treatment, there will be arranged the biological treatment unit (volume 10m^3/day) adjacent area to the gateway (out of the fortress fence) that will be installed entirely into the ground and will be invisible for tourists. Treated water from the treatment facility will be discharged into the Paravani River.

The land plot allocated for the placement of the wastewater treatment unit is registered as Aspindza Municipality property.

The tourist information center and the cafe will be connected to LLC "United Water Supply Company of Georgia" water supply pipeline, along the Akhaltsikhe-Akhalkalaki motor road. Due to the fact that LLC "United Water Supply Company of Georgia" cannot supply raw water without chlorination, the SP plans construction of the chlorination building (extension area - 13 m2, height - 3.6 m. It will be fenced with a metallic net), adjacent to the land plot of the wastewater treatment unit. The water reservoir (volume - 10 m3) will be placed near it as well. The land plot allocated for the placement of the reservoir and the chlorination building is registered as Aspindza Municipality property.

The administration building, located slightly away from the tourist information center, represents a damaged historical building (total area- 54 m^2, height- 4m). The SP envisages rehabilitation of the building for the fortress administration. Within the SP, the masonry of the façade wall of the building will be restored, grass layer on the flat roof will be arranged, wooden doors and windows will be installed, the building and its adjacent area will be cleaned up from sediment ground (51 m^3), decorative grass clod (82 m^2) will be arranged adjacent area to the administration building. The SP

area is registered as the State property and transferred for use to the National Agency for Cultural Heritage Preservation of Georgia.

Power Supply will be provided to the buildings from the power transformer located at the entrance of the fortress.

Considering that Khertvisi fortress represents a cultural heritage monument, it is not feasible to install gas supply system. Contamination of air with gas boilers emission gases is not desirable. Therefore, according to the SP design, the buildings will be equipped with electric heating systems.

Construction of public toilet and arrangement of car parking area- The SP envisages arrangement of a parking area, a bus stop and a public toilet (extension area- 668.1 m^2, parking area –505m^2, bus stop area- 70 m^2, a public-toilet -12.5 m^2, greenery area -80.6m^2) on the right side of the Aspindza-Vardzia motor road, south-west of Khertvisi Fortress. The land allocated for the parking, the bus stop and the public toilet is registered as municipal property (see attachment #1).

According to the project design, the parking area is intended to be for two buses and five cars. The mentioned territory is pretty permissible for stopping the transport and maneuvering.

Adjacent to the parking area, one-store public toilet (extension area- 12.5 m^2, height – 3.5m) will be arranged (including for persons with disabilities). The wastewater system of the building will be connected to the wastewater treatment unit (volume 1.6 m3/day), which will be located on the backside of the building. Treated water from the treatment facility will be discharged into the Mtkvari River. Treated water will not have any negative impact on the local environment. The Technical characteristics of treating facility and treatment data do not exceed the norms established by the environmental technical regulation approved by Resolution No. 17, January 3, 2014 of Georgian Government. The land plot allocated for the placement of the wastewater treatment unit is registered as Aspindza Municipality property.

Water will be supplied to the building from the water reservoir located adjacent area to the fortress. Water pipelines follows along the existing road and do not cross any private property.

According to the SP design, the buildings will be equipped with electric heating systems.

As the parking area and the public toilet located adjacent to the Mtkvari River, the SP envisages arrangement of gabions with rubble stone (length -16 m, width -1m) and rehabilitation of the existing retaining wall.

The parking area will be paved with asphalt/concrete layer (470m^2). Within the SP, project site landscaping is planned, in particular, grass colt layer (37m^2), outdoor lighting, wooden benches (9 pieces) and decorative litterbins (5 pieces) will be arranged and evergreen bushes will be planted.

Rehabilitation of access road and path to Khertvisi Fortress- The road is started from the Aspindza-Vardzia motor road and divided into three sections (800 m^2). The SP envisages arrangement of concrete pavement on the first and third section of the road (most intensively used for traffic movement) while the second section, used as pedestrian path, will be paved with natural stone (basalt) (see attachment 1). Along the road and path, decorative grass cold will be arranged.

The SP also envisages arrangement of outdoor lightning along the road as well as the path and rehabilitation of the fences of local population with natural stone-basalt. The locals expressed their positive attitudes and confirmation in written form.

According to the "Investment Financing Agreement between Municipal Development Fund of Georgia and Self-governing Body of Aspindza Municipality", Apindza Municipality will be responsible for maintenance of the parking area and the public toilet (including wastewater treatment units, chlorination building and water reservoir). National Agency for Cultural Heritage Preservation of Georgia will be responsible for maintenance of the facilities, including administration building, tourist information center and café, based on the "Investment Financing Agreement between Municipal Development Fund of Georgia and National Agency for Cultural Heritage Preservation of Georgia".

3. Baseline Environmental Conditions

The SP site is located in Aspindze Municipality, Southern Georgia, at 253 km distance from Tbilisi and 15 km distance from town Aspindza. Khertvisi (X-XI centuries) is one of the most ancient fortress in Georgia, located in village Khertvisi. It stands on a high hill at the confluence of the Mtkvari and the Paravani rivers. A fortification was first built on the site in the 2nd century BC but was reputedly destroyed by Alexander the Great. The present fortress dates from the fourteenth century.

The territory consists of two main parts: the citadel and the wall. The Citadel stands on a narrow ledge that is protected by a high vertical cliff. The towers of the fortress are well protected and standing out is the main tower - a building constructed of well-crafted and stacked stones. In addition, it should be noted that there is the five-sided turret, which protects the east side. The fortress is supplied with drinking water through a tunnel, attached from the northwest. A small church and some remains of other structures are located in the western part. From the eastern wall two tunnels go down to the river; one was used for water delivery, the other – as a communication system. The present condition of the fortress can be explained by the fact that in the 12th it practically revived and grew into a city.

The geological-engineering study of the area showed that on SP site and territories in adjacent area to them are stable and are in satisfying geological engineering condition.

The average annual temperature in the region is 9.0°C, average temperature in January is -2°C, in August -20.0C°, annual precipitation is 500-580 mm.

Landscape is modified as a result of the anthropogenic influence; The fortress is surrounded with the Paravani River at the north and the small rural houses of local residents at the south.

Since 2007, the Khertvisi fortress is included in the tentative list of UNESCO World Heritage. Respectively the interest of tourists and pilgrims towards the site is high and in addition, it is characterized with great potential from tourism development standpoint. Currently, in the vicinity of the fortress, there is no assisting infrastructure to support tourism development, e.g. Information Center, Food bars, and Toilets; Lack of WCs also represents significant problem.

Currently, the fortress entrance gate, to be rehabilitated under the SP has been outdated and damaged. The masonry of the gate's stone wall is also exhausted and loosened.

In the fortress area there is a ruined building, remaining only walls, registered as private property. However, the SP does not envisage implementation of any work on this building. As for the two buildings, located within the fortress, currently, are not functional. The overall physical condition of the structures are extremely poor.

The road and the path (800 m^2) into be rehabilitated and arranged, is started from Vardzia-Khertvisi-Mirashkhani motor road. Nowadays, the road is badly damaged that prevents the normal and safe movement of transport; reduce road capacity and leads to an increase in emissions. From the one side, the road is surrounded by rocky slope of the fortress. From other side, there are private owned houses and land plots. The fences of the private houses are much damaged and in a poor condition. The SP envisages rehabilitation of the fences with natural stone –basalt. The owners has expressed their positive attitudes and confirmation toward the rehabilitation of their fences in written form.

The parking area, registered as municipal property, is surrounded on the one side by the Mtkvari River and on other side by Vardzia-Khertvisi-Mirashkhani motor road. Currently, on the SP site the existing parking lot has been since the 1970s and at present it is in a poor condition. The asphalt pavement is damaged and the public-toilet does not meet modern standard requirements.

3. Potential Impacts

4.1 Construction Phase

4.1.1. Social Impacts

- **General set of social issues.** No significant social issues are associated with implementation and operation of this SP.
- **Resettlement Issues.** The SP does not imply private land acquisition and no permanent impacts are envisaged on private or leased agricultural lands and private assets or businesses.
- **Positive impact related to Job opportunities for construction workers.** Limited and temporary during construction and limited during operation.
- **Health issues related to noise, emissions, and vibration.** Limited and temporary.
- **Traffic Disruption**. Local traffic can be impacted limited and temporary by transport activities related to the SP.
- **Safety and Access.** There will be reduced access to areas adjacent to rehabilitation and potential hazards to vehicles and pedestrians during rehabilitation downtime.

4.1.2. Impacts on the physical Cultural Property

The SP envisages implementation of works in the area of Khertvisi Fortress. These works include rehabilitation of entrance gate, arrangement of administration office, café and tourist information center, arrangement of water supply, power supply and wastewater systems for tourist infrastructure, car parking and installation of biological treatment units, construction of a public toilet and arrangement of car parking area; rehabilitation of access path to Khertvisi Fortress; landscaping of Khertvisi Fortress area.

In the process of elaboration of the rehabilitation project there were considered the archive material, including restoration-measuring drawings prepared in the 80-ies of the previous century. Therefore, the risk of negative impacts on the structural integrity and historical value of the Fortress complex is minimal. In course of rehabilitation and construction activities, especially during soil excavation works, chance finds may be encountered. In such cases,

works will be immediately taken on hold and the Ministry of Culture and Monument Protection will be informed. Works may resume only upon formal permission from the National Agency for Cultural Heritage Preservation.

Operational phase risks are related to management of visitation, preventing vandalism on site, maintenance of water supply and sanitation systems, and household waste management.

4.1.3. Environmental Impacts

Soil Pollution

Potential pollutants from a SP of this nature include the following (this list is not exhaustive):

- Diesel fuel, lubrication oils and hydraulic fluids, antifreeze, etc. from construction vehicles and machinery;
- Miscellaneous pollutants (e.g. cement and concrete);
- Construction wastes (packaging, stones and gravel, cement and concrete residue, wood, etc.).

Water Pollution

Water pollution may result from a variety of sources, including the following:

- Spillages of fuel, oil or other hazardous substance, especially during refuelling;
- Releasing silt water from excavations;
- Silt suspended in runoff waters ("construction water");
- Washing of vehicles or equipment;
- Exposure of contaminated land and groundwater;
- Impact on surface and/or underground water with chlorine-containingwaste water that are expected to be formed in washing and disinfection process before launching operation of newly installed water pipes.

Spillages may travel quickly downhill to a watercourse or water body. Once in a watercourse, it can be difficult to contain the pollution which can then impact over a wide area downstream. It is therefore vital that prompt action is taken in the event of any potential water pollution incident.

Once the working width has been stripped of topsoil, the subsoil becomes exposed. During earthworks in a wet weather this may result in uncontrolled release of suspended solids from the work area.

Air Pollution and Noise

Potential impact of air pollution is minimal and related to operation of vehicles and heavy machinery at the construction site and during transportation of materials.

- Noise and vibration arising from heavy machinery and vehicles;
- Air emissions (from vehicles, bulldozers, excavators etc.);
- Dust (from vehicles);
- Fumes may be a concern linked to supply and transportation of materials.

Construction Related Wastes

Construction Wastes

The following types of inert waste are anticipated to be produced from these activities:

- Natural materials (soil and rock);
- Contaminated soil with non-hazardous substance or objects;
- Inert materials generated due to the demolition works within the Monastery are (tiles, stones, white brick, wood);
- Packaging materials;
- Metals (including scrap metal and wire) – negligible amount of metal waste is expected;
- Debris and domestic waste located on the area for tourist infrastructure arrangement.

Hazardous Construction Wastes

Small quantities of the hazardous wastes will arise mainly from the vehicle maintenance activities. A number of hazardous wastes, which could be generated, include:

- liquid fuels;
- lubricants, hydraulic oils;
- chemicals, such as anti-freeze;
- contaminated soil;
- spillage control materials used to absorb oil and chemical spillages;
- machine/engine filter cartridges;
- Oily rags, spent filters, contaminated soil, etc.).

Transport related impacts

- Noise & Vibration Impacts;
- Traffic congestion (nuisance);
- Air pollution;
- Mud on roads;
- Refuelling, maintenance and vehicle cleaning and related risks of soil and water contamination.

Topsoil losses due to topsoil stripping

- Topsoil washout due to improper storage and reinstatement;
- Silt runoff to watercourses and water bodies;
- Exposure of contaminated land.

4.2 Operation Phase

Potential impact related to the operation of the provided light infrastructure would be the following:

- Increase of the number of tourists will result in the increased volume of waste and noise;
- The traffic will increase in adjacent area of CH sites, which will result in the increased level of local emissions and noise as well as traffic safety issues;
- Tours of sites of worshipping may conflict with local traditions and/or religious beliefs.

The potential risk of pollution is related to disruption of wastewater treatment process due to not proper operation and maintenance of the wastewater treatment units.

According to the "Investment Financing Agreement between Municipal Development Fund of Georgia and Self-governing Body of Aspindza Municipality", Apindza Municipality will be responsible for maintenance of the parking area and the public toilet (including wastewater treatment unit). National Agency for Cultural Heritage Preservation of Georgia will be responsible for maintenance of the facilities, including chlorination building, waste water treatment unit, located adjacent to the fortress, administration building, tourist information center and café, based on the "Investment Financing Agreement between Municipal Development Fund of Georgia and National Agency for Cultural Heritage Preservation of Georgia".
Positive social impact will be related to the increasing of the touristic infrastructure that will have positive effect on the local population, in terms of employment.

5. Environmental Management Plan

This Environmental Management Plan (EMP) has been prepared to ensure that negative environmental impacts associated with this SP are minimized.

The contractor is required:

1. To obtain construction materials only from licensed providers;
2. If contractor wishes to open quarries or extract material from river bed (rather than purchasing these materials from other providers), then the contractor must obtain licenses for inert material extraction;
3. If contractor wishes to operate own asphalt (rather than purchasing these materials from other providers), then the contractor must obtain an environmental permit with an established ceiling of pollutant concentrations in emissions;
4. If contractor wishes to operate own concrete plant (rather than purchasing these materials from other providers), then the contractor must prepare technical report on inventory of atmospheric air pollution stationary source and agree with the Ministry of Environment and Natural Resources Protection (MoENRP);
5. Construction waste must be disposed on the Aspindza municipal landfill (in accordance with written agreement between the construction company and the local municipality. The records of waste disposal will be maintained as proof for proper management as designed.
6. If over 200 tons of non-hazardous waste or over 1000 tons of inert materials or 120 kg of hazardous waste is generated annually (calculation apply to a calendar year) as a result of contractor's general activities, they shall prepare and cause the Ministry of Environment and Natural Resources Protection of Georgia to approve the Waste Inventory and Waste Management Plan for the Company, appoint an environmental manager, and submit an information on his/her identity to the Ministry of Environment and Natural Resources Protection of Georgia in accordance with requirements of the Waste Code of Georgia.
7. Wastewater treatment unit to be arranged within the SP shall ensure treatment of wastewater in compliance with the requirements of the ``Technical regulation for discharging effluent from industrial and non-industrial facilities into surface water bodies`` adopted by the Resolution #17 of the Government of Georgia of January, 2014.

Copies of extraction licenses (if applicable), agreed technical report on inventory of atmospheric air pollution for operating concrete plants (if applicable), and waste disposal agreement must be submitted to the MDF prior to the commencement of works.

GOST and SNIP norms must be adhered.

ENVIRONMETAL MANAGEMENT PLAN

Activity	Expected Negative Impact	Mitigation Measure	Responsible for implementation
Pre-Construction Phase			
General Conditions	Incompliance to Georgian Law and World Bank requirements	The following permits/licenses and agreements should be obtained by the works contractor and submitted to the MDF: – Agreement for disposal (stockpiling) of excessive soil – Licenses for inert material extraction (As required) – Permits for production of such construction materials that belongs to the activity subject to ecological examination – Technical report on inventory of atmospheric air pollution stationary source and agree with the Ministry of Environment and Natural Resources Protection (MoENRP) – Agreement on household and construction waste disposal on the Aspindza landfill.	Construction contractor
Notification of the local community on upcoming activities	Incompliance to Georgian Law and World Bank requirements	Place informational banner on the construction site carrying contact information for MDF, works supervisor company and local municipality administration. Make the banner from weather resistant material. Provide information in Georgian and English languages.	Construction contractor
Arrangements for implementation of environmental measures	Incompliance to Georgian Law and World Bank requirements Significant environmental and social impacts	– Appointing a person responsible for protection of social and natural environment and EMP implementation , – Training of workers regarding to social and environmental protection measures to be implemented – Delivery of supplies required for implementation of planned mitigation measures	Construction contractor
Construction Phase			
Construction works, including:	Deterioration of ambient air	– All vehicles shall be maintained so that their emissions do not cause nuisance to workers or local people. All vehicles shall be checked	Construction contractor

Activity	Expected Negative Impact	Mitigation Measure	Responsible for implementation
- Preparation of construction sites - Earth works - Installation of facilities - Machinery operations - Transportation operations		and repaired in case of need to eliminate increased level of noise due to damaged parts; – Regular maintenance of diesel engines shall be undertaken to ensure that emissions are minimized, for example by cleaning fuel injectors. All plant used on site shall be regularly maintained so as to be in good working order at all times to minimize potentially polluting exhaust emissions; – Vehicle refueling shall be undertaken so as to avoid fugitive emissions of volatile organic compounds through the use of fuel nozzles and pumps and enclosed tanks (no open containers will be used to stored fuel); – Materials transported to site shall be covered/ wetted down to reduce dust. The construction site shall be watered as appropriate. Protective equipment shall be provided to workers as necessary; – During demolition works destruction dust shall be suppressed by ongoing water spraying and/or installing dust screen enclosures at site; – The surrounding environment (sidewalks, roads) shall be kept free of debris to minimize dust; – earth works shall be suspended during strong winds; – Construction materials and storage piles shall be covered; – Stripped soil/ excavated ground shall be stockpiled properly; – There shall be no open burning of construction / waste material at the site; – There shall be no excessive idling of construction vehicles at sites; – The SP territory shall be reinstatement immediately after finalizing of construction works.	

Activity	Expected Negative Impact	Mitigation Measure	Responsible for implementation
	Propagation of noise and vibration	– The maximum speed shall be restricted in residential areas to the safety level during the pass of the trucks; – Proper technical control and maintenance practices of the machinery shall be applied; – Activities shall be limited to daylight working hours; – No-load operations of the vehicles and heavy machinery are not allowed. Proper mufflers will be used on machinery; – Ensure that machinery is in good technical condition.	Construction contractor
	Damage of soil	– Demarcation of construction sites' boundaries and access roads before construction works are launched; – Adherence to demarcated work site boundaries during operations; – Stripping of topsoil from work sites (whenever possible) before starting of earthworks and stockpiling for subsequent reinstatement, in compliance with the Technical Regulations on Stripping, Stockpiling, Use and Reinstatement of Topsoil (2014); – Topsoil shall be stored in stockpiles, no more than 2m high with side slopes at a maximum angle of 45^0. The following shall also be taken into consideration: • Dedicated storage locations shall be used that prevents the stockpiles being compacted by vehicle movements or contaminated by other materials; • Topsoil shall be segregated from subsoil stockpiles; • No material shall be stored where there is a potential for flooding; • No storage at less than 25m from river/streams, subject to the site specific topography; – Topsoil stripping during heavy rains will not be allowed;	Construction contractor

Activity	Expected Negative Impact	Mitigation Measure	Responsible for implementation
		– Stored topsoil shall be used for reinstatement and landscaping of the SP area immediately after completion of construction works. As appropriate, this may include leveling of ground surface, reinstatement of topsoil and measures to facilitate natural recovery of vegetation; Topsoil from the sites, which will not be reinstated to the initial conditions shall be distributed carefully on the surrounding area; – In the event that the stockpiles experience significant erosion the contractor will be required to implement corrective action, such as installing erosion matting over the stockpiles if further surface compaction and/or topsoil seeding fails. The Contractor shall protect the stockpiles from flooding and run-off by placing berms or equivalent around the outside where necessary; – subsoil shall be stored in stockpiles, no more than 3m high with side slopes at a maximum angle of 60^0; dedicated storage locations shall be used that prevents the stockpiles being compacted by vehicle movements or contaminated by other materials; subsoil shall be segregated from topsoil stockpiles.	

Activity	Expected Negative Impact	Mitigation Measure	Responsible for implementation
	Water and soil pollution	– Provision of staff with toilets and bathrooms, and centralized discharge of generated wastewater in the sewer systems if possible or install temporary structures; – Ensuring that machinery are well maintained; – Refueling of machinery using respectively equipped refueling trucks, and using of drip trays during refueling operations; – Refueling and maintenance of machinery only at a specially devoted site, where topsoil is tripped and grovel layer is arranged; lubricants, fuel and solvents shall be stored exclusively in the designated sites; No fuel, lubricants and solvents storage or re-fuelling of vehicles or equipment will be allowed near the cultural heritage site; – Ensuring that construction materials are appropriately stockpiled and stored in the specially designated and temporarily constructed storage facilities; – Temporarily storage on site of all hazardous or toxic substances shall be in safe containers labeled with details of composition, properties and handling information; Spill containment materials (sorbents, sand, sawing, chips etc.) should be available on construction site; – Ensure that all spills are cleaned up immediately, and contaminated soil is respectively disposed off; – Wet cement and/or concrete will not be allowed to enter any watercourse, pond or ditch. – Cleaning up of the entire SP territory from construction waste as soon as the construction works are finalized.	Construction contractor
	Pollution of environment by solid and liquid wastes	– Burning of waste is prohibited; – Paints with toxic ingredients or solvents or lead-based paints shall not be used.	Construction contractor

Activity	Expected Negative Impact	Mitigation Measure	Responsible for implementation
		– Different types of waste (construction, hazardous, household) shall be collected separately; special sites shall be designated for waste accumulation and pollution prevention measures shall be applied there; – Construction inert waste and excess soil should be disposed on territory allocated by the Aspindza Municipality; – Temporarily storage of all hazardous or toxic substances shall be in safe containers labelled with details of composition, properties and handling information; Uncontrolled storage of hazardous wastes on the construction area is prohibited; the containers of hazardous substances shall be placed in an leak-proof container to prevent spillage and leaching; shall be handed over to a permitted waste management company, on a contractual basis; – Any construction or municipal wastes produced during construction stage should remove from the site area frequently; – Agreements on the disposal of waste shall be obtained prior disposal is undertaken; – Upon completion of washing and disinfection of pipes and reservoirs the disinfection solution will be neutralized by the contractor prior to release to the environment – to avoid damage to terrestrial or aquatic organisms. In the case of disinfection via chlorination this is achieved by application of a reducing agent, such as sodium bisulfate to achieve de-chlorination. The reducing agent, in turn, must be applied by the contractor at the precise dosage to neutralize the disinfectant – but no more, since reducing agent residuals are also detrimental to aquatic ecosystems.	

Activity	Expected Negative Impact	Mitigation Measure	Responsible for implementation
	Impact on traffic flow	– Impose speed limitation to the SP machinery; – Ensure that SP machinery move using only pre-determined routes; – The frequency of machinery movement shall be restricted.	Construction contractor
	Health and safety risks for local community	– Construction site shall be properly secured and construction related traffic regulated. This includes but is not limited to: - Installation of the signposting, warning signs, barriers and traffic diversions: signs shall be clearly visible and the public warned of all potential hazards; - Construction site and all trenches shall be fenced and properly secured to prevent unauthorized access (especially of children); - Appropriate lighting should be provided; - Adjustment of working hours to local traffic patterns, e.g. avoiding major transport activities during rush hours or times of livestock movement; - Imposing of speed limitation to SP machinery - Ensuring that SP machinery move using only pre-determined routes	Construction contractor
	Damage to private property	– Ensuring that sub-project machinery move using only pre-determined routes; – Imposing of speed limitation to the sub-project machinery; – Incurred losses shall be fully compensated by the contractor.	Construction contractor
	Conflicts with local population or other affects people	– Meeting with local population (if required) – Reception and addressing of complaints/grievances : - Grievance Redress committee will be established at the municipal level with the following composition: authorized representative of Aspindza Municipality Sakrebulo and Gamgeoba, Head of the Social	Construction contractor

Activity	Expected Negative Impact	Mitigation Measure	Responsible for implementation
		Service, person in charge of relations with the water supply company, representative of the local NGO. - If the grievance will not unsolved at the local level, it will be lodged to the MDF. - MDF registers all received compliances, comments and how the compliance was addressed - During public consultations, the local population will be informed about the grievance redress issues and received information about contact persons.	
	Occupational health and safety risks	– Informing of the SP labor about potential health and safety risks, and instructing them regarding safety measures to be adhered (before launching construction works and during civil works) – Ensuring that required personal protection equipment (e.g. helmets, gloves, etc.) is supplied and used by workers as appropriate – Ensure safety of machinery operations – Provision of safety signs for high risk zones – Implementation of measures recommended for air protection and noise abatement	Construction contractor
	Impact on cultural heritage	– Suspension of construction operations if archeological objects or artefacts are discovered during earth works, informing the MDF and Ministry of Culture and Monument Protection about the chance finding and resume works only after respective permission is issued; – Cleaning up and reinstatement of the SP area immediately after the construction works are completed.	MDF, Construction contractor

Activity	Expected Negative Impact	Mitigation Measure	Responsible for implementation
Operation Phase			
Operation of the tourist Infrastructure, parking at Khertvisi Fortress including water supply and sewage systems	Pollution of environment with solid waste and waste water	– Regularly deliver solid waste from the site to the Aspindza landfill; – Burning of waste should not be practiced. – Sewage collector systems and biological wastewater treatment facility should be maintained in good technical condition; – Operations & Maintenance Training (upon facility start-up and 4x seasonally during guarantee period) will be executed by works contractor, including supply of Operations Manual and preparation of Training Program (Summary Report).	National Agency for Cultural Heritage Preservation of Georgia (NACHP) Aspindza Municipality

6. Monitoring

MDF carries overall responsibility for monitoring of the implementation of the environmental mitigation measures. A consulting company hired for supervision of works will supplements MDF's in-house capacity for tracking environmental and social compliance of works undertaken under this SP. Field monitoring checklist will be filled out and photo material attached on monthly basis. Environmental monitoring of the SP shall be implemented according with plan given below.

Narrative reporting on the implementation of EMP will be provided on monthly and quarterly basis as part of the general progress reporting of MDF. MDF will also be expected to obtain from contractors and keep on file all permits, licenses, and agreement letters which contractors are required have according to the Georgian law for extracting material, operating asphalt/concrete plants, disposing various types of waste, etc.

7. Remedies for EMP Violation

MDF, as a client of construction works, will be responsible for enforcing compliance of contractor with the terms of the contract, including adherence to the EMP.

The contractor is obliged to carry out any of its activities pursuant to the Georgian Environmental Legislation in force, and in case if any noncompliance is revealed, the contractor shall be liable to cover at its own expense all damage liquidation costs.

8. Costs of Implementation

Costs of implementing the proposed mitigation measures are small and difficult to single out from the costs of construction operations. Nonetheless, it is recommended that Bill of Quantities presented in the tender documentation carry a line item for the disposal of waste and excess materials. Other costs of adherence to good environmental practice and compliance with this EMP are expected to be integrated into the pricing of various construction activities.

9. Grievance Redress Mechanism

Grievance Redress committee will be established at the municipal level with the following composition: authorized representative of Aspindza Municipality Sakrebulo and Gamgeoba, Head of the Social Service, person in charge of relations with the water supply company, representative of the local NGO.

If the grievance will not unsolved at the local level, it will be lodged to the MDF. As for grievance monitoring MDF registers all received compliances, comments and how the compliance was addressed. During public consultations, the local population will be informed about the grievance redress issues and received information about contact persons.

MONITORING MANAGEMENT PLAN

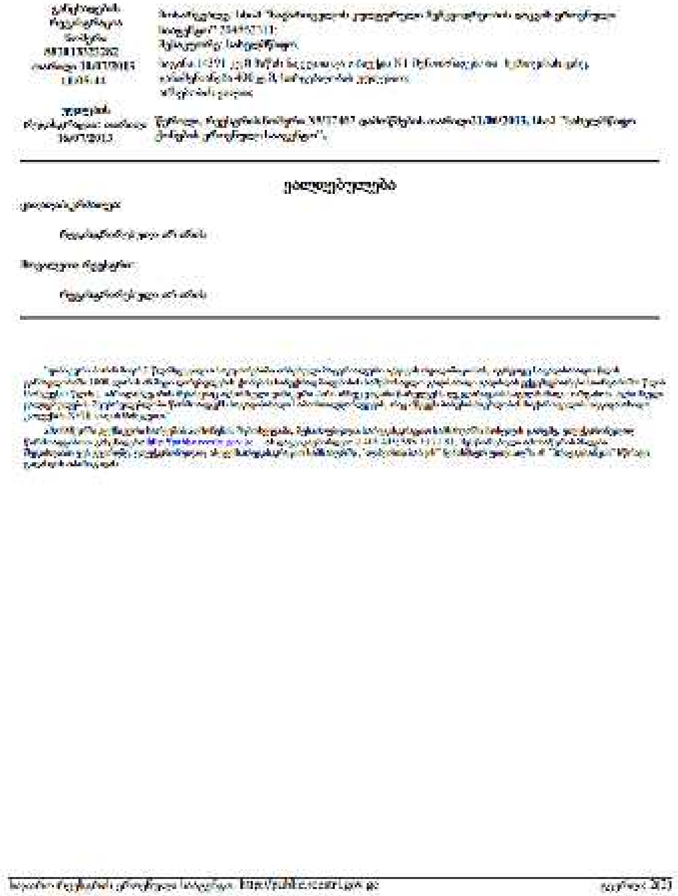
Activity	**What** (Is the parameter to be monitored?)	**Where** (Is the parameter to be monitored?)	**How** (Is the parameter to be monitored?)	**When** (Define the frequency / or continuous?)	**Why** (Is the parameter being monitored?)	**Who** (Is responsible for monitoring?)
CONSTRUCTION PHASE						
Supply with construction materials	Purchase of construction materials from the officially registered suppliers	In the supplier's office or warehouse	Verification of documents	During conclusion of the supply contracts	To ensure technical reliability and safety of infrastructure	MDF, Construction supervisor
Transportation of construction materials and waste Movement of construction machinery	Technical condition of vehicles and machinery Confinement and protection of truck loads with lining Respect of the established hours and routes of transportation	Construction site	Inspection	Unannounced inspections during work hours and beyond	Limit pollution of soil and air from emissions; Limit nuisance to local communities from noise and vibration; Minimize traffic disruption.	MDF, Construction supervisor, Traffic Police
Earthworks	Temporary storage of excavated material in the pre-defined and agreed upon locations; Backfilling of the excavated material and/or its disposal to the formally designated locations;	Construction site	Inspection Permanent oversight by archaeologists	In the course of earth works	Prevent pollution of the construction site and its surroundings with construction waste; Prevent damage and loss of physical cultural resources	MDF, Construction supervisor NACHP
Sourcing of inert material	Purchase of material from the existing suppliers if feasible; Obtaining of extraction license by the works contract and strict	Borrowing areas	Inspection of documents Inspection of works	In the course of material extraction	Limiting erosion of slopes and degradation of ecosystems and landscapes;	MDF, Construction supervisor

Activity	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Who (Is responsible for monitoring?)
	compliance with the license conditions; Terracing of the borrow area, backfilling to the exploited areas of the borrow site, and landscape harmonization; Excavation of river gravel and sand from outside of the water stream, arrangement of protective barriers of gravel between excavation area and the water stream, and no entry of machinery into the water stream.				Limiting erosion of river banks, water pollution with suspended particles and disruption of aquatic life.	
Generation of construction waste	Temporary storage of construction waste in especially allocated areas; Timely disposal of waste to the formally designated locations	Construction site; Waste disposal site	Inspection	Periodically during construction and upon complaints	Prevent pollution of the construction site and nearby area with solid waste	MDF, Construction supervisor
Trafic disruption and limitation of pedestrian access	Installation of traffic limitation/diversion signage; Storage of construction materials and temporary placement of construction waste in a way	At and around the construction site	Inspection	In the course of construction works	Prevent traffic accidents; Limit nuisance to local residents	MDF, Construction supervisor

Activity	What (Is the parameter to be monitored?)	Where (Is the parameter to be monitored?)	How (Is the parameter to be monitored?)	When (Define the frequency / or continuous?)	Why (Is the parameter being monitored?)	Who (Is responsible for monitoring?)
	preventing congestion of access roads					
Workers' health and safety	Provision of uniforms and safety gear to workers; Informing of workers and personnel on the personal safety rules and instructions for operating machinery/equipment, and strict compliance with these rules/instructions	Construction site	Inspection	Unannounced inspections in the course of work	Limit occurrence of on-the-job accidents and emergencies	MDF, Construction supervisor
OPERATION PHASE						
Management of the solid waste	Trash binds provided on site and arrangement in place for timely regular out-transporting of waste	Rehabilitated facilities	Inspection	During operation of facilities	Prevent littering of the site and area around it	Aspindza Municipality Authorities
Maintenance and protection of the Site after the rehabilitation	No unauthorized construction and no informal land use in the vicinity of Khertvisi fortress	Rehabilitated facilities	Inspection	During operation of facilities	Prevent loss of the historical and aesthetic values of the site and surrounding area	Aspindza Municipality Authorities, National Agency for Cultural Heritage Preservation of Georgia

Activity	**What** (Is the parameter to be monitored?)	**Where** (Is the parameter to be monitored?)	**How** (Is the parameter to be monitored?)	**When** (Define the frequency / or continuous?)	**Why** (Is the parameter being monitored?)	**Who** (Is responsible for monitoring?)
Servicing of water supply scheme and sewage treatment unit	Water supply scheme does not leak and water supply uninterrupted Sewage treatment block operate smoothly	Rehabilitated facilities	Inspection	During operation of facilities	Prevent water loss and water logging of the site Prevent pollution of surface and ground water with untreated sewage	Aspidza Municipality Authorities

Attachment 1. Cadastral information and pictures of the site

Cadastral information of Khertvisi fortress (including buildings to be rehabilitated)	
 N 60.09.32.105 — 60 09 32 105	

Cadastral information of Parking Area

N 60.09.32.209

ამონაწერი საჯარო რეესტრიდან

საკადასტრო კოდების განმარტება

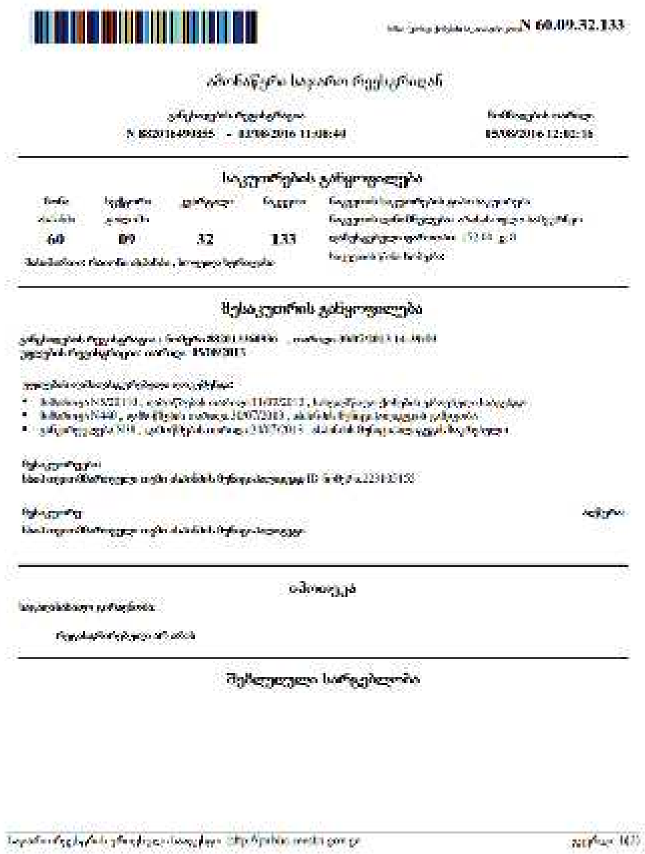
ზონა	ქვეზონა	კვარტალი	ნაკვეთი
60	09	32	209

შენიშვნა

საბოლოო

შესრულებული სამუშაოების

Cadastral information of public toilet (adjacent to the parking)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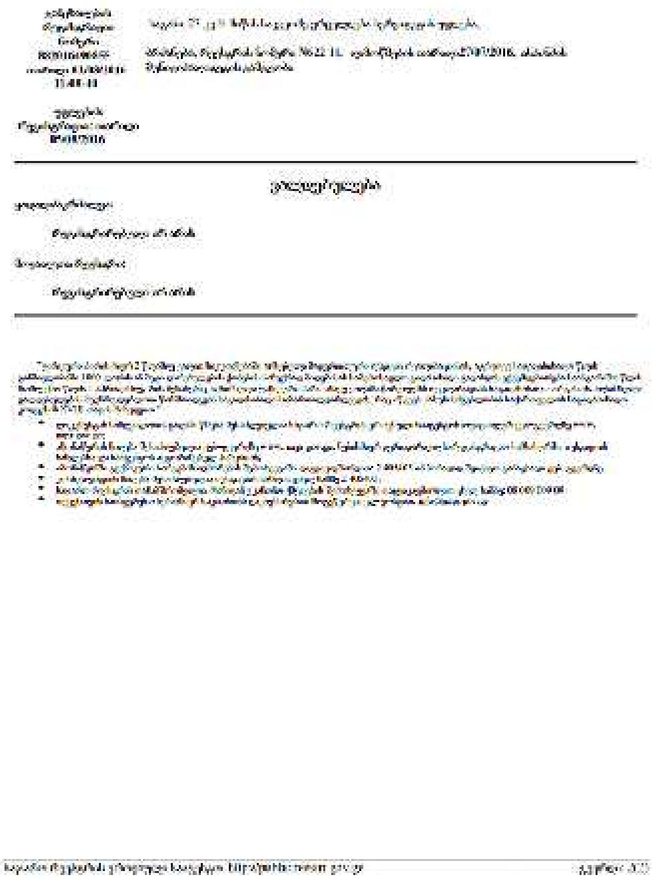

ბიოლოგიური გამწმენდი ნაგებობის საკადასტრო ინფორმაცია (პარკინგის მიმდებარედ)

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ბიოლოგიური გამწმენდი ნაგებობის, წყლის რეზერვუარისა და საქლორატოროს საკადასტრო ინფორმაცია

N 60.09.32.223

ამონაწერი საჯარო რეესტრიდან

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საკუთრების განყოფილება

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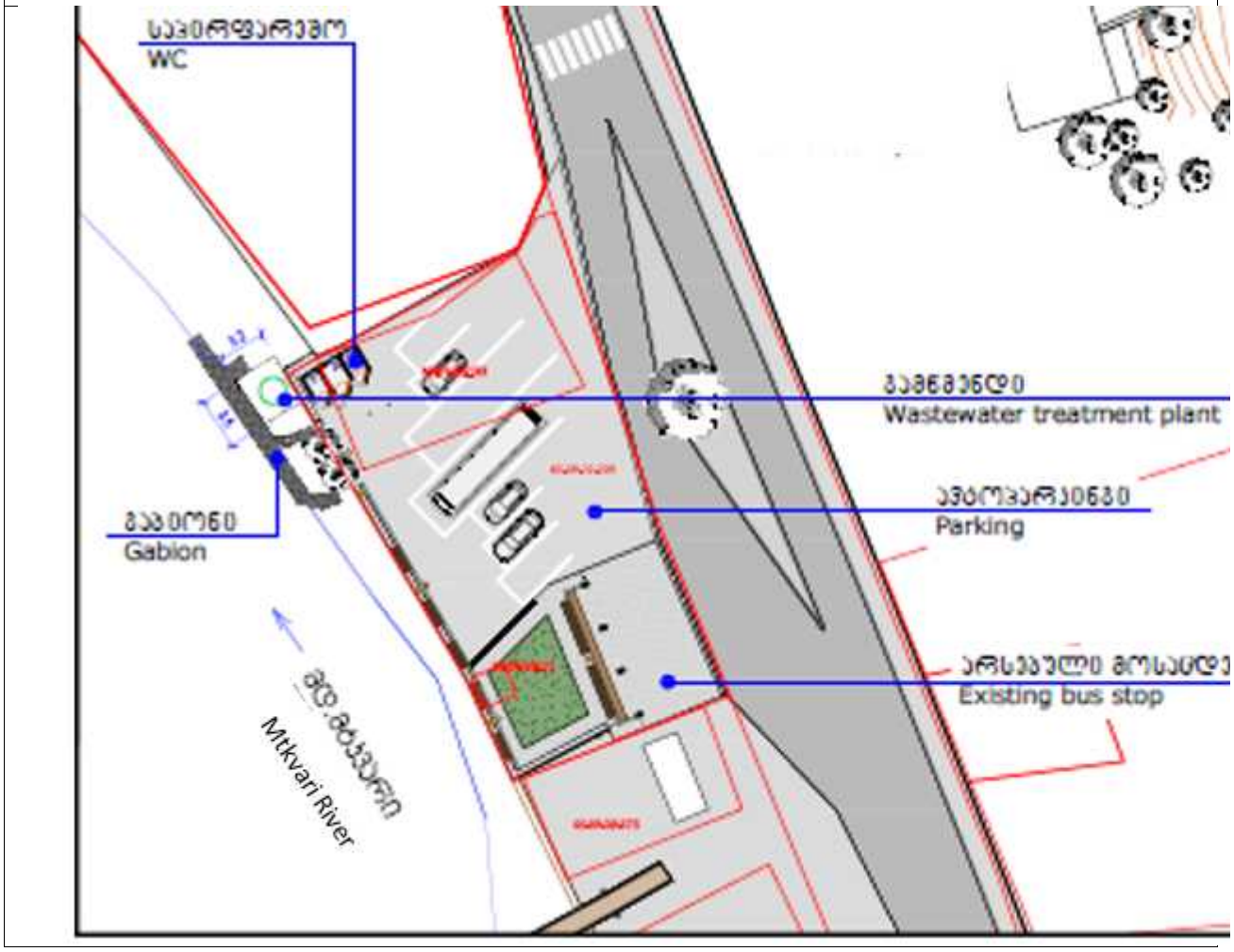
მესაკუთრის განყოფილება

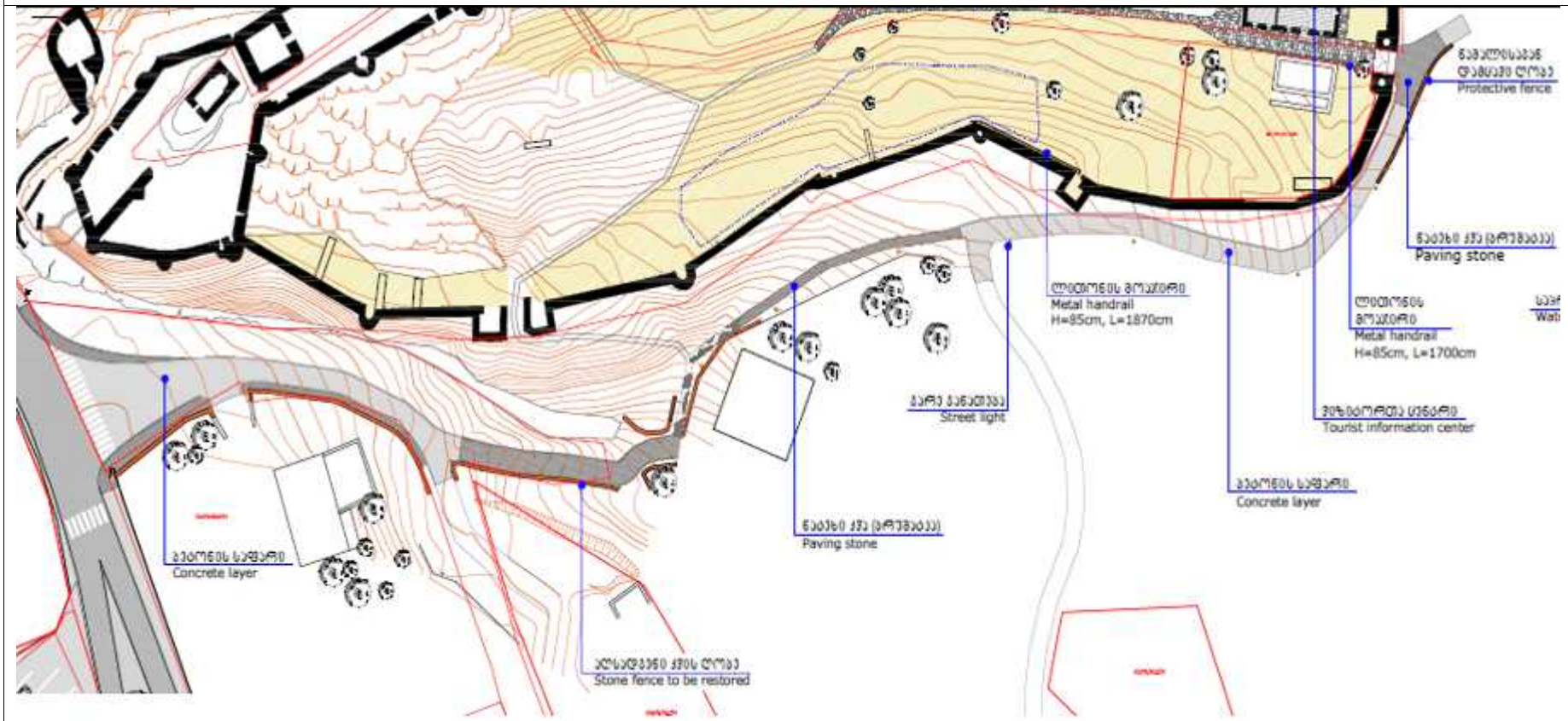
იპოთეკა

ვალდებულება

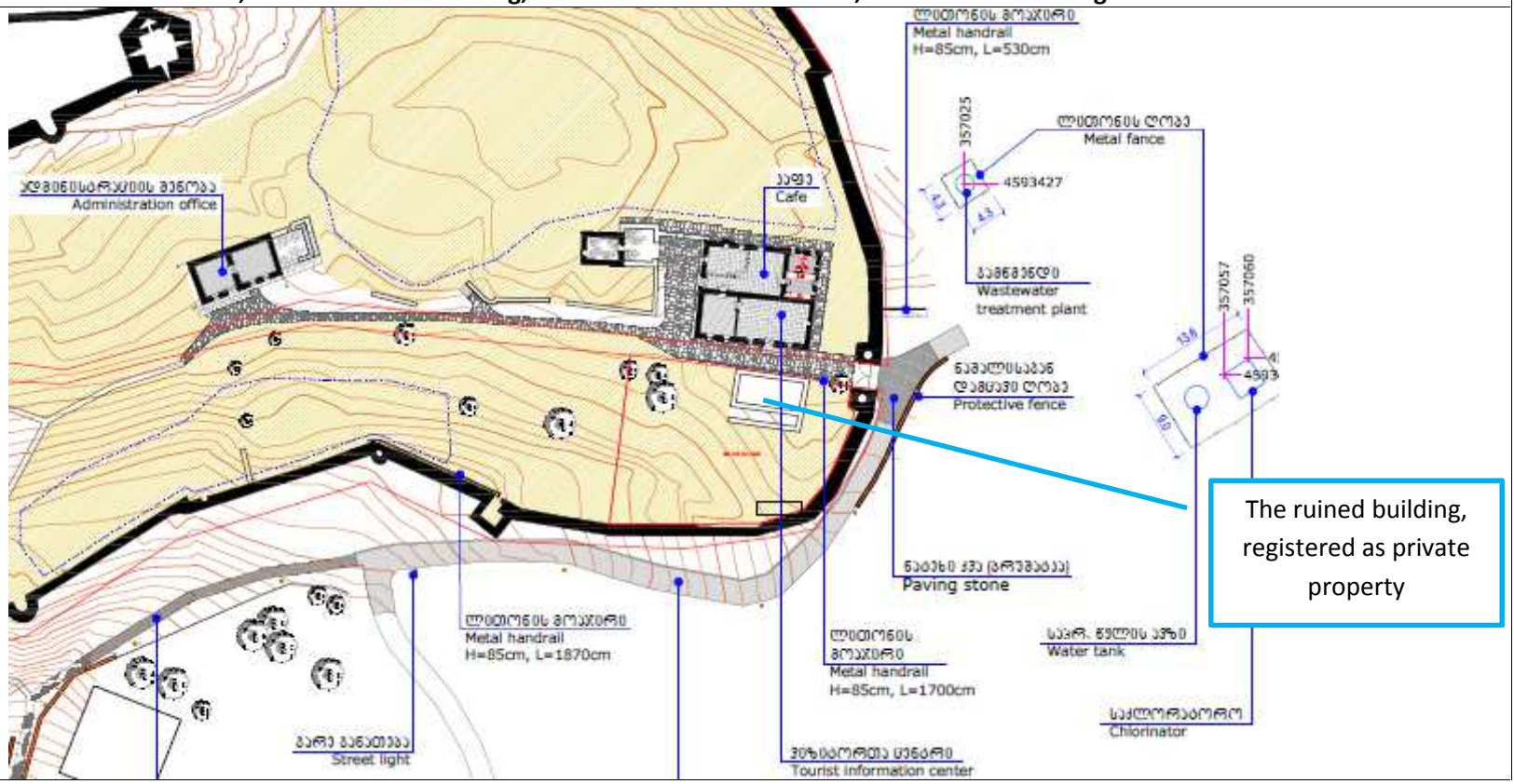
Parking Area



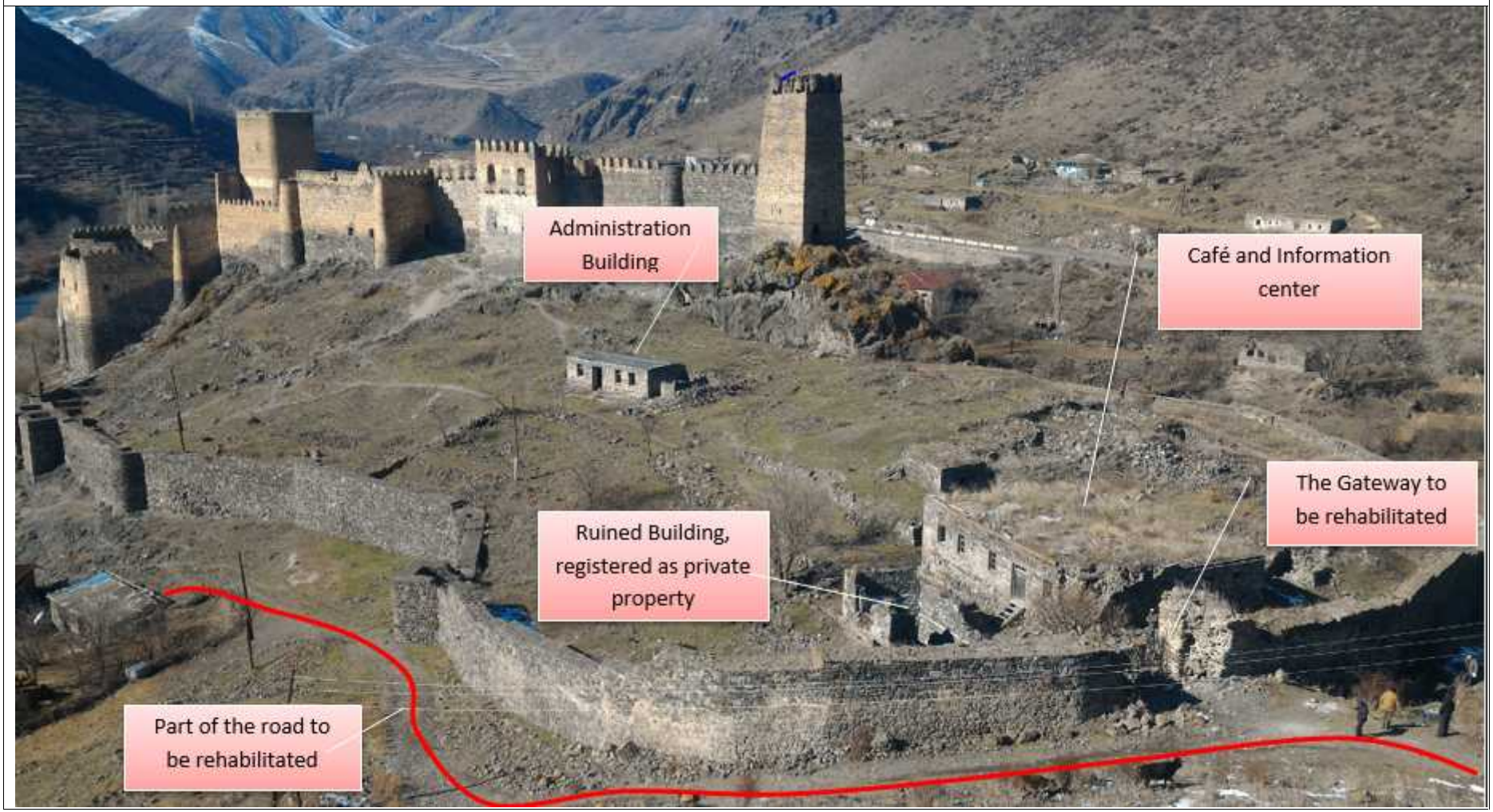
The road to be rehabilitated



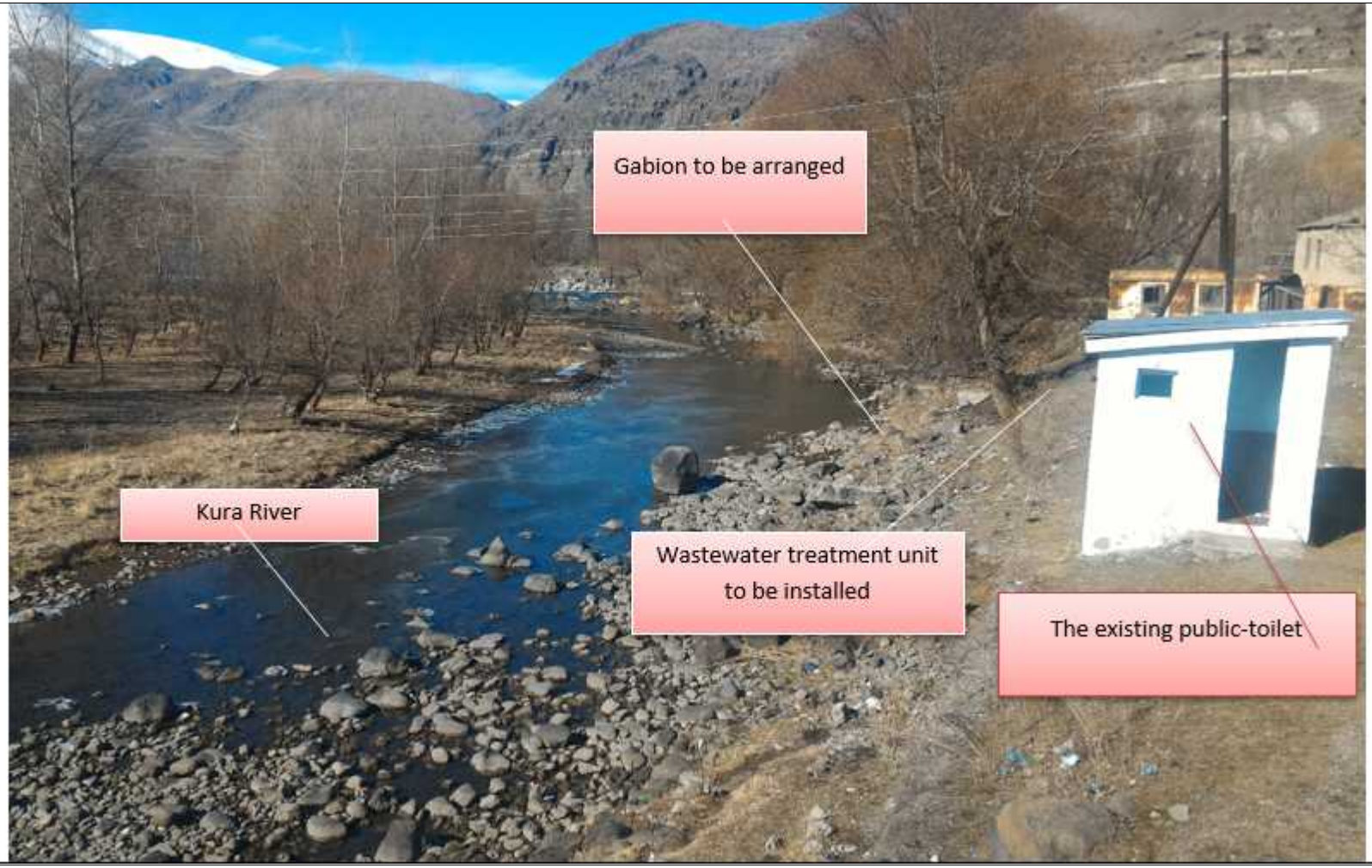
Locations of Tourist Information Center, Administration Building, Wastewater Treatment Unit, Chlorination Building and Reservoir



Khertvisi Fortress



Location of waste water treatment unit, gabion and the existing public toilet



The road and fences to be rehabilitated

Land plot in village Tmogvi, I alternative

Land plot in village Tmogvi, II alternative